

Mental wellbeing at work

Evidence review A: Organisational universal-level approaches

NICE guideline NG212

Evidence reviews underpinning recommendations 1.1.2, 1.1.4, 1.1.6, 1.1.7, 1.2.1, 1.2.2, 1.3.1, 1.3.3, 1.4.1 to 1.4.6, 1.10.2 to 1.10.9, 1.11.2, 1.11.4, 1.11.5 and research recommendations in the NICE guideline

March 2022

Final

*These evidence reviews were developed
by Public Health Internal Guideline
development team*

Disclaimer

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or service users. The recommendations in this guideline are not mandatory and the guideline does not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

Local commissioners and/or providers have a responsibility to enable the guideline to be applied when individual health professionals and their patients or service users wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with compliance with those duties.

NICE guidelines cover health and care in England. Decisions on how they apply in other UK countries are made by ministers in the [Welsh Government](#), [Scottish Government](#), and [Northern Ireland Executive](#). All NICE guidance is subject to regular review and may be updated or withdrawn.

Copyright

© NICE 2022. All rights reserved. Subject to [Notice of rights](#).

ISBN: 978-1-4731-4458-3

1 Universal organisational-level interventions.....	5
1.1 Review questions	5
1.1.1 Introduction.....	5
1.1.2 Summary of the protocol.....	6
1.1.3 Methods of the review.....	7
1.1.4 Evidence identified	7
1.1.5 Summary of the studies included in the effectiveness evidence.....	8
1.1.6 Summary of studies included in the qualitative evidence.	56
1.1.7 Economic evidence	60
1.1.8 Summary of included economic evidence.....	60
1.1.9 Economic model.....	60
1.1.10 Summary of the quality of the effectiveness evidence, certainty of the qualitative evidence and economic evidence statements	61
Quantitative evidence	61
Qualitative evidence	75
Mixed methods.....	94
Economic evidence statement.....	96
1.1.11 The committee's discussion and interpretation of the evidence	96
1.1.12 Recommendations supported by this evidence review.....	102
1.1.13 References	102
Appendices.....	107
Appendix A – Review protocols	107
Appendix B – Literature search strategies.....	120
Database strategies.....	120
Database name:MEDLINE ALL	120
Original searches	120
Original searches	120
Rerun searches.....	126
Appendix C – Effectiveness evidence study selection.....	128
Appendix D – Effectiveness evidence	129
Appendix E – Forest plots.....	573
Appendix F – GRADE profiles	593
Appendix G - Economic evidence study selection	625
Appendix H – Economic evidence tables	626
Appendix I – Health economic model	627
Appendix J – Excluded studies.....	628
Appendix K – Research recommendations – full details.....	648

1 Universal organisational-level interventions

1.1 Review questions

1.1 What universal, organisational-level interventions, programmes, policies or strategies are effective and cost effective at:

- promoting positive mental wellbeing?
- improving mental wellbeing?
- preventing poor mental wellbeing?

1.2 What interventions or strategies effectively and cost-effectively help employers and peers

- to recognise and engage employees who may require support for their mental wellbeing, or
- to identify periods of high risk within an organisation?

1.3 For the following groups in relation to organisational-level targeted interventions, what are their views and experiences of what and why certain approaches may or may not work, and how it could be improved:

- employees receiving them.
- Employers.
- those delivering them.

1.1.1 Introduction

The proportion of UK employees who are part-time, temporary, agency staff, on zero hours contracts or self-employed has increased since PH22 was published in 2009. The Stevenson/Farmer review 'Thriving at work' estimates that 15% of UK workers have an existing mental health condition. Better mental wellbeing and job satisfaction are associated with increased workplace performance and productivity (Department for Business Innovation & Skills 2014). However, many employers know the value of positive mental wellbeing but do not know how to promote it.

Therefore, the objective of this review is to

- identify what universal organisational-level approaches, programmes, strategies or policies are effective and cost-effective at:
 - Preventing poor mental wellbeing
 - Promoting positive mental wellbeing
 - Improving mental wellbeing
- Identify what interventions or strategies are effective and cost-effective at;
 - Recognising and engaging employees who may require support for their mental wellbeing
 - Identifying periods of high risk within an organisation
- Understand the views and experiences of those employees, employers and those delivering the intervention.

The relationship between organisational approaches and mental wellbeing outcomes for employees is complex and can be influenced by a range of factors including work stressors and work-related resources.

1.1.2 Summary of the protocol

Table 1: PICO for universal organisational level approaches

Population	<p>Quantitative and Qualitative Everyone aged 16 years or older in full or part time employment, including:</p> <ul style="list-style-type: none"> • those on permanent, training, temporary or zero hours contracts • those who are self-employed. • volunteers <p>Qualitative</p> <ul style="list-style-type: none"> • Employers, managers • Those delivering them
Intervention	<p>Quantitative and Qualitative Organisational-level approaches delivered to an unselected population in addition to usual practice that aims to (at least one of):</p> <ul style="list-style-type: none"> • improve mental wellbeing. • promote positive mental wellbeing. • prevent poor mental wellbeing. • improve recognition of employees who may require support for their mental wellbeing. • increase engagement with employees who need support for mental wellbeing. • improve identification of periods of high risk within organisations
Comparator	<p>Quantitative Usual practice (this may be called a control group or waiting list control group or other terms in the individual studies)</p> <p>Qualitative Not applicable</p>
Outcomes	<p>Quantitative</p> <ul style="list-style-type: none"> • Any measure of mental wellbeing (using objective measures and/ or validated self-report measures) • Job stress, burnout or fatigue (using objective measures and/ or validated self-report measures) • Symptoms of mental health conditions such as depression, anxiety, insomnia (using validated self-report measures) • Absenteeism • Presenteeism • Productivity • Job satisfaction, engagement or motivation • Quality of life • Uptake of support services <p>Qualitative Themes based on views and experiences with the interventions of:</p> <ul style="list-style-type: none"> • Employees receiving them.

	<ul style="list-style-type: none">• Employers• Those delivering the interventions

1.1.3 Methods of the review

This evidence review was developed using the methods and process described in [Developing NICE guidelines: the manual](#) and in the [methods chapter](#) for this guideline. Methods specific to this review question are described in the review protocol in [Appendix A](#).

Declarations of interest were recorded according to [NICE's conflicts of interest policy](#).

Timepoints

Outcomes were considered at any follow up point. Priority was given to the longest follow up time for an outcome. Other timepoints, including baseline data were reported in the evidence table for information only.

Outcomes

Where data were reported on the same outcome construct (as defined in the protocol), for example, job stress, burnout or fatigue, these were all pooled into a single outcome for the analyses.

1.1.4 Evidence identified

1.1.4.1 Included studies

In total 72,259 references were identified through systematic guideline-wide searches. Of these, 20,186 were screened at title and abstract using priority screening, and 1,416 were included for the whole guideline. Of these, 217 references were considered relevant for RQ1 based on title and abstract screening and were ordered. After full text screening of these references, 62 were eligible for inclusion in the systematic review and 155 were excluded.

A total of 48 studies (reported in 62 papers) were included in this review, where one of the studies was a mixed-methods study where quantitative and qualitative outcomes were extracted separately. Of these studies 43 (including the quantitative element of 1 mixed-methods study) were included and extracted for effectiveness evidence addressing review question 1.1 (23 were randomised controlled trials (16 cluster RCT) and 20 non-randomised studies). The remaining 6 studies (which included the qualitative element of 1 mixed-methods study) were qualitative studies addressing review question 1.3 and are considered further in section 1.1.6. No evidence was found to address review question 1.2. The characteristics of the 43 included effectiveness studies are presented in Table 2 and a brief summary of the interventions presented in Table 3. The characteristics of the 6 qualitative studies are presented in Table 4. See Appendix C for PRISMA diagram and Appendix **D** **Error! Reference source not found.** for full evidence tables.

1.1.4.2 Excluded studies

155 studies did not meet the inclusion criteria and therefore were excluded from the review. 9 studies were secondary publications. See Appendix J for full details of the papers and reasons for exclusion.

1.1.5 Summary of the studies included in the effectiveness evidence.

Table 2: Summary of study characteristics

Study [country]	Study design	Setting	Population	Intervention	Comparator	Outcome(s)
Arapovic-Johansson 2018 [Sweden]	RCT	Workplace <ul style="list-style-type: none"> • Sector: Public • Industry: Health care • Organisation size: Large • Contract type - Not reported. • Seniority – Not reported • Income level - Not reported 	Primary care professionals	Participatory, organizational intervention (ProMES)	Waitlist control group	Employee outcomes <ul style="list-style-type: none"> • Job stress • Mental health symptoms Employer outcomes Not reported
Barrech 2012 [Switzerland]	cRCT	Workplace <ul style="list-style-type: none"> • Sector: Private • Industry: Production site • Organisation size: Large • Contract type - Not reported. • Seniority - Mixed (supervisors and team members) • Income level - Not reported 	Supervisors	Custom-designed educational intervention to reduce job insecurity	Waitlist control group	Employee outcomes <ul style="list-style-type: none"> • Job stress • Mental health symptoms Employer outcomes <ul style="list-style-type: none"> • Not reported
Biggs 2014 [Australia]	nRCT	Workplace: <ul style="list-style-type: none"> • Sector: Public • Industry: Police service • Organisation size: Large • Contract type: Shift work and non-shift work • Seniority: Mixed (constable, senior constable, sergeant, senior sergeant, inspector) • Income: Not reported 	Police officers	Leadership-development programme	No intervention	Employee outcomes <ul style="list-style-type: none"> • Climate • Job satisfaction • Mental wellbeing-work engagement • Mental health symptoms Employer outcomes

Study [country]	Study design	Setting	Population	Intervention	Comparator	Outcome(s)
						<ul style="list-style-type: none"> • Not reported
Bond 2008 [UK]	cRCT	Workplace <ul style="list-style-type: none"> • Sector: Private • Industry: Service (call centre): • Organisation size: Large • Contract type: Not reported. • Seniority: Entry level and non-managerial role • Income: Not reported 	Employees were entry- level and non-managerial	Work redesign	No intervention	Employee outcomes <ul style="list-style-type: none"> • Job stress • Absenteeism Employer outcomes <ul style="list-style-type: none"> • Not reported
Bourbonnais 2006 [Canada]	nRCT	Workplace: <ul style="list-style-type: none"> • Sector: Not reported • Industry: Healthcare • Organisation size: Large • Contract type: Mixed (permanent full time or part time and temporary positions, or who are on call) • Seniority: Mixed (a range of years and occupations) • Income: Not reported 	Employees were all care providers in direct contact with patients (nurses, orderlies, and auxiliary nurses),	Participatory intervention	Usual care	Employee outcomes <ul style="list-style-type: none"> • Mental wellbeing • Mental health symptoms • Stress- burnout Employer outcomes <ul style="list-style-type: none"> • Not reported
Chen 2018 [China]	nRCT	Workplace: <ul style="list-style-type: none"> • Sector: Private • Industry: Manufacturing • Organisation size: Large • Contract type: Not reported. • Seniority: Not reported • Income: Not reported 	Not reported	Reflexivity intervention	Active Control-periodic team building	Employee outcomes <ul style="list-style-type: none"> • Stress- emotional exhaustion Employer outcomes <ul style="list-style-type: none"> • Not reported

Study [country]	Study design	Setting	Population	Intervention	Comparator	Outcome(s)
Demerouti 2017 [Greece]	nRCT	Workplace: <ul style="list-style-type: none"> • Sector: Mixed (private, public and self-employed) • Industry: Mixed (central government, local government, national services and organisations, services, commerce, education, finance, management) • Organisation size: Not reported. • Contract type: Not reported. • Seniority: Not reported • Income: Not reported 	Not reported	Job crafting-employees flexibly modify or create the conditions that help them tailor new tasks or roles to their situation	Active control	Employee outcomes <ul style="list-style-type: none"> • Wellbeing Employer outcomes <ul style="list-style-type: none"> • Not reported
Deneckere 2013 [Belgium]	cRCT	Workplace <ul style="list-style-type: none"> • Sector: Public • Industry: Healthcare • Organisation size: Large • Contract type: Not reported. • Seniority: Mix • Income: Not reported 	Employees were all professionals in the interprofessional team who were at work for 1 week in the 2 month evaluation	Care pathway for improving teamwork	Usual care	Employee outcomes <ul style="list-style-type: none"> • Job stress • Climate Employer outcomes <ul style="list-style-type: none"> • Not reported
Dollard 2014 [Australia]	nRCT	Workplace: <ul style="list-style-type: none"> • Sector: Public • Industry: Not reported • Organisation size: Not reported. • Contract type: Not reported. • Seniority: Mixed (managers and non-managers) 	Not reported	Participatory risk management intervention	Control	Employee outcomes <ul style="list-style-type: none"> • Work stress • Culture • Absenteeism Employer outcomes <ul style="list-style-type: none"> • Not reported

Study [country]	Study design	Setting	Population	Intervention	Comparator	Outcome(s)
		<ul style="list-style-type: none"> Income: Not reported 				
Dubbelt 2019 [The Netherlands]	nRCT	Workplace <ul style="list-style-type: none"> Sector: Public Industry: Education Organisation size: Large Contract type: Not reported. Seniority: Not reported Income: Not reported 	Employees were employed by the university	Job crafting	Control	Employee outcomes <ul style="list-style-type: none"> Wellbeing- work engagement Job satisfaction-career satisfaction Employer outcomes <ul style="list-style-type: none"> Not reported
Engstrom 2005 [Sweden]	nRCT	Workplace: <ul style="list-style-type: none"> Sector: Not reported Industry: Social care (residential) Organisation size: Medium Contract type: Mixed (part time and full time) Seniority: Not reported Income: Not reported 	Not reported	IT Support-increased information technology support in dementia care	Control	Employee outcomes <ul style="list-style-type: none"> Job satisfaction Quality of life Perceived stress Employer outcomes <ul style="list-style-type: none"> Not reported
Framke 2016 [Denmark]	cRCT	Workplace <ul style="list-style-type: none"> Sector: Public Industry: Education Organisation size: Small Contract type: Not reported. Seniority: Mixed leaders, nurses, assistants and others Income: Not reported 	Employees were employed and present during the time of the baseline questionnaire measurements	Organisational-level participatory approach for improving working environment	Control	Employee outcomes <ul style="list-style-type: none"> Job satisfaction Exhaustion Absenteeism Employer outcomes <ul style="list-style-type: none"> Not reported

Study [country]	Study design	Setting	Population	Intervention	Comparator	Outcome(s)
Gordon 2018 [The Netherlands]	cRCT	Workplace: <ul style="list-style-type: none"> • Sector: Not reported • Industry: Healthcare • Organisation size: Not reported. • Contract type: Not reported. • Seniority: Nurses • Income: Not reported 	Not reported	Job redesign through job crafting intervention	Control	Employee outcomes <ul style="list-style-type: none"> • Job satisfaction • Stress-exhaustion Employer outcomes <ul style="list-style-type: none"> • Not reported
Grant 2014 [USA]	cRCT	Workplace: <ul style="list-style-type: none"> • Sector: Public • Industry: Human and social services • Organisation size: Large • Contract type: Not reported. • Seniority: mixed: co-workers and leaders • Income: not reported 	Human and social services employees	Job crafting	Control	Employee outcomes <ul style="list-style-type: none"> • Job stress Employer outcomes <ul style="list-style-type: none"> • Not reported
Hansen 2016 [Norway]	nRCT	Workplace: <ul style="list-style-type: none"> • Sector: private • Industry: mixed • Organisation size: small • Contract type: not reported. • Seniority: mixed: co-workers and leaders • Income: not reported 	Enterprises had less than 20 employees, employed both genders and were located in rural areas	Multicomponent workplace health intervention	Control	Employee outcomes <ul style="list-style-type: none"> • Workplace culture- self-reported work experience • Quality of life • Absenteeism • Presenteeism Employer outcomes <ul style="list-style-type: none"> • Not reported

Study [country]	Study design	Setting	Population	Intervention	Comparator	Outcome(s)
Havermans 2018 [The Netherlands]	nRCT	Workplace: <ul style="list-style-type: none"> • Sector: not reported • Industry: healthcare • Organisation size: large • Contract type: not reported. • Seniority: not reported • Income: mixed (education level low, medium and high) 	Employees are willing to participate in the trial and able to provide a team member who will be responsible for the implementation of SP@W within the team during the trial period, aged 18 or over and have an employment contract at the organisation.	Digital stress prevention intervention	Control	Employee outcomes <ul style="list-style-type: none"> • Stress Employer outcomes <ul style="list-style-type: none"> • Not reported
Holman 2016 [UK]	cRCT	Workplace: <ul style="list-style-type: none"> • Sector: Public • Industry: Services • Organisation size: Medium • Contract type: not reported. • Seniority: not reported • Income: not reported 	Not reported	Participatory job redesign	Control	Employee outcomes <ul style="list-style-type: none"> • Wellbeing • Job satisfaction Employer outcomes <ul style="list-style-type: none"> • Not reported
Holman 2010 [UK]	nRCT	Workplace: <ul style="list-style-type: none"> • Sector: Private • Industry: Health insurance and healthcare (administrative) • Organisation size: Large • Contract type: Not reported. • Seniority: Team members (not managers) • Income: Not reported 	All employees	Participatory job redesign	Control	Employee outcomes <ul style="list-style-type: none"> • Mental wellbeing Employer outcomes <ul style="list-style-type: none"> • Not reported

Study [country]	Study design	Setting	Population	Intervention	Comparator	Outcome(s)
Hulshof 2020 [The Netherlands]	nRCT	Workplace: <ul style="list-style-type: none"> • Sector: Public • Industry: Dutch unemployment agency • Organisation size: Not reported. • Contract type: Not reported. • Seniority: Not reported • Income: not reported 	Employees of a Dutch unemployment agency	Job crafting	Waiting list control	Employee outcomes <ul style="list-style-type: none"> • Work engagement • Empowerment Employer outcomes Not reported
Im 2016 [Korea]	RCT	Workplace: <ul style="list-style-type: none"> • Sector: not reported • Industry: Healthcare • Organisation size: Large • Contract type: not reported. • Seniority: less than 5 years of experience • Income: Not reported 	Employees were nurses who had less than 5 years' experience	Huddling programme	Control	Employee outcomes <ul style="list-style-type: none"> • Wellbeing • Job satisfaction • Stress Employer outcomes <ul style="list-style-type: none"> • Not reported
Jorm 2010 [Australia]	cRCT	Workplace <ul style="list-style-type: none"> • Sector: Public • Industry: Education • Organisation size: Not reported. • Contract type: Not reported. • Seniority: range of roles from support officer to leadership roles • Income: Not reported 	Employees are teachers of the middle years in school (i.e. Years 8-10, ages 12-15 years)	Mental health first aid	Control	Employee outcomes <ul style="list-style-type: none"> • Mental health knowledge • Mental health symptoms Employer outcomes <ul style="list-style-type: none"> • Not reported
Kidger 2016 [England]	cRCT component of mixed	Workplace <ul style="list-style-type: none"> • Public sector • Education 	Secondary school teachers and students in non-fee	Peer support and training intervention	Usual practice	Employee outcomes <ul style="list-style-type: none"> • Mental wellbeing

Study [country]	Study design	Setting	Population	Intervention	Comparator	Outcome(s)
	methods study	<ul style="list-style-type: none"> • Organisation size: Medium • Contract type: not reported. • Seniority: not reported • Income: not reported 	paying, mainstream secondary schools			<ul style="list-style-type: none"> • Depression <p>Employer outcomes</p> <ul style="list-style-type: none"> • Not reported
LeBlanc 2007 [The Netherlands]	cRCT	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: Not reported • Industry: Healthcare • Organisation size: Large • Contract type: not reported. • Seniority: mixed (physicians, nurses, and radiotherapy assistants) • Income: mixed (physicians, nurses, and radiotherapy assistants) 	Employees that work together on common goals or tasks under the supervision of one or more common supervisors	Participatory approach- Team-based burnout intervention program combining a staff support group with a participatory action research approach	Control	<p>Employee outcomes</p> <ul style="list-style-type: none"> • Burnout (emotional exhaustion) • Burnout (depersonalisation) • Stress (emotional job demands) <p>Employer outcomes</p> <p>Not reported</p>
Leiter 2011 [Canada]	nRCT	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: not reported • Industry: healthcare • Organisation size: large • Contract type: mixed (full time, part time, casual and temporary employment) • Seniority: mixed (registered nurses, registered psychiatric nurses, ward clerks, physicians and licensed practical nurses) • Income: 	Employees that expressed an interest in the study	Civility intervention- CREW approach	Control	<p>Employee outcomes</p> <ul style="list-style-type: none"> • Workplace climate- civility • Stress- burnout • Job satisfaction • Absenteeism • Wellbeing- professional efficacy <p>Employer outcomes</p> <p>Not reported</p>
Linzer 2015 [USA]	cRCT	<p>Workplace</p> <ul style="list-style-type: none"> • Sector: Public 	Clinicians who had been with the practice for at least	Healthy Workplace study (HWP)	Control	<p>Employee outcomes</p> <ul style="list-style-type: none"> • Job Stress

Study [country]	Study design	Setting	Population	Intervention	Comparator	Outcome(s)
Linzer 2017 [USA]		<ul style="list-style-type: none"> Industry: Healthcare Organisation size: Not reported. Contract type: Not reported. Seniority: range of general internists, family physicians, nurse practitioners and physician assistants Income: Not reported 	1 year at a minimum of 0.5 full time equivalent weekly.			<ul style="list-style-type: none"> Burnout Job satisfaction <p>Employer outcomes Not reported</p>
Lucas 2012 [US]	Crossover cRCT	<p>Workplace</p> <ul style="list-style-type: none"> Public sector Industry: healthcare Organisation size: Large Contract type: not reported. Seniority: attending physicians Income: professional- high income 	Physicians scheduled for at least 6 weeks of service	2-week ward rotations for physicians	Active control- 4-week ward rotations for physicians	<p>Employee outcomes</p> <ul style="list-style-type: none"> Stress- self defined burnout Stress- emotional exhaustion <p>Employer outcomes Not reported</p>
Ludwigs 2020 [Germany]	RCT	<p>Workplace</p> <ul style="list-style-type: none"> Private sector Industry: Online travel company (trivago) Organisation size: Large Contract type: Not reported. Seniority: Not reported Income: Not reported 	Trivago employees	Wellbeing program	No intervention	<p>Employee outcomes</p> <ul style="list-style-type: none"> Mental wellbeing Mental health symptoms Job satisfaction Work engagement <p>Employer outcomes</p> <ul style="list-style-type: none"> Productivity
Mainsbridge, 2020	RCT	Workplace	Full-time employee with primarily desk-	Microbreak	Waiting list control	Employee outcomes

Study [country]	Study design	Setting	Population	Intervention	Comparator	Outcome(s)
[Australia]		<ul style="list-style-type: none"> Public sector Industry: Department of Police and Emergency Management Size of organisation: Not reported. Contract type: Not reported. Seniority: Not reported Income: Not reported 	based job responsibilities			<ul style="list-style-type: none"> Mental wellbeing Job stress <p>Employer outcomes Not reported</p>
Mattila 2006 [Finland]	nRCT	<p>Workplace:</p> <ul style="list-style-type: none"> Sector: public Industry: municipal public works (manual and office work) Size of organisation: large Contract type: not reported. Seniority: not reported Income: not reported 	Not reported	Participative work conference based on democratic dialogue	Control	<p>Employee outcomes</p> <ul style="list-style-type: none"> Stress- emotional exhaustion Work climate <p>Employer outcomes Not reported</p>
McElligott 2010 [US]	nRCT	<p>Workplace:</p> <ul style="list-style-type: none"> Sector: not reported Industry: healthcare Size of organisation: large Contract type: not reported. Seniority: mixed (staff nurses, advanced practice nurses, management, and other positions) Income: not reported 	Participants were registered nurses, currently working full time or part time on selected units and had agreed to participate in the study.	Holistic programme- The Collaborative Care Model Program	Control	<p>Employee outcomes</p> <ul style="list-style-type: none"> Quality of life <p>Employer outcomes Not reported</p>
Meas 1998 [The Netherlands]	cRCT	<p>Workplace:</p> <ul style="list-style-type: none"> Sector: Private Industry: Manufacturing 	Not reported	Participatory and lifestyle: Work wellness programme	Control	<p>Employee outcomes</p> <ul style="list-style-type: none"> Job Stress

Study [country]	Study design	Setting	Population	Intervention	Comparator	Outcome(s)
		<ul style="list-style-type: none"> • Organisation size: Large • Contract type: not reported. • Seniority: mixed • Income: not reported 		including physical, lifestyle and social/leadership skills training, as well as a participatory approach to support wellness at work including work organisation and environment.		<ul style="list-style-type: none"> • Absenteeism Employer outcomes Not reported
Olson 2015 [US]	cRCT	Workplace <ul style="list-style-type: none"> • Sector: Private • Industry: IT sector • Organisation size: Large • Contract type: Not specified. • Seniority: Not specified • Income: Not specified 	IT workers	STAR-Support.Transform. Achieve.Results. A workplace intervention designed to increase family-supportive supervision and employee control over work time	Usual Practice	Employee outcomes <ul style="list-style-type: none"> • Job Stress Employer outcomes Not reported
Richmond, 2017 [USA]	nRCT	Workplace: <ul style="list-style-type: none"> • Sector: Public • Industry: Government • Organisation size: Large • Contract type: Not reported. • Seniority: Not reported • Income: Not reported 	Employees	Employee Assistance Program	Control	Employee outcomes <ul style="list-style-type: none"> • Presenteeism • Absenteeism • Workplace distress Employer outcomes Not reported
Sakuraya, 2020 [Japan]	RCT	Workplace: <ul style="list-style-type: none"> • Sector: Mixed • Industry: Mixed • Organisation size: Large 	Employees of five private companies [2 in service industry and 3 in	Job crafting	Waiting list control	Employee outcomes <ul style="list-style-type: none"> • Work engagement

Study [country]	Study design	Setting	Population	Intervention	Comparator	Outcome(s)
		<ul style="list-style-type: none"> Contract type: Not reported. Seniority: Not reported Income: Not reported 	manufacturing industry] and one public elementary school			Employer outcomes Not reported
Schelvis, 2017 [Netherlands]	nRCT	Workplace: <ul style="list-style-type: none"> Sector: Public Industry: Education Organisation size: Not reported. Contract type: Not reported. Seniority: Mixed Income: Not reported 	All teaching and non-teaching (i.e. educational and administrative support staff) employees and their managers	Heuristic Method	Control	Employee outcomes <ul style="list-style-type: none"> Mental wellbeing Job stress Job satisfaction Employer outcomes <ul style="list-style-type: none"> Productivity
Song 2019 [USA]	cRCT	Workplace: <ul style="list-style-type: none"> Sector: Private Industry: Retail Organisation size: Large Contract type: mixed (full-time salaried, full-time hourly, part-time hourly) Seniority: mixed Income: mixed (\$9981 to \$49,340 per year) 	Employees needed to be employed for 13 weeks before randomisation	Wellness program- Training focused on nutrition, physical activity, stress reduction and related topics	Control	Employee outcomes <ul style="list-style-type: none"> Mental health symptoms Mental wellbeing Stress at work Employer outcomes Not reported
Svensson 2014 [Sweden]	RCT	Workplace: <ul style="list-style-type: none"> Sector: Public Industry: Public services Organisation size: Large Contract type: Not reported. Seniority: Not reported Income: Not reported 	Employees of social insurance agency, employment agencies, social services, schools, police departments, correctional treatment units, rescue services and recreation centres	Mental Health First Aid	Waiting list control	Employee outcomes <ul style="list-style-type: none"> Mental health literacy Employer outcomes Not reported

Study [country]	Study design	Setting	Population	Intervention	Comparator	Outcome(s)
Uchiyama 2013 [Japan]	cRCT	Workplace <ul style="list-style-type: none"> • Sector: Private • Industry: Healthcare • Organisation size: Large • Contract type: mix of regular and temporary • Seniority: mix of chief, subchief and general • Income: not reported 	Employees were nurses	Participatory intervention to improve psychosocial work environment	Control	Employee outcomes <ul style="list-style-type: none"> • Mental health symptoms • Work climate Employer outcomes Not reported
Van den Heuvel, 2015 [The Netherlands]	nRCT	Workplace <ul style="list-style-type: none"> • Sector: Public • Industry: Police • Organisation size: Large • Contract type: Not reported. • Seniority: Not reported • Income: Not reported 	Employees of Dutch police district	Job crafting	No intervention	Employee outcomes <ul style="list-style-type: none"> • Mental health symptoms Employer outcomes Not reported
Van Wingerden 2016 [The Netherlands]	nRCT	Workplace <ul style="list-style-type: none"> • Sector: Not reported • Industry: Healthcare • Size: Not reported • Contract type: Not reported. • Seniority: Not reported • Income: Not reported 	Not reported	JD-R intervention: Job demands-resources intervention	Control	Employee outcomes <ul style="list-style-type: none"> • Wellbeing-psychological capital • Job satisfaction Employer outcomes Not reported
Van Wingerden 2017 [The Netherlands]	nRCT	Workplace <ul style="list-style-type: none"> • Public sector • Education • Organisation size: Not specified. 	Not reported	Job crafting-Job crafting intervention based on job demands-resources (JD-R) theory	Control	Employee outcomes <ul style="list-style-type: none"> • Wellbeing-self-efficacy • Job satisfaction-work engagement

Study [country]	Study design	Setting	Population	Intervention	Comparator	Outcome(s)
		<ul style="list-style-type: none"> Contract type: Not specified. Seniority: Not specified Income: Not specified 				Employer outcomes Not reported
Zhang 2014 [China]	RCT	Workplace: <ul style="list-style-type: none"> Private organisation Industry: various, including manufacturing and services Organisation size: not reported. Contract type: not reported. Seniority: not reported Income: not reported 	Not Reported	Structured reading materials-based intervention to improve psychological capacity	Control	Employee outcomes <ul style="list-style-type: none"> Psychological capital Job satisfaction-work engagement Employer outcomes Not reported

Table 3: Summary of intervention characteristics

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
Custom-designed educational intervention to reduce job insecurity	Barrech 2018	During a period of organisational restructuring, the intervention was directed at supervisors. The goal of the intervention was to reduce job insecurity among participant team members, in order to maintain health outcomes.	Not reported	<ul style="list-style-type: none"> Three sessions were designed as seminars; each was followed by a peer-counselling session. Seminars were divided into two parts: (1) trainers provided theoretical input, (2) this was transferred into practice by means of group discussions and case studies. Training sessions related to the context of the organisation. 	Not reported	Training sessions (maximum of 10 supervisors) and seminars followed by peer counselling sessions	6 training sessions (2 to 4 hours) conducted over a period of 3 months.

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
				<ul style="list-style-type: none"> • During peer-counselling sessions, seminar topics were discussed in more depth, in order to increase participants' understanding and appreciation of social support by colleagues. 			
Leadership development programme	Biggs 2014	In accordance with the major tenets of the revised JD-R model, it was expected that exposure to a leadership-development intervention would provide upstream resources that influence both psychosocial work characteristics and psychological outcomes.	Not reported	<ul style="list-style-type: none"> • First, intervention participants, their immediate supervisors, and their direct subordinates completed a 360° review process. • Action-learning workshops provided training on theoretical leadership styles and behaviours, as well as practical resources to enhance leadership capabilities. • Participants conducted their own action-learning project during workshop sessions, allowing increased engagement and opportunities for shared learning experiences. • Individual coaching was provided to program participants 	<ul style="list-style-type: none"> •Workshops and coaching sessions were conducted by an external facilitator. •The 360° review process was conducted independently by the university researchers. 	Workshops and coaching sessions	5-day workshop Intensity and duration of coaching not reported

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
				throughout the duration of the program, providing personalized feedback based on the 360° review process and enabling participants to discuss difficulties or positive outcomes associated with leadership practices.			
Work redesign	Bond 2008	The intervention was based upon the principles of participative action research, which emphasises collaboration between the researchers and organisation members. Through this collaborative process, the expertise of both parties can be used to increase the chances of efficacious work redesign.	Questionnaire packs containing measures	<ul style="list-style-type: none"> • Senior managers of sites were informed whether they were in the control or intervention arm. • Twelve team members volunteered to participate on a steering committee. • The committee's aims were to identify instances of problematic aspects of work organization and recommend changes that might address these problems. • Committee members consulted with their team colleagues, between the meetings, to develop and finalise their recommendations for change. 	Researchers	Steering committee meetings	Two, 2-hour steering committee meetings

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
				<ul style="list-style-type: none"> Team members were provided opportunities to participate in the work planning process. 			
Participatory intervention	Bourbonnais 2006	The goal of the intervention was to decrease high psychosocial demands, low decision latitude, low social support, and effort-reward imbalance through employee participation. It was hypothesised that this would decrease mental health problems at work. The intervention was implemented according to the principles of German health circles, where the ultimate objective is to recognise and eliminate problems at their source	Not reported	<ul style="list-style-type: none"> An intervention team was made up of two researchers, one research assistant, three head nurses, three registered staff nurses, one beneficiary attendant, one reception clerk, one HR representative, one nursing representative, and two local union representatives. During meetings adverse psychosocial work factors and solutions were identified. Team members worked together, and sub-committees were created to collaborate on specific mandates. After each meeting, a report was produced. Team members were released from their duties after each meeting for a half-day equivalent to meet with co-workers, disseminate 	Researchers	Team meeting	Eight 3-hour meetings held over a four-month period

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
				information, and to gather comments and suggestions.			
Team reflexivity	Chen 2018	The goal was to utilise a reflexivity intervention to alter qualitative job overload, job control, and colleague support. Consequently, the intervention would improve emotional exhaustion, cynicism, and inefficiency.	Shift-end debriefing report form	<ul style="list-style-type: none"> Teams in the intervention condition underwent training in guided reflexivity for post shift debriefing. The shift-end debriefing (SED) occurred at the end of the team's shift. Teams reviewed all of the shift's major events, and subsequently could focus on other issues relating to team processes and cooperation, work hazards, product quality, and work and reporting processes. Training was structured around an SED protocol. Eight senior production workers (chosen by management) were trained by the research team to be SED trainers through a day-long training session. SED trainers were each assigned several teams and, with the assistance from 	<ul style="list-style-type: none"> Training for SED trainers was led by the researchers. Team SED training was provided by SED trainers with assistance from a researcher. 	<ul style="list-style-type: none"> Team debriefings Day long training was provided for trainers. Training was provided in shift-end debriefing with training sessions 	<ul style="list-style-type: none"> Daily shift-end debriefings (SED) lasted for 4 weeks (20 sessions in total). Teams initially took about 20–30 min to complete the protocol-based review. However, by the end of the initial 4-week period, teams were completing the protocol in as little as five minutes. A day-long training session to train the SED trainers. SED training for teams lasted 1 week.

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
				<p>researchers, began training their assigned teams.</p> <ul style="list-style-type: none"> • SEDs occurred daily, and the role of chair was rotated. Discussion was guided using a protocol. SED trainers provided guidance and recorded the progress of the team. • SED chairs submitted an SED Report Form. 			
Job crafting	Demerouti 2017	<p>Job crafting is a proactive behaviour enacted by employees to adapt to an uncertain and rapidly transforming work environment. Through job crafting, employees flexibly modify or create the conditions that help them tailor new tasks or roles to their situation. Job crafting helps employees to adjust their work to their preferences and find meaning in it, which is particularly important in times where organizations and individuals must adapt to new</p>	Small booklet for crafting plans	<ul style="list-style-type: none"> • The training day included some background theory on the JD-R model and job crafting. • Exercises were designed to build awareness of employees' working environment according to the JD-R principles. • A simple job analysis was conducted. • Personal stories were then discussed in sub-groups in order to help each other find ways of crafting. • At the end of the training, employees drew up a personal 	Trainers	<ul style="list-style-type: none"> • Training session • Group discussions 	3-hour training

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		realities. The elements of the intervention are based on social cognitive theory, which suggests that the interaction between the person, the behaviour, and the environment is critical for planning behaviour change interventions, underscoring that people are not passive recipients of an intervention.		<p>crafting plan for several weeks.</p> <ul style="list-style-type: none"> • Participants focused on weekly themes including increasing job resources, reducing job demands, and revisiting increasing job resources. • Each week participants were asked to make time to reflect on what went well and what they learned that week. • Participants received reminders of the coming week's theme and to complete the weekly questions. • A month after the postintervention measurement took place, participants met again for a reflection session. 			
Care pathway for improving teamwork	Denecker e 2013	Care pathways (CP) are organisational interventions that are widely used quality improvement strategies for (re)organising care processes. CPs are multifactorial interventions that improve	Feedback report with "as is" situation	<ul style="list-style-type: none"> • A formative evaluation of the teams' performance before implementation was conducted. • Each team received a set of evidence-based key interventions and a workshop was organised on the 	<ul style="list-style-type: none"> • Researchers • The study coordinator-trained to develop the care pathway 	Workshop	Not reported

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		organisational performance by strengthening relationships and coordination among team members.		<p>content of the key interventions.</p> <ul style="list-style-type: none"> Each study coordinator was trained to develop the care pathway based on the findings of the formative evaluation. 			
Stress risk assessment and participatory problem-solving process	Dollard 2014	The stress management intervention combined risk management principles, stress organisational development processes, and participatory action. The study had top management support and a capacity building process that allowed information sharing, the time needed for worker involvement, and resource allocation to address risks.	Organisational development survey	<ul style="list-style-type: none"> Risk assessments were undertaken using the organisational development survey. Group members attended workshops, where the goal was to develop stress reduction action plans. Workshops provided education about common stress factors. Each workgroup was provided with risk reports (derived from their surveys), along with grievance and sickness absence data. Risks were prioritized by group consensus, and action plans were formulated. Action plans were approved by the health and safety committee and were implemented over a 6-month period. 	External expert in organizational psychology	Workshops	<ul style="list-style-type: none"> Weekly 4-hour workshops took place over four weeks. Action plans were implemented over a 6-month period

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
				<ul style="list-style-type: none"> In some cases, external facilitators coached managers to implement agreed-upon action plans. 			
Job crafting	Dubbelt 2019	The job crafting intervention was designed in line with job crafting theory and experiential learning theory. The idea of job crafting is that employees can increase their person-job fit by adapting the job characteristics to their personal needs and ability.	Booklet with a short summary of the workshop and space to write down their individual job crafting goals	<ul style="list-style-type: none"> Interviews were performed to assess the specific needs of both academic and supportive staff. These findings were used to develop the intervention workshop. A workshop was provided where the trainers focused on participants' needs, past experiences, and present crafting behaviours. These workshops were held with a maximum of 14 participants per workshop. 	Trainers who were organizational psychologists and experts in the field of job characteristics and training job crafting behaviour	Workshop	4-hour workshop
Increased information technology support in dementia care	Engstrom 2005	Increased use of IT in dementia may be beneficial in supporting care staff in the workplace, and consequently improving psychosocial job satisfaction, psychosomatic health, quality of care, life satisfaction	<ul style="list-style-type: none"> IT solutions such as passage alarms, fall detectors, movement detectors and sensor-activated lights. Website Computers 	<ul style="list-style-type: none"> IT solutions were installed. Relatives were informed about the facility via a homepage on the internet, and email communication with staff was offered. All staff received an internet connection and email address, and staff were updated with 	Technician	<ul style="list-style-type: none"> Email communication Access to technology 	Implementation took place over 4 months

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		and sense of coherence. The aim of the technology was to allow people with dementia to walk more freely in the residential living facility, as well as to facilitate higher security for staff and residents.		<p>news on the facility by manager and registered nurse.</p> <ul style="list-style-type: none"> • Units received additional computers, including one placed in the living room/kitchen. • IT support was developed through collaboration with staff and a technician. 			
Organisational-level participatory approach for improving working environment	Framke 2016	The aim of organizational-level occupational health interventions is to reduce health-hazardous and enhance health-promoting working conditions. Participatory organisational interventions may have a positive impact on employees' health because they improve job control	None reported	<ul style="list-style-type: none"> • A steering group was formed, including the pedagogical leader, two employee representatives, the shop steward and the health and safety representative. • The steering group received implementation support, as well as intervention activities such as seminars and workshops to develop and implement workplace specific activities. A participatory approach was used along with change management, workplace culture and evaluation tools. • Workplace-specific activities were 	<ul style="list-style-type: none"> • Professional working environment consultant 	Seminars, workshops, and implementation support from a consultant	<ul style="list-style-type: none"> • Planning and coordination of intervention- 12 months • Development of specific activities- 5 months • Implementation- 16 months

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
				implemented by all employees.			
Job redesign through job crafting intervention	Gordon 2018	Expanding job redesign could create more opportunities for challenge, growth, and engagement of employees. Job crafting may be an avenue to integrate job design and job stress theories, by exploring the role of job stressors and job demands in combination with the motivating role of job resources. Job crafting specifically refers to individuals changing or crafting the boundaries or conditions of their job to increase their work meaning.	Booklets to record measurements	<ul style="list-style-type: none"> Participants attended 3-hour workshops, where they were informed and trained on job crafting strategies. Participants shared experimental learning narratives. The workshop concluded with the development of a personal crafting plan, which The PCP consists of specific crafting actions that the participants formulated and undertook for a period of three weeks after the workshop. 	Not reported	Workshops	3-hour workshops
Job crafting	Grant 2014	Test a set of developed proposition regarding the development of self-reflective job titles and its impact on psychological outcomes. The intervention is based on the premise that job titles do not	<ul style="list-style-type: none"> 10 minute presentation on use of self-reflective job titles. Brainstorming exercise. Facilitated discussion 	<ul style="list-style-type: none"> 10 minute presentation on use of self-reflective job titles. Brainstorming exercise to discuss potential job titles (no time outlined). Facilitated discussion on how and when these new titles could 	• Not reported	• Group based	• 10 minute presentation on use of self-reflective job titles with brainstorming about possible names and a facilitated discussion

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		reflect employee values and contributions, and some organizations have explored the psychological implications job titles	on how and when these new titles could be used and when.	be used and when (no time outlined).			when and how to the new title
Multicomponent workplace health intervention	Hansen 2016	The intervention focused on leadership competence and individual-based components. The aim was to improve health and psychosocial working conditions.	Newsletters	<ul style="list-style-type: none"> • Health and psychosocial working conditions were investigated through questionnaires and leader interviews. This information was used to develop a plan for the intervention. • Leaders completed physical fitness tests and participated in a leadership programme. • Additional educational meetings were held for co-workers and leaders, which involved discussion. • Individual leadership support was provided. • At 2 to 3 month intervals, several newsletters regarding the intervention were sent out to participating leaders and co-workers. • Follow-up measures were conducted and 	<ul style="list-style-type: none"> • Advisors from a private establishment offering occupational health services. • Swedish Winter Sports Research Centre 	<ul style="list-style-type: none"> • Physical meetings (group and individual) • Telephone meetings (individual) 	<ul style="list-style-type: none"> • Leadership in Modern Working Life' programme: three meetings over a period of one year that each lasted three hours • Additional meetings: three occasions (2–3 hours/occasion)

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
				presented to each enterprise, along with proposals for further improvements in health and the psychosocial working environment.			
Digital stress-prevention intervention	Havermans 2018	The main goal of the strategy was to promote the use of interventions aimed at prevention of work stress. The strategy aimed to raise awareness of work stress among stakeholders, and direct organisations to a proper psychosocial risk analysis. The intervention was conducted in a participative manner and identified organisational risk factors for work stress. In addition, the strategy helped to identify and select appropriate interventions and overcome implementation barriers	Digital platform	<ul style="list-style-type: none"> Digital platform provided information, screening and planning tools. It also contained a search engine with a broad selection of interventions relevant to work stress prevention. One member of each of the teams received training in the use of the digital platform. Shortly after the 6-month follow up measurement, a meeting was held where team members could share their experiences with the use of the digital platform. 	<ul style="list-style-type: none"> The platform was developed in cooperation with organizations from different sectors, such as healthcare, education, transport, and ICT 	Digital platform	Not reported
Job redesign	Holman 2016	To modify job characteristics as a	None reported	<ul style="list-style-type: none"> Two main phases: assessment to define problems and identify 	Researchers- no other details provided	Workshop and team meetings	2-day workshop and weekly team

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		means of enhancing employee outcomes		<p>solutions and implementation.</p> <ul style="list-style-type: none"> • The assessment phase started with a two-day workshop, in which employees worked in small groups to identify core job tasks and the obstacles that prevent effective working. A work plan was agreed. • The proposals were compiled into a report by the research team, which was then discussed at a joint meeting between employees, management and researchers. Implementation of job design was agreed. • In the implementation phase, teams implemented the proposed initiatives. The research team attended team meetings to discuss progress and raised questions with management if employees were having trouble. 			meetings for 4 months

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
Job crafting during times of organizational change	Hulshof 2020	The intervention is based on experiential learning theory focuses on increasing job crafting behaviour, in order to prevent a decrease in work engagement, empowerment, and the provision of high-quality services.	<ul style="list-style-type: none"> • Weekly newsletter used for recruitment followed up by detailed presentations during work meetings. • workbook and copy of presentation. • Interviews to understand employee needs. • nine workshops • debriefing session. • weekly reminders sent in the weeks between workshop day 1 and day 2. • Trainer checklists used to ensure all tasks were complete. 	<ul style="list-style-type: none"> • 2-day intervention - with a 6 week gap between days. • Day one was a 5.5 hour workshop focused on theory and practicing with job crafting; Participants set four SMART goals which they worked on in the weeks between the first and second day. • Participants received handouts of the presentation and a workbook in which they could take notes and formulate their job crafting goals. • Day two focused on evaluation of the job crafting experience where participants reflected upon their experiences and thought about implementing job crafting in their work routines beyond the intervention. • In the weeks between the first and second training day, a weekly reminder was sent to participants to help 	<ul style="list-style-type: none"> • Study author - experienced trainer. 	Group workshops delivered in an external training facility, with a maximum of 12 participants per group.	<p>2-day intervention - with a 6 week gap between days.</p> <ul style="list-style-type: none"> • Day one was a 5.5 hour workshop focused on theory and practicing with job crafting. • Day two was 2 hours focused on evaluation of the job crafting experience where participants reflected upon their experiences and implementation of job crafting in their work routines beyond the intervention.

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
			<ul style="list-style-type: none"> Self-report measures 	<ul style="list-style-type: none"> them work on their job crafting goals. A week before the second training day a reminder was sent to invite people to participate in the upcoming session. 			
Huddling programme designed to provide new nurses with access to peer group activities to support them with job stress and job-related problems	Im 2016	The programme applies the concept of “huddling” (a method of mutual support that is used by groups of penguins to survive against extreme cold) to groups of nurses via an empowerment programme. This method aims to allow new nurses to overcome adversity in the occupational environment by acquiring appropriate coping mechanisms to deal with job stress and job-related problems that are often caused by the lack of working experience. The goal of this was to decrease turnover.	A social networking service - the Naver BAND application programme that runs on a smartphone	<ul style="list-style-type: none"> There were three substructures of the huddling programme: full-day huddling programme, after-work huddling programme and social networking service huddling programme. The purpose of the full-day huddling programme was to promote empowerment and self-determination through various activities. This took place outside of the hospital in order to provide a pleasant diversion. An after-work huddling programme, where participants worked in chosen small groups, and shared their negative feelings associated with job stress and 	<ul style="list-style-type: none"> Researchers- no further information provided. Mentors- no further information provided 	Full day workshop, after work sessions and a social networking service platform	<ul style="list-style-type: none"> The programme was conducted over 9 weeks. 1 full-day huddling programme 5 after work sessions Social networking service was available until the end of the study period

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
				<p>interpersonal relationships with each other and with a mentor.</p> <ul style="list-style-type: none"> • A social networking service huddling programme was utilised. 			
A modified version of the Youth Mental Health First Aid course	Jorm 2010	The aim of mental health first aid training was to improve mental health knowledge, stigmatizing attitudes, confidence in helping students, helping behaviours towards their students, knowledge of school policies and procedures for dealing with student mental health problems, support given to colleagues with mental health problems, seeking information about mental health problems and their own mental health.	Youth Mental Health First Aid manual A set of mental health factsheets	Lesson plans were developed by two Mental Health First Aid trainers of instructors who had previously worked as teachers. Additional material was added by staff of the Department of Education and Children's Services	Two instructors, one from the Department of Education and Children's Services and the other from the Child and Adolescent Mental Health Service. These instructors received a one-week training program in how to conduct this modified Youth Mental Health First Aid course. They were trained by two experienced trainers, including Betty Kitchener who devised the Mental Health First Aid course	Not reported	2 days (one part each day) 7 hours each day
Mental health first aid (MHFA)	Kidger 2016	The aim of MHFA is to equip individuals to help people in	Not reported	<ul style="list-style-type: none"> • Staff nominated colleagues for MHFA training. 	Adult MHFA and youth MHFA courses were	Full day courses	Adult and youth MHFA courses were both

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
training and peer support		mental health crises and/or in the early stages of mental health problems. The peer support system is an intervention for staff to access as a 'first port of call'. It was hypothesised that this service, alongside the delivery of youth MHFA training, would not only increase the capacity to provide support to individual staff and students in need, but would create a more open school-wide culture with regard to discussion and awareness of mental health issues.		<ul style="list-style-type: none"> The standard MHFA course covers key facts, recognition and understanding of the most common mental disorders - depression, anxiety and psychosis – and provides attendees with a strategy for providing initial help to anyone appearing distressed or at risk of developing a mental health problem. Once the training had been completed, guidance was provided by the research team regarding the purpose of the peer support service, confidentiality, and gaining support for themselves, but peer support teams were encouraged to develop the detail of the service themselves according to what was most appropriate for their particular school, for example how it was advertised, and how staff accessed the help. A confidential peer support service was set up for colleagues. 	provided by a registered independent trainer		delivered over two full days.

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
				<ul style="list-style-type: none"> Youth MHFA training was also conducted in the study. 			
Team-based burnout intervention program combining a staff support group with a participatory action research approach	Le Blanc 2017	A team-based burnout intervention program for oncology care providers was developed. The researchers hypothesised that that care providers participating in the intervention program would experience lower levels of burnout	None reported	<ul style="list-style-type: none"> Team counsellors held intake interviews with the management of participating wards. The goal of these meetings was to increase the motivation of ward management for implementation of the organisational change processes. The training programme was delivered, which included an introduction to the programme and education on unwanted collective behaviour, communication and feedback, building a social support network and balancing job-related investments and outcomes. Participants formed problem-solving teams that collectively designed, implemented, evaluated, and reformulated plans of 	Counsellors-registered behaviour therapists	<ul style="list-style-type: none"> The programme was delivered in group sessions that took place at the end of the day. In between the training sessions, aspects of the programme were discussed at weekly work meetings. 	Six monthly sessions of 3 hr each

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
				<p>action to cope work stressors.</p> <ul style="list-style-type: none"> Potential problems in dealing with processes of change and ways to overcome them were discussed, and outcomes were developed 			
CREW training	Leiter 2011	The theoretical basis of the approach builds on the proposition that people benefit psychologically from belonging to social groups that confirm self-worth, security, and trust of others. Additionally, negative peer relationships are illegitimate demands that may increase burnout and prompt various withdrawal behaviours, including effort reduction, absences, and turnover. Because of the fundamental role that social relationships at work have for individuals, workplace incivility has practical, day-to-day consequences	Articles in organisational publications and public statements promoting civility	<ul style="list-style-type: none"> Concepts of civility and incivility were introduced to participants and management. To support this process, management explicitly encouraged civility as a core value of the organization. A survey was conducted to identify baselines of civility and organizational attitudes/behaviours for each work group. The research team provided all facilitators with a profile of their unit's survey responses. An initial gathering of facilitators and hospital leaders for CREW training and community building among participants. 	<ul style="list-style-type: none"> Research personnel had received training on group facilitation and effective communication strategies from experienced CREW leaders within Veterans Health. Unit facilitators were trained by research personnel in the CREW process. 	<ul style="list-style-type: none"> Gatherings of facilitators and hospital leaders Group meetings Phone calls 	<ul style="list-style-type: none"> Weekly group meeting occurred for a period of 6 months. Weekly phone calls

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		that can be quite extensive.		<ul style="list-style-type: none"> Group meetings involved 10-15 employees and were led by trained facilitators. Groups use structured exercises from the CREW Toolkit with the aim of improving interpersonal interactions at work. Throughout CREW implementation, training was available through weekly phone calls with facilitators. A midpoint gathering of facilitators and hospital leaders occurred at the 3-month point for refresher and advanced CREW training, and community building among participants. A final gathering of facilitators and hospital leaders occurred at the 6-month point for sustainability training and community building among participants. 			
Healthy Workplace study (HWP)	Linzer 2015	Study is based upon the conceptual model highlighted in and refined after the	Office and work life (OWL) 2 page measure of	<ul style="list-style-type: none"> Clinical and research staff to discuss baseline data and a list of interventions was 	Clinical and Research staff	Not reported. However, interventions were classed	Not reported, although it is stated that many clinics performed

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		MEMO (Minimising error, Maximising outcome) project, with work conditions affecting clinician and patient outcomes	work life and work condition	<p>generated and used to address adverse clinician work conditions (based on the OWL document).</p> <ul style="list-style-type: none"> Interventions chosen were customised at the individual clinic level and comprised a broad list of ways to address work conditions. Clinical teams worked off proven interventions (drawn from the literature); intervention(s) chosen were then customized at the individual clinic level. 		into the following categories: 1.Communications 2.Workflow 3.Targetted quality improvement 4.Other	more than 1 type of intervention
2-week ward rotations for physicians	Lucas 2012	Both trainees and educational leaders have decried short rotations as disruptive because they truncate student teacher relationships. However, shorter rotations may benefit the psychological health of attending physicians. If shorter rotations can lessen attending physician burnout, they may improve physicians' relationships with patients and the	Not reported	Physicians were randomised to 2-week ward rotations	Not reported	Not Reported	2 weeks

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		quality of care that patients receive					
Wellbeing program (Flowlab)	Ludwigs 2020	Flowlab aim to improve participants' sleep quality, mindfulness and ability to focus through the introduction of a series of synergistic habits, which are expected to lead to increased chances of experiencing flow states and ultimately higher well-being. Flowlab is a six-week program delivered through a combination of workshops, digital content and daily 'nudges' which facilitate habit formation.	<ul style="list-style-type: none"> • Slides for the sampling workshop explaining the program and the evaluation study. • Participation cards with randomized participation codes selecting participants to either the control or the experimental group. • An app to survey participants • questionnaires. • Sets to collect participants hair samples. • Rewards. • The trivago flowlab program. 	<p>Structure of the program and the method of the evaluation study was explained by an external research institute in 30-min workshops with each up to ten employees in each workshop.</p> <p>The Trivago flowlab program consisted of three different modules aiming to train six habits. The first module, 'sleep', one-hour workshop, ran by a trivago employee (Habits: block blue light 60 min before going to bed; go to bed every day at around the same time +/- 20mins); second module, 'mindfulness' one-hour workshop (Habits: meditate one time a day; try to have one mindful moment a day being present in the moment and describing the surrounding in detail); third module 'focus', one-hour workshop (Habits: reduce notifications for example from Slack or Outlook; plan one 'deep work session' per day</p>	<ul style="list-style-type: none"> • Trivago employee who had become an expert on a particular topic module 	<ul style="list-style-type: none"> • Group workshops with additional support via recommended app and facilitated peer support 	<ul style="list-style-type: none"> • 3 x 1 hour group workshops with additional support via recommended app and facilitated peer support

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
			<ul style="list-style-type: none"> Feedback workshops. 	focusing on a specific topic for at least 30 min).			
Work wellness programme including physical, lifestyle and social/leadership skills training, as well as a participatory approach to support wellness at work including work organisation and environment	Maes 1998	The combined interventions of the Brabantia project were directed at both lifestyle and the content and organization of work. The goal of the project was to improve health behaviour, reduce health risks, reduce general stress reactions, improve quality of work, and reduce absenteeism. The demand-control-social support model was used to formulate these conditions.	On-site exercise facilities; advertising of the program with an information corner in the cafeteria, along with posters, videos, internal radio messages, and newsletter articles; and providing healthy food (and information about nutrition) in the cafeteria. Incentives to promote participation in the program were used (e.g., T-shirts, sweatshirts, sport bags, and the chance to win a weekend stay at a	<p>Individual level interventions:</p> <ul style="list-style-type: none"> Employees had the opportunity to participate in lunchtime sessions, which were comprised of physical exercise and health education. 40 hours of training were delivered on social and leadership skills. <p>Organisational level interventions:</p> <ul style="list-style-type: none"> Measures were introduced to support the individual-level interventions. Screening for wellness risks at work by means of the structured Wellness at Work interviews with each employee. This information was used to construct wellness risk profiles. These profiles were examined by a wellness committee. This information was used to help the committee develop proposals for 	<ul style="list-style-type: none"> Lifestyle committee- a group of workers elected by employees. Wellness committee-management team and members of the project team 	<ul style="list-style-type: none"> Individual level interventions (physical exercise and health education)- lunchtime sessions Individual level interventions (training in social skills and leadership-mode of delivery not reported) 	<ul style="list-style-type: none"> Individual level intervention- half hour sessions three times per week. Individual level interventions (training in social skills and leadership- 40 hours of training) Organisational-level interventions were implemented over the second and third years of the programme

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
			health and leisure resort).	modifying specific functions and/or aspects of the work organisation and environment. After consultation with the participating workers, the wellness committee guided implementation and evaluation of the proposed changes.			
Microbreak	Mainsbridge 2020	The objective of this study was to measure the effect of movement microbreaks during formal work time on mood states	<ul style="list-style-type: none"> • Prompting sequence indicating that 60 min of continual computer work had elapsed, and the microbreak screen was going to initiate. • 65 different non-exercise physical activity (NEPA) choices with digital video coaching to facilitate a movement microbreak of the participants 	<ul style="list-style-type: none"> • A prompting sequence indicating that 60min of continual computer work had elapsed, and the microbreak screen was going to initiate. • At this point, participants could immediately engage the microbreak selection sequence or postpone the sequence once for 15min. • At the end of this 15-min interval, the microbreak selection sequence covers the employee's entire computer screen preventing continuance of computer work. • This screen displays until participants complete a movement microbreak of their 	The research team responsible for the study	<ul style="list-style-type: none"> • Face-to-face pre-intervention phase. • Intervention was computer based 	<p>The intervention involved.</p> <ul style="list-style-type: none"> • a prompting sequence indicating that 60 min of continual computer work had elapsed, and the microbreak screen was going to initiate. • participants could immediately engage the microbreak selection sequence or postpone the sequence once for 15min. • At the end of this 15-min

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
			choice (e.g., chair squats). <ul style="list-style-type: none"> self-report questionnaires 	choice and record their progress.			interval, the microbreak selection sequence screens cover the employee's entire computer screen preventing continuance of computer work. <ul style="list-style-type: none"> This screen displays until participants complete a movement microbreak of their choice and record their progress.
Participative work conference based on democratic dialogue	Mattila 2006	The work conference method, also called "search conference", is an intensive participative method for involving employees in organisational planning and decision making. As participation is a central means of increasing employees' control over their jobs, the	Not reported	<ul style="list-style-type: none"> The intervention consisted of two sessions, with 30 to 60 participants attending each conference. Participants worked in a large group and in small groups of five or six people. Participants from the same work unit worked together whenever possible. The phases of the conferencing were: (1) 	Two experienced external consultants	Conferences	<ul style="list-style-type: none"> The first session lasted two workdays. The second session lasted for half a day.

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		work conference method has been applied in improving the psychosocial work environment.		<p>creating visions of well-being at the workplace; (2) recognizing the obstacles to fulfilling these visions; (3) setting goals for developing the psychosocial work environment and well-being; and (4) making a practical development plan for the work unit.</p> <ul style="list-style-type: none"> External consultants, guided the process, but did not act as experts in developing the psychosocial work environment or wellbeing. 			
The Collaborative Care Model (CCM) Program, and development of a self-care plan	McElligott 2010	The conceptual framework for the study was the Health Promotion Model, which integrated perspectives from nursing and behavioural sciences into factors that may influence health behaviours. Health promotion, the key concept in the Health Promotion Model is described as "behaviour motivated by the desire to	<ul style="list-style-type: none"> A written statement describing selected goals to increase health and the activities that are needed to reach the goals 	<ul style="list-style-type: none"> The Collaborative Care Model (CCM) programme involved an 8-hour program created to promote a culture of caring, focusing on relationships and patient-centred care, fostering and sustaining a healing environment and a culture of safety. The program components were adapted from the Holistic Nursing 	Instructors	Classes	Eight hour programme

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		increase well-being and actualise human health potential". The Health Promotion Model and the core values of holistic nursing were key concepts in the development and evaluation of the effect of the CCM		<p>Handbook and best practice models.</p> <ul style="list-style-type: none"> The programme included interactive lectures. Content also included completion of the HPLP II tool, option for study participation in experiences with imagery, appreciative inquiry, and a sharing circle. Participants completed a self-care plan, which was a written statement describing selected goals to increase health and the activities that are needed to reach the goals. 			
STAR (Support. Transform. Achieve. Results- a workplace intervention designed to increase family-supportive supervision and employee control over work time	Olson 2015	The intervention was a social change process designed to increase employee control over work time and family supportive supervisory behaviours. The change process was an integration of 2 interventions that, in prior evaluations, had independently addressed family supportive supervisor	<ul style="list-style-type: none"> Daily web polls Computer-based training- cTRAIN;NW eta, Lake Oswego,OR Enterprise application for iPhone/iPod touch- Habitrack; Oregon 	<ul style="list-style-type: none"> A facilitator led employees and managers through eight hours of participatory sessions to transition them from a time-based to a result-based work culture. During this process, leaders and employees were asked to make structural changes and exercise greater freedom to work at 	Facilitator- not reported	<ul style="list-style-type: none"> Group sessions Training Meetings Individual meetings with facilitator Computer and iPhone/iPod touch-based 	<ul style="list-style-type: none"> Intervention took place over 3 months. 8 hours of participatory sessions Managers/supervisors undertook 4 hours of training and meetings. 1-hour computer-based training

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		behaviours and employee control, respectively	Health & Science University, Portland, OR	<p>whatever time and whatever place they wanted (if they produced their expected work results).</p> <ul style="list-style-type: none"> • Work groups participated in daily Web polls to monitor collective actions. • Managers/supervisors also completed four hours of training in family supportive supervisor behaviours and meetings to discuss the change process. • Each supervisor completed 2 rounds of self-monitoring 			
Job crafting intervention program	Sakuraya, 2020	The study sought to investigate the effectiveness of a job crafting intervention program on work engagement and job crafting among Japanese employees	<ul style="list-style-type: none"> • Two 120-minute job crafting sessions. • Discussion with occupational health professionals. • Booklet job crafting cases. • Post session e-mail or letter follow- 	<ul style="list-style-type: none"> • Two 120-minute job crafting sessions conducted by first author at monthly intervals; Based on participants' opinions collected via pretest-posttest study and discussion with occupational health professionals two improvements to job were made; job crafting cases were collected in a booklet and distributed to the 	<ul style="list-style-type: none"> • Lead author - Department of Public Health, School of Medicine 	<ul style="list-style-type: none"> • Face-to-face and online; unclear if this is group based or not. 	<ul style="list-style-type: none"> • Two 120-minute job crafting sessions conducted at monthly intervals with email/letter follow-up of session.

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
			up aimed to help participant session recall	participants during the first session; e-mail or letter follow-up after the first and second session to help participants session recall. After each session an e-mail or letter reflecting session and work to review their job crafting plan was sent. The participants who could not attend were given the material from the session and asked to create their job crafting plan and conduct it.			
Heuristic Method (HM)	Schelvis 2017	The study evaluates the effectiveness of an organizational level, participatory intervention on need for recovery and vitality in educational workers. It was hypothesized that participating in the intervention needs assessment would result directly in participant's increased occupational self-efficacy; Implementation of intervention activities	<ul style="list-style-type: none"> • Heuristic Method facilitator • ten one-hour interviews • digital open-ended questionnaire for all workers • Self-report measures 	<ul style="list-style-type: none"> • Participatory action approach applied at the organizational level. • Two 12-month phases. 1) a phase of needs assessment (where staff and teachers developed actions to 'work happily and healthily', under supervision of an HM facilitator; A participatory work group was formed; HM facilitator then led three iterative steps to complete the needs assessment by: (i) approximately ten one- 	<ul style="list-style-type: none"> • Heuristic Method facilitator developed the intervention with management staff in the intervention school staff who then implemented the intervention with optional assistance by Heuristic Method facilitator or temporary consultant. 	<ul style="list-style-type: none"> • Face to face group work in the needs assessment phase • Management teams implemented the intervention actions in an implementation phase with optional assistance by Heuristic Method facilitator or 	<p>Two 12-month phases:</p> <ul style="list-style-type: none"> • a phase of needs assessment (HM facilitator then led three iterative steps to complete the needs assessment by: (a) approximately ten one-hour interviews with typical optimistic and typical critical teachers and

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		would increase organizational efficacy and job resources and reduce job demands, these are the expected intermediate effects; And if the balance between job demands and job resources is restored, distal effects are supposedly to be found on work-related stress constructs and well-being constructs.		hour interviews with typical optimistic and typical critical teachers and staff; (ii) a digital open-ended questionnaire for all workers; and (iii) group sessions with all teams, chaired by members of the participatory group). 2) an implementation phase (where intervention activities were implemented by the management teams at both schools).		temporary consultant.	staff; (b) a digital open-ended questionnaire for all workers; and (c) group sessions with all teams, chaired by members of the participatory group) <ul style="list-style-type: none"> • 2) an implementation phase.
Mental Health First Aid Training (MHFA)	Svensson 2014	MHFA was developed to improving mental health literacy and giving skills to provide initial help to people in mental health crisis situations and on-going mental health problems. This study investigates if MHFA training in a Swedish context provides a sustained improvement in knowledge about mental disorders, a	<ul style="list-style-type: none"> • An Australian team taught three Swedish main instructors. • The complete MHFA program was translated and modified to suit the Swedish context. 	<ul style="list-style-type: none"> • All the participants received a MHFA manual in Swedish and attended the twelve hour MHFA course, which was equally spread over two days and taught in five steps: 1: Assess risk of suicide and harm, 2. Listen non-judgmentally, 3. Give reassurance and information, 4. Encourage persons to get appropriate professional help, and 	<ul style="list-style-type: none"> • National Centre for Suicide Research and Prevention of Mental Ill-Health (NASP) at the Karolinska Institute in Stockholm; Ministry of Health and Social Affairs in Sweden. • An Australian team taught three Swedish main instructors who went on to 	<ul style="list-style-type: none"> • Group face-to-face. • All participants received a MHFA manual in Swedish and attended the twelve hour course, which was equally spread over two days 	<ul style="list-style-type: none"> • 12-hour course where a first aid approach is taught in five steps. The steps are then applied to depression, anxiety disorders, psychosis and substance use disorder

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		better ability to be helpful in contacts with people who are ill and if it changes attitudes in a positive direction.	<ul style="list-style-type: none"> MHFA manual in Swedish. pre-test assessment. Self-report questionnaires. 	5. Encourage self-help strategies.	teach 18 instructors who implemented the training program.		
Wellness programme- Training focused on nutrition, physical activity, stress reduction and related topics	Song 2019	Workplace wellness programs tend to focus on modifiable risk factors of disease, such as nutrition, physical activity, and smoking cessation. These programmes have become increasingly popular as employers have aimed to lower healthcare costs and improve employee health and productivity.	Modules included modest incentives for participation, most commonly a \$25 BJ's gift card for completing a particular module. Total potential incentives across the program averaged about \$250	The wellness program was delivered as 8 modules. Each module focused on key elements of health and wellness, including nutrition, physical activity, stress reduction, and prevention	<ul style="list-style-type: none"> The intervention was designed and implemented by an established wellness vendor – Wellness Workdays. Programme content was delivered by registered dietitians 	Individual and team-based activities and challenges	The wellness program comprised 8 modules implemented over 18 months, with each module lasting 4 to 8 weeks
Participatory intervention to improve psychosocial work environment	Uchiyama 2013	Psychosocial work environment has been regarded as one of the risk factors for workers' mental health. Workplace intervention at the organisational level, including the	Task sheets were filled out to help identify problems and clarify solutions	<ul style="list-style-type: none"> All members participated in a series of activities designed to improve the work environment. Subchief nurses were appointed as key persons who underwent interviews and filled out task 	Researchers- no further information was reported	<ul style="list-style-type: none"> Group meetings Individual interviews 	<ul style="list-style-type: none"> The intervention was implemented during a 6-month period, with an intensive 3 month intervention

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		improvement of psychosocial work environment, is identified to be preferable compared with individual-level intervention because it seems a more preventive, sustaining, and fundamental approach.		<p>sheets after every group meeting.</p> <ul style="list-style-type: none"> • Two months after the intensive intervention period, a booster session was provided to check how activities proceeded in each unit. • Employees identified existing problems and proposed action plans. • Nurses started to improve their psychosocial work environment based on the action plans. • Researchers visited the workplaces and observed how their activities proceeded. 			<p>period followed by a 3 month implementation period.</p> <ul style="list-style-type: none"> • Group meetings lasted 30 minutes. • 30-minute individual interviews were held 4 times with key persons
Job crafting intervention	van den Heuvel, 2015	The study develops and examines the effects of an intervention aimed at implementing and encouraging job crafting behaviour at work. Job crafting can result in an increase in positive outcomes such as work engagement and performance.	Interviews to design the intervention; Self-report measures; weekly diaries during the 4 weeks of job crafting. Training day (background theory on the JD-R model and job crafting); Participant	<ul style="list-style-type: none"> • Interviews with management and potential participants to design the intervention. • training day: participants mapped their tasks, demands, and resources on a poster and reflected on it to identify situations at work they would like to craft. • Personal crafting stories were shared and analysed in the group. 	Not specified	Group workshops of up to 20 participants	<ul style="list-style-type: none"> • Intervention was conducted in groups of up to 20 participants. • one training day. • 4 weeks of working independently on job crafting goals at work, and a half-day reflection session.

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
			completed poster.	<ul style="list-style-type: none"> • A plan with specific job crafting goals, such as how to seek resources, how to reduce demands, and how to seek challenges, was drawn up by each participant. • The personal crafting plan continued for 4 weeks. Afterwards, experiences were shared during a reflection session. 			
Job demands-resources intervention	Van Wingerden 2016	Research with the job demands-resources (JD-R) theory has shown that having an adequate amount of resources can lead to various positive work outcomes like work engagement and performance. Work engagement in healthcare is positively related to employee well-being, client satisfaction, and quality of care. The JD-R intervention contains exercises aimed at increasing personal resources, job resources and	None reported	<ul style="list-style-type: none"> • To increase personal resources, exercises were used to increase participants' levels of hope, optimism, self-efficacy, and resilience (PsyCap). • To stimulate participants' job crafting behaviour, exercises and goal setting were used. • Participants made a job crafting plan where they described their job crafting goals and actions to be taken. • In the four weeks between the second and third training session, the participants tried to put 	Trainers	Training sessions	Three training sessions over a period of five weeks: the first and second session took place on one day, while the third half-day session took place four weeks later

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		challenging job demands		<p>their job crafting plan into action.</p> <ul style="list-style-type: none"> In the final training session, the trainers and participants evaluated the success of job crafting. 			
Job crafting intervention based on job demands-resources (JD-R) theory	Van Wingerden 2017	The job crafting intervention was based on the Michigan Job Crafting Exercise (JCE) and conducted using the principles proposed by JD-R theory. Specifically, the job crafting intervention consists of exercises and goal setting aimed at increasing social job resources, increasing challenging job demands, increasing structural job resources, and decreasing hindering job demands	Workbooks	<ul style="list-style-type: none"> The intervention consisted of two training sessions over a period of 6 weeks. In the first session, participants performed job and person analyses. Participants then formulated a personal job crafting action plan, which was discussed. The participants then carried out their action plan in the next 4 weeks. The second session assessed the extent to which the self-initiated job changes had been successful 	Not Reported	Training sessions	Two sessions (8 hours and 4 hours) took place, with 4 weeks in between
Structured reading materials-based psychological capital intervention program	Zhang 2014	The PsyCap intervention process consisted of asking participants to read the structured material. It was expected that, the reading material	Structured reading material	<ul style="list-style-type: none"> Participants were assembled and sat individually in a large conference room. Participants were provided with the structured reading material, and informed 	Not reported	Participants individually completed structured reading materials and a test.	30 minutes

Brief name	Studies	Rational, theory or goal	Materials used	Procedures used	Provider	Delivery method	Intensity/ Duration
		might activate the participants' motivation to develop their PsyCap after they learned of the contribution of PsyCap to personal mental health, job performance, and occupational success, and were provided with feasible pathways to develop PsyCap in life.		<p>that they had 30 minutes to read the material independently and silently.</p> <ul style="list-style-type: none"> After completing the reading, five questions were asked to check if each participant had carefully read the material and comprehended its meaning 			

1.1.6 Summary of studies included in the qualitative evidence.

Table 4: Summary of study characteristics

Study	Setting	Informants	Intervention	Method	Themes in study
Bachkirova, 2015	London Deanery - Coaching and mentoring services for doctors and dentists	Doctors and dentists who had received the coaching intervention	Coaching and mentoring	<p>One opened-end question to allow qualitative response within a questionnaire.</p> <p>Grounded Theory approach</p>	<p>Confidence improvement and increased self-awareness.</p> <p>Specific areas of working life where there was a significant difference as the result of coaching such as career development and work-life balance.</p> <p>Acquiring a range of skills that could make participants more capable of addressing potential issues, such as the skills of problem-solving, reflection and seeing things in perspective.</p> <p>Being listened to/sharing</p>

Study	Setting	Informants	Intervention	Method	Themes in study
Fisher, 2020	Secondary schools	WISE trainers and focus groups with training course attendees	Mental Health First Aid (MHFA) training package	Semi-structured interviews Thematic analysis	Needs of the group. Location of the Mental Health First Aid training delivery Scheduling MHFA training within the school timetable Time Flexibility Environment/location/space Support and leadership
Hall 2018	GP surgeries	General practitioners	Organisational interventions to prevent burnout	Focus groups. Thematic analysis according to Braun and Clarke.	Taking breaks Support systems Importance of psychological strategies
Karanika-Murray, 2018	Public sector. Two organizations: one hospital and one local government	Intervention leads, intervention champions, Implementation team of external consultants	Organisational intervention	Semi structured interviews Thematic analysis	Barriers to leader engagement in terms of their reactions to the intervention <ul style="list-style-type: none"> • Perceptual and emotional barriers • Poor quality of communication • Underlying organizational factors Dealing with barriers to leader engagement: <ul style="list-style-type: none"> • Formalized and targeted communication • Perspective-taking Factors facilitating leader engagement. <ul style="list-style-type: none"> • Regular and quality communication

Study	Setting	Informants	Intervention	Method	Themes in study
					<ul style="list-style-type: none"> Showing consideration for the leader's role and needs Demonstrating impact on the business <p>Factors accelerating leader engagement (building leader engagement takes time)</p> <ul style="list-style-type: none"> Cascading targeted messages Allowing time and tuning the pace of engagement Projected benefits of change (for LM): <p>Factors linked to differences in engagement between leadership levels.</p> <ul style="list-style-type: none"> The leader's position in the hierarchy The leader's authority The scope of change
Kidger 2016 (Qualitative component of mixed methods study)	Secondary schools	Teaching and non-teaching staff including some who had been trained as Mental Health First Aiders (MHFAs) and some who had received support from MHFAs.	Mental Health First Aid	<p>Focus groups with peer supporters and randomly selected teaching and non-teaching staff.</p> <p>Interviews with senior leaders</p> <p>Thematic analysis</p>	<p>Motivators and facilitators to becoming a Mental Health First Aider</p> <p>Barriers to becoming a Mental Health First Aider</p> <p>Acceptability of Mental Health First Aiders</p> <p>Accessibility of Mental Health First Aiders</p> <p>Impact of Mental Health First Aiders</p>
Narayanasamy 2018	2 private sector organisations (construction/ rail company and finance /accountancy)	<p>Employees who had been trained as Mental Health First Aiders, (MHFAs)</p> <p>Mental health first aid co-ordinators</p>	Mental Health First Aid	<p>Interviews carried out either by telephone or face to face.</p> <p>Thematic analysis</p>	<p>Motivators and facilitators to becoming a Mental Health First Aider</p> <p>Barriers to becoming a Mental Health First Aider</p>

Study	Setting	Informants	Intervention	Method	Themes in study
	2 public sector organisations (higher education, and media/broadcasting) 2 third sector organisations (research and an organisation focusing on mental health).	Employees, including some who had received support from MHFAs.			Acceptability of Mental Health First Aiders Accessibility of Mental Health First Aiders Impact of Mental Health First Aiders Monitoring and measuring success of Mental Health First Aiders

See Appendix F.1.2 for full GRADE-CERQual tables

1.1.7 Economic evidence

1.1.7.1 Included studies.

A guideline wide search of published cost-effectiveness evidence was carried out for review questions 1, 2, 3, 4 and 5.

3,432 records were assessed against the eligibility criteria.

3,103 records were excluded based on information in the title and. Both reviewers assessed all the records. The level of agreement between the two reviewers was 100%.

The full-text papers of 80 documents were retrieved and assessed. 16 studies were assessed as meeting the eligibility criteria across the review questions. The level of agreement between the two reviewers was 100%. There were no eligible studies for RQ 1.

1.1.7.2 Excluded studies

No studies were identified.

1.1.8 Summary of included economic evidence.

No studies were identified.

1.1.9 Economic model

A simple cost-consequence model was developed which covers more than 1 evidence review in the guideline so the full write up is contained in a separate report (Evidence Review G).

The model was used to establish the impact of mental wellbeing interventions at work over a one-year time horizon from both the employer perspective and a wider perspective including employee outcomes. The model synthesized evidence from a range of sources including the effectiveness and cost-effectiveness reviews, and other relevant studies.

The number of employees receiving the intervention was multiplied by each category in the model: the cost of the intervention, the cost of absenteeism, the cost of presenteeism, and the cost of staff turnover. These figures were then summed in order to produce the net cost impact of the intervention.

A hypothetical case study was modelled using a combination of published data and assumptions. In addition, several hypothetical scenarios were considered which were based on entirely assumption-based inputs. It is intended that the model will be used as an interactive cost-calculator for employers who are considering implementing a mental health intervention at work, or other interested parties. The model allows users to input values and generate bespoke results, specific to their workplace.

The hypothetical case study analysis (based on a combination of published evidence and assumptions) showed that mental health interventions at work can be cost saving for an employer. However, the results depend on a myriad of factors such as the size of the organisation and the cost of absenteeism.

From an employer's perspective, an intervention is more likely to result in cost savings when: (i) the baseline level of absenteeism is high, (ii) baseline presenteeism is relatively low, (iii)

baseline staff turnover is high, (iv) the intervention is low cost, and (iv) the intervention is demonstrated to have a positive influence on absenteeism, presenteeism or turnover. Every single employer will have a unique set of characteristics and, therefore, it is not possible to make a generalised statement about which interventions are likely to be cost-effective.

1.1.10 Summary of the quality of the effectiveness evidence, certainty of the qualitative evidence and economic evidence statements

Quantitative evidence

Job crafting vs usual practice

See Forest plots Job crafting vs usual practice (E 1.1.1 to 1.1.4) and GRADE profile [F.1.1.1](#)

Job crafting compared to usual practice for mental wellbeing at work						
Patient or population: patients with or at risk of poor mental wellbeing in the workplace Settings: workplace Intervention: Job crafting Comparison: usual practice						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				
	Usual practice	Job crafting				
Mental wellbeing - RCT		The mean mental wellbeing in the intervention groups was 0.01 standard deviations lower (0.53 lower to 0.5 higher)		62 (1 study)	⊕⊕⊕⊖ low ^{1,2,3,4}	No difference
Mental wellbeing - Non-RCT		The mean mental wellbeing in the intervention groups was 0.19 standard deviations lower (0.42 lower to 0.03 higher)		329 (4 studies)	⊕⊖⊖⊖ very low ^{3,4,5,6}	No difference
Job stress		The mean job stress in the intervention groups was 0.65 standard deviations lower (1.38 lower to 0.08 higher)		108 (2 studies)	⊕⊖⊖⊖ very low ^{3,4,5,7}	No difference
Job satisfaction - RCT		The mean job satisfaction in the intervention groups was 0.27 standard deviations lower (0.84 lower to 0.3 higher)		401 (3 studies)	⊕⊖⊖⊖ very low ^{3,4,5,8}	No difference
Job satisfaction - non-RCT		The mean job satisfaction in the intervention groups was 0.03 standard deviations higher (0.19 lower to 0.24 higher)		343 (4 studies)	⊕⊖⊖⊖ very low ^{3,4,5,6}	No difference
Productivity		The mean productivity in the intervention groups was 0.32 standard deviations lower (0.84 lower to 0.2 higher)		62 (1 study)	⊕⊕⊕⊖ low ^{1,2,3,4}	No difference
Mental health symptoms		The mean mental health symptoms in the intervention groups were 0.06 standard deviations lower (0.48 lower to 0.36 higher)		86 (1 study)	⊕⊖⊖⊖ very low ^{1,2,3,4}	No difference
*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI). CI: Confidence interval;						
GRADE Working Group grades of evidence High quality: Further research is very unlikely to change our confidence in the estimate of effect. Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. Very low quality: We are very uncertain about the estimate.						

¹ Serious concerns due to self-reported outcomes
² Single study analysis
³ No concerns as study population, intervention, comparator and outcome match the review protocol
⁴ Serious concerns as 95% CIs cross the line of no effect
⁵ Very serious concerns due to missing outcome data and self-reported outcomes
⁶ No concerns as I-squared is less than 50%
⁷ Serious concerns as I-squared is between 50% and 75%
⁸ Very serious concerns as I-squared is greater than 75%

Participatory intervention vs usual practice

See forest plots Participatory intervention vs usual practice (E1.2.1 to 1.2.7) and GRADE profile [F.1.1.2](#)

Participatory intervention mental wellbeing at work						
Patient or population: patients with or at risk of poor mental wellbeing in the workplace						
Settings: workplace						
Intervention: Participatory intervention						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				
	Control	Participatory intervention				
Mental wellbeing		The mean mental wellbeing in the intervention groups was 0.15 standard deviations lower (0.76 lower to 0.47 higher)		807 (2 studies)	⊕⊕⊕⊕ very low ^{1,2,3,4}	No difference
Job stress - RCT		The mean job stress in the intervention groups was 0.15 standard deviations lower (0.43 lower to 0.13 higher)		1257 (4 study)	⊕⊕⊕⊕ very low ^{2,3,4,5}	No difference
Job stress - non-RCT		The mean job stress in the intervention groups was 0.15 standard deviations lower (0.34 lower to 0.05 higher)		1702 (3 studies)	⊕⊕⊕⊕ very low ^{1,3,4,6}	No difference
Job stress - dichotomous	243 per 1000	308 per 1000 (177 to 534)	RR 1.27 (0.73 to 2.2)	135 (1 study)	⊕⊕⊕⊕ low ^{1,3,4,7}	No difference
Mental health symptoms - RCT		The mean mental health symptoms in the intervention groups were 0.05 standard deviations higher (0.15 lower to 0.25 higher)		392 (2 studies)	⊕⊕⊕⊕ low ^{1,3,4,8}	No difference
Mental health symptoms - non-RCT		The mean mental health symptoms in the intervention groups were 0.14 standard deviations lower (0.3 lower to 0.02 higher)		610 (1 study)	⊕⊕⊕⊕ very low ^{1,3,4,7}	No difference
Work climate - RCT		The mean work climate in the intervention groups was 0.18 standard deviations lower (0.4 lower to 0.05 higher)		314 (1 study)	⊕⊕⊕⊕ low ^{1,3,4,7}	No difference
Work climate - non-RCT		The mean work climate in the intervention groups was 0.02 standard deviations lower (0.16 lower to 0.12 higher)		1090 (2 studies)	⊕⊕⊕⊕ very low ^{3,4,5,8}	No difference
Absenteeism - RCT		The mean absenteeism in the intervention groups was 0.95 standard deviations lower (1.18 to 0.71 lower)		312 (1 study)	⊕⊕⊕⊕ high ^{3,7,9,10}	Benefit
Absenteeism - Non-RCT		The mean absenteeism in the intervention groups was		672 (1 study)	⊕⊕⊕⊕ very low ^{3,4,7,9}	No difference

		0.19 standard deviations higher (0.01 lower to 0.39 higher)				
Job satisfaction		The mean job satisfaction in the intervention groups was 0.02 standard deviations lower (0.34 lower to 0.31 higher)		1139 (3 studies)	⊕⊕⊕⊕ very low ^{1,2,3,10}	No difference
Job satisfaction	457 per 1000	402 per 1000 (270 to 594)	RR 0.88 (0.59 to 1.3)	135 (1 study)	⊕⊕⊕⊕ low ^{3,5,7,10}	No difference
Productivity		The mean productivity in the intervention groups was 0.05 standard deviations higher (0.24 lower to 0.33 higher)		190 (1 study)	⊕⊕⊕⊕ very low ^{1,3,7,10}	No difference
<p>*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).</p> <p>CI: Confidence interval; RR: Risk ratio;</p> <p>GRADE Working Group grades of evidence High quality: Further research is very unlikely to change our confidence in the estimate of effect. Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. Very low quality: We are very uncertain about the estimate.</p> <p>¹ Some concerns due to self-reported outcomes ² Very serious concerns as I-squared is greater than 75% ³ No concerns as study population, intervention, comparator and outcome match the review protocol ⁴ Some concerns as 95% CIs cross the line of no effect ⁵ Very serious concerns due to missing outcome data and self-reported outcomes ⁶ Serious concerns as I-squared is between 50% and 75% ⁷ Single study analysis ⁸ No concerns as I-squared is less than 50% ⁹ No concerns over risk of bias ¹⁰ No concerns over imprecision as 95% CIs do not cross the line of no effect</p>						

Mental health first aid (MHFA) vs usual practice

See forest plots [Mental health first aid \(MHFA\)](#) (F.1.3.1 to 1.3.3) and GRADE profile [F.1.1.3](#)

MHFA compared to usual practice for mental wellbeing at work						
Patient or population: patients with or at risk of poor mental wellbeing at work						
Settings: workplace						
Intervention: MHFA						
Comparison: usual practice						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				
	Usual practice	MHFA				
Mental wellbeing		The mean mental wellbeing in the intervention groups was 0.06 standard deviations lower (0.27 lower to 0.15 higher)		349 (1 study)	⊕⊕⊕⊕ very low ^{1,2,3,4}	No difference
Mental health symptoms		The mean mental health symptoms in the intervention groups were 0.02 standard deviations higher (0.19 lower to 0.24 higher)		349 (1 study)	⊕⊕⊕⊕ very low ^{1,2,3,4}	No difference
Mental health symptoms	588 per 1000	518 per 1000 (418 to 635)	RR 0.88 (0.71 to 1.08)	323 (1 study)	⊕⊕⊕⊕ very low ^{2,3,4,5}	No difference
Mental health literacy		The mean mental health literacy in the intervention groups was		733 (2 studies)	⊕⊕⊕⊕ low ^{3,5,6,7}	Benefit

		0.49 standard deviations lower (0.64 to 0.34 lower)			
<p>*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).</p> <p>CI: Confidence interval; RR: Risk ratio;</p>					
<p>GRADE Working Group grades of evidence High quality: Further research is very unlikely to change our confidence in the estimate of effect. Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. Very low quality: We are very uncertain about the estimate.</p>					
<p>¹ Very serious concerns due to missing data and self-reported outcomes ² Single study analysis ³ No concerns as study population, intervention, comparator and outcome match the review protocol ⁴ Serious concerns as 95% CIs cross the line of no effect ⁵ Very serious concerns due to bias in randomisation and self-reported outcomes ⁶ No concerns as I-squared is less than 50% ⁷ No concerns as 95% CIs do not cross the line of no effect</p>					

Leadership development vs usual practice

See forest plots Leadership development vs usual practice (E1.4.1 to 1.4.3) and GRADE profile [F.1.1.4](#)

Leadership development for						
<p>Patient or population: patients with Settings: Intervention: Leadership development</p>						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				
	Control	Leadership development				
Mental wellbeing		The mean mental wellbeing in the intervention groups was 0.09 standard deviations higher (0.12 lower to 0.3 higher)		368 (1 study)	⊕⊖⊖⊖ very low ^{1,2,3,4}	No difference
Job satisfaction		The mean job satisfaction in the intervention groups was 0.01 standard deviations lower (0.22 lower to 0.2 higher)		368 (1 study)	⊕⊖⊖⊖ very low ^{1,2,3,5}	No difference)
Work climate		The mean work climate in the intervention groups was 0.06 standard deviations lower (0.27 lower to 0.15 higher)		368 (1 study)	⊕⊖⊖⊖ very low ^{1,2,3,5}	No difference
<p>*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).</p> <p>CI: Confidence interval;</p>						
<p>GRADE Working Group grades of evidence High quality: Further research is very unlikely to change our confidence in the estimate of effect. Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely</p>						

to change the estimate.
Very low quality: We are very uncertain about the estimate.

¹ Very serious concerns due to lack of information around missing data and self-reported outcomes
² Single study analysis
³ No concerns as study population, intervention, comparator and outcome match the review protocol
⁴ No explanation was provided
⁵ Serious concerns as 95% CIs cross the line of no effect and there is uncertainty over the numbers reported

Evidence not suitable for GRADE analysis: Leadership development vs control

Outcome	Study (no. of participants)	Risk of bias	Control results	Leadership development results	P value
Mental health symptoms – 3-month follow-up	Barrech 2018 (103)	Moderate	-	Hospital Anxiety and Depression Scale – anxiety subscale $\beta = 0.65$ (-0.69 to 2.00) No difference	-
Mental health symptoms – 7-month follow-up	Biggs 2014 (368)	High	-	Mean difference 0.04 (0.06 lower to 0.14 higher) No difference	-
Job stress – 3-month follow-up	Barrech 2018 (103)	Moderate	-	Job insecurity - $\beta = -5.78$ (-11.73 to 0.17) No difference	-

2-week rotations vs 4-week rotations

See forest plots 2-week rotations vs 4-week rotations (E1.5.1) and GRADE profile [F.1.1.5](#)

2-week rotations compared to 4-week rotations for wellbeing at work						
Patient or population: patients with wellbeing at work Settings: workplace Intervention: 2-week rotations Comparison: 4-week rotations						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				
	4-week rotations	2-week rotations				
Mental health symptoms	365 per 1000	186 per 1000 (117 to 299)	RR 0.51 (0.32 to 0.82)	202 (1 study)	⊕⊕⊕⊖ moderate ^{1,2,3,4}	Benefit
<p>*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).</p> <p>CI: Confidence interval; RR: Risk ratio;</p> <p>GRADE Working Group grades of evidence High quality: Further research is very unlikely to change our confidence in the estimate of effect. Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. Very low quality: We are very uncertain about the estimate.</p>						
¹ No explanation was provided ² Single study analysis						

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ No concerns as 95% CIs do not cross the line of no effect

Evidence not suitable for GRADE analysis: Care pathways vs usual practice

Outcome	Study (no. of participants)	Risk of bias	Usual practice results	Care pathways results	P value
Job stress at endpoint	Deneckere 2013 (581)	Moderate	-	Emotional exhaustion (UBI) $\beta = -0.57$ (-1.00 to -0.14) Benefit	-
Work climate at endpoint	Deneckere 2013 (581)	Moderate	-	Team climate inventory $\beta = 0.29$ (0.09 to 0.49) Benefit	-

Civility intervention vs usual practice

See forest plots Civility intervention vs usual practice (E1.6.1 to 1.6.5) and GRADE profile F.1.1.6

Civility intervention compared to usual practice for mental wellbeing at work						
Patient or population: patients with or at risk mental wellbeing at work						
Settings: workplace						
Intervention: Civility intervention						
Comparison: usual practice						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				
	Usual practice	Civility intervention				
Mental wellbeing		The mean mental wellbeing in the intervention groups was 0.02 standard deviations higher (0.14 lower to 0.18 higher)		907 (1 study)	⊕⊖⊖⊖ very low ^{1,2,3,4}	No difference
Job stress		The mean job stress in the intervention groups was 0.02 standard deviations higher (0.14 lower to 0.18 higher)		907 (1 study)	⊕⊖⊖⊖ very low ^{1,2,3,4}	No difference
Absenteeism		The mean absenteeism in the intervention groups was 0.16 standard deviations lower (0.32 lower to 0.01 higher)		907 (1 study)	⊕⊖⊖⊖ very low ^{1,2,3,4}	No difference
Job satisfaction		The mean job satisfaction in the intervention groups was 0.16 standard deviations lower (0.33 lower to 0 higher)		907 (1 study)	⊕⊖⊖⊖ very low ^{1,2,3,5}	No difference
Work climate		The mean work climate in the intervention groups was 0.11 standard deviations lower (0.27 lower to 0.06 higher)		907 (1 study)	⊕⊖⊖⊖ very low ^{1,2,3,4}	No difference
*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).						
CI: Confidence interval;						
GRADE Working Group grades of evidence						
High quality: Further research is very unlikely to change our confidence in the estimate of effect.						

<p>Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.</p> <p>Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.</p> <p>Very low quality: We are very uncertain about the estimate.</p>
<p>¹ Very serious concerns due to missing data and self-reported outcomes</p> <p>² Single study analysis</p> <p>³ No concerns as study population, intervention, comparator and outcome match the review protocol</p> <p>⁴ Some concerns as 95% CIs cross the line of no effect</p> <p>⁵ No concerns as 95% CIs do not cross the line of no effect</p>

Digital stress prevention vs usual practice

See forest plot Digital stress prevention (E.1.7.1) and GRADE profile [F.1.1.7](#)

Digital stress prevention compared to usual practice for mental wellbeing at work						
<p>Patient or population: patients with or at risk of poor mental wellbeing at work</p> <p>Settings: workplace</p> <p>Intervention: Digital stress prevention</p> <p>Comparison: usual practice</p>						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				
	Usual practice	Digital stress prevention				
Job stress		The mean job stress in the intervention groups was 0.06 standard deviations lower (0.4 lower to 0.27 higher)		138 (1 study)	⊕⊖⊖⊖ very low ^{1,2,3,4}	No difference
<p>*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).</p> <p>CI: Confidence interval;</p> <p>GRADE Working Group grades of evidence</p> <p>High quality: Further research is very unlikely to change our confidence in the estimate of effect.</p> <p>Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.</p> <p>Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.</p> <p>Very low quality: We are very uncertain about the estimate.</p>						
<p>¹ Serious concerns due to self-reported outcomes</p> <p>² Single study analysis</p> <p>³ No concerns as study population, intervention, comparator and outcome match the review protocol</p> <p>⁴ Some concerns as 95% CIs cross the line of no effect</p>						

Health promotion vs usual practice

See forest plots Health promotion vs usual practice (E.1.8.1 to 1.8.2) and GRADE profile [F.1.1.8](#)

Health promotion for mental wellbeing at work						
<p>Patient or population: patients with or at risk of poor mental wellbeing at work</p> <p>Settings: workplace</p> <p>Intervention: Health promotion</p> <p>Comparator: usual practice</p>						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				
	Control	Health promotion				
Job stress		The mean job stress in the intervention groups was 0.01 standard deviations		2100 (1 study)	⊕⊕⊖⊖ low ^{1,2,3,4}	No difference

		higher (0.08 lower to 0.1 higher)				
Quality of life - RCT		The mean quality of life in the intervention groups was 0.03 standard deviations higher (0.05 lower to 0.12 higher)		2100 (1 study)	⊕⊕⊕⊖ low ^{1,2,3,4}	No difference
Quality of life - Non-RCT		The mean quality of life in the intervention groups was 0.23 standard deviations lower (0.61 lower to 0.16 higher)		103 (1 study)	⊕⊕⊕⊖ very low ^{1,2,3,4}	No difference
<p>*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).</p> <p>CI: Confidence interval;</p> <p>GRADE Working Group grades of evidence High quality: Further research is very unlikely to change our confidence in the estimate of effect. Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. Very low quality: We are very uncertain about the estimate.</p> <p>¹ Serious concerns due to self-reported outcomes ² Single study analysis ³ No concerns as study population, intervention, comparator and outcome match the review protocol ⁴ Some concerns as 95% CIs cross the line of no effect</p>						

Peer support vs usual practice

See forest plots Peer support vs usual practice (E.1.9.1 to 1.9.2) and GRADE profile [F.1.1.9](#)

Peer support compared to usual practice for mental wellbeing at work						
Patient or population: patients with or at risk of mental wellbeing at work						
Settings: workplace						
Intervention: Peer support						
Comparison: usual practice						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				
	Usual practice	Peer support				
Mental wellbeing		The mean mental wellbeing in the intervention groups was 0.58 standard deviations lower (1.15 lower to 0 higher)		49 (1 study)	⊕⊕⊕⊖ moderate ^{1,2,3,4}	Benefit
Job stress		The mean job stress in the intervention groups was 0.16 standard deviations higher (0.4 lower to 0.72 higher)		49 (1 study)	⊕⊕⊕⊖ low ^{1,2,3,5}	No difference
Job satisfaction		The mean job satisfaction in the intervention groups was 0.57 standard deviations lower (1.14 lower to 0.01 higher)		49 (1 study)	⊕⊕⊕⊖ low ^{1,2,3,5}	No difference
<p>*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).</p> <p>CI: Confidence interval;</p> <p>GRADE Working Group grades of evidence High quality: Further research is very unlikely to change our confidence in the estimate of effect. Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.</p>						

<p>Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.</p> <p>Very low quality: We are very uncertain about the estimate.</p>
<p>¹ Serious concerns due to self-reported outcomes</p> <p>² Single study analysis</p> <p>³ No concerns as study population, intervention, comparator and outcome match the review protocol</p> <p>⁴ No concerns as 95% CIs do not cross the line of no effect</p> <p>⁵ Some concerns as 95% CIs cross the line of no effect</p>

Psychological capital (PsyCap) vs usual practice

See forest plots PsyCap vs usual practice (E.1.10.1 to 1.10.2) and GRADE profile [F.1.1.10](#)

PsyCap compared to usual practice for mental wellbeing at work						
<p>Patient or population: patients with or at risk of poor mental wellbeing at work</p> <p>Settings: workplace</p> <p>Intervention: PsyCap</p> <p>Comparison: usual practice</p>						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk	Corresponding risk				
	Usual practice	PsyCap				
Mental wellbeing		The mean mental wellbeing in the intervention groups was 0.51 standard deviations lower (0.77 to 0.25 lower)		234 (1 study)	⊕⊕⊕⊕ high ^{1,2,3,4}	Benefit
Productivity		The mean productivity in the intervention groups was 0.02 standard deviations higher (0.24 lower to 0.27 higher)		234 (1 study)	⊕⊕⊕⊖ moderate ^{1,2,3,5}	No difference
<p>*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).</p> <p>CI: Confidence interval;</p> <p>GRADE Working Group grades of evidence</p> <p>High quality: Further research is very unlikely to change our confidence in the estimate of effect.</p> <p>Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.</p> <p>Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.</p> <p>Very low quality: We are very uncertain about the estimate.</p>						
<p>¹ Low risk of bias</p> <p>² Single study analysis</p> <p>³ No concerns as study population, intervention, comparator and outcome match the review protocol</p> <p>⁴ No concerns as 95% CIs do not cross the line of no effect</p> <p>⁵ No explanation was provided</p>						

Family supportive supervision (STAR) vs usual practice

See forest plot STAR vs usual practice (E.1.11.1) and GRADE profile [F.1.1.11](#)

STAR compared to usual practice for mental wellbeing at work						
<p>Patient or population: patients with or at risk of poor mental wellbeing at work</p> <p>Settings: workplace</p> <p>Intervention: STAR</p> <p>Comparison: usual practice</p>						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				

	Usual practice	STAR				
Mental health symptoms		The mean mental health symptoms in the intervention groups were 0.00 standard deviations higher (0.13 lower to 0.13 higher)		985 (1 study)	⊕⊖⊖⊖ very low ^{1,2,3,4}	No difference
<p>*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).</p> <p>CI: Confidence interval;</p> <p>GRADE Working Group grades of evidence High quality: Further research is very unlikely to change our confidence in the estimate of effect. Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. Very low quality: We are very uncertain about the estimate.</p> <p>¹ Very serious concerns due to missing data and self-reported outcomes ² Single study analysis ³ No concerns as study population, intervention, comparator and outcome match the review protocol ⁴ Serious concerns as 95%CI cross the line of no effect</p>						

Team reflexivity vs team building

See forest plot Team reflexivity vs team building (E.1.12.1) and GRADE profile [F.1.1.12](#)

Team reflexivity compared to team building for mental wellbeing at work						
<p>Patient or population: patients with or at risk of poor mental wellbeing at work Settings: workplace Intervention: Team reflexivity Comparison: team building</p>						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				
	Team building	Team reflexivity				
Job stress		The mean job stress in the intervention groups was 0.36 standard deviations lower (0.54 to 0.17 lower)		463 (1 study)	⊕⊖⊖⊖ very low ^{1,2,3,4}	Benefit
<p>*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).</p> <p>CI: Confidence interval;</p> <p>GRADE Working Group grades of evidence High quality: Further research is very unlikely to change our confidence in the estimate of effect. Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. Very low quality: We are very uncertain about the estimate.</p> <p>¹ Serious concerns due to self-reported outcomes ² Single study analysis ³ No concerns as study population, intervention, comparator and outcome match the review protocol ⁴ No concerns as 95% CIs do not cross the line of no effect</p>						

IT support vs usual practice

See forest plot Team reflexivity vs team building (E.1.13.1 to 1.13.3) and GRADE profile [F.1.1.13](#)

IT support compared to usual practice for mental wellbeing at work						
Patient or population: patients with or at risk of poor mental wellbeing at work						
Settings: workplace						
Intervention: IT support						
Comparison: usual practice						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				
	Usual practice	IT support				
Job stress		The mean job stress in the intervention groups was 0.55 standard deviations lower (1.24 lower to 0.15 higher)		33 (1 study)	⊕⊖⊖⊖ very low ^{1,2,3,4}	No difference
Job satisfaction		The mean job satisfaction in the intervention groups was 1.94 standard deviations lower (2.79 to 1.1 lower)		33 (1 study)	⊕⊖⊖⊖ very low ^{1,2,3,5}	Benefit
Quality of life		The mean quality of life in the intervention groups was 1.04 standard deviations lower (1.77 to 0.31 lower)		33 (1 study)	⊕⊖⊖⊖ very low ^{1,2,3,5}	Benefit
*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).						
CI: Confidence interval;						
GRADE Working Group grades of evidence High quality: Further research is very unlikely to change our confidence in the estimate of effect. Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. Very low quality: We are very uncertain about the estimate.						
¹ Very serious concerns due to missing data and self-reported outcomes						
² Single study analysis						
³ No concerns as study population, intervention, comparator and outcome match the review protocol						
⁴ Some concerns as 95% CIs cross the line of no effect						
⁵ No concerns as 95% CIs do not cross the line of no effect						

Leadership development with employee wellness (LDEW) vs usual practice

See forest plots Leadership development and employee wellness (LDEW) intervention vs usual care (E.1.14.1 to 1.14.4) and GRADE profile [F.1.1.14](#)

Leadership development with employee wellness compared to usual practice for mental wellbeing at work						
Patient or population: patients with or at risk of poor mental wellbeing at work						
Settings: workplace						
Intervention: Leadership development + employee wellness						
Comparison: usual practice						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				
	Usual practice	Leadership development + employee wellness				
Absenteeism		The mean absenteeism in the intervention groups was 0.56 standard deviations higher (0.31 lower to 1.44 higher)		179 (2 studies)	⊕⊖⊖⊖ very low ^{1,2,3,4}	No difference
Presenteeism		The mean presenteeism in the intervention groups was 0.08 standard deviations		179 (2 studies)	⊕⊖⊖⊖ very low ^{1,3,4,5}	No difference

		higher (0.22 lower to 0.37 higher)				
Quality of life		The mean quality of life in the intervention groups was 0.14 standard deviations higher (0.16 lower to 0.44 higher)		179 (2 studies)	⊕⊕⊕⊕ very low ^{1,3,4,5}	No difference
Work climate		The mean work climate in the intervention groups was 0.15 standard deviations higher (0.68 lower to 0.99 higher)		179 (2 studies)	⊕⊕⊕⊕ very low ^{1,2,3,4}	No difference
<p>*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).</p> <p>CI: Confidence interval;</p> <p>GRADE Working Group grades of evidence High quality: Further research is very unlikely to change our confidence in the estimate of effect. Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. Very low quality: We are very uncertain about the estimate.</p> <p>¹ Very serious concerns due to lack of detail around missing data and self-reported outcomes ² Very serious concerns as I-squared is greater than 75% ³ No concerns as study population, intervention, comparator and outcome match the review protocol ⁴ Some concerns as 95% CIs cross the line of no effect ⁵ No concerns as I-squared is less than 50%</p>						

Participatory intervention with lifestyle intervention vs usual practice

See forest plots Participatory + lifestyle vs usual practice (E.1.15.1 to 1.15.2) and GRADE profile [F.1.1.15](#)

Participatory with lifestyle intervention compared to usual practice for mental wellbeing at work						
<p>Patient or population: patients with or at risk of poor mental wellbeing at work Settings: workplace Intervention: Participatory + lifestyle Comparison: usual practice</p>						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				
	Usual practice	Participatory + lifestyle				
Job stress		The mean job stress in the intervention groups was 0.10 standard deviations lower (0.36 lower to 0.16 higher)		226 (1 study)	⊕⊕⊕⊕ low ^{1,2,3,4}	No difference
Absenteeism	92 per 1000	75 per 1000 (33 to 167)	RR 0.81 (0.36 to 1.81)	264 (1 study)	⊕⊕⊕⊕ moderate ^{2,3,4,5}	No difference
<p>*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).</p> <p>CI: Confidence interval; RR: Risk ratio;</p> <p>GRADE Working Group grades of evidence High quality: Further research is very unlikely to change our confidence in the estimate of effect. Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate. Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate. Very low quality: We are very uncertain about the estimate.</p>						

¹ Serious concerns due to self-reported outcomes
² Single study analysis
³ No concerns as study population, intervention, comparator and outcome match the review protocol
⁴ Some concerns as 95% CIs cross the line of no effect
⁵ Low risk of bias

Participatory with support group vs usual practice

See forest plot Participatory + support group vs usual practice ([E.1.16.1](#)) and GRADE profile [F.1.1.16](#)

Participatory with support group compared to usual practice for mental wellbeing at work						
Patient or population: patients with or at risk of mental wellbeing at workplace						
Settings: workplace						
Intervention: Participatory intervention with support group						
Comparison: usual practice						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				
	Usual practice	Participatory + support group				
Job stress		The mean job stress in the intervention groups was 0.13 standard deviations lower (0.37 lower to 0.12 higher)		304 (1 study)	⊕⊕⊖⊖ low ^{1,2,3,4}	No difference
*The basis for the assumed risk (e.g. the median control group risk across studies) is provided in footnotes. The corresponding risk (and its 95% confidence interval) is based on the assumed risk in the comparison group and the relative effect of the intervention (and its 95% CI).						
CI: Confidence interval;						
GRADE Working Group grades of evidence						
High quality: Further research is very unlikely to change our confidence in the estimate of effect.						
Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.						
Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.						
Very low quality: We are very uncertain about the estimate.						
¹ Serious concerns due to self-reported outcomes						
² Single study analysis						
³ No concerns as study population, intervention, comparator and outcome match the review protocol						
⁴ Some concerns as 95% CIs cross the line of no effect						

Microbreaks vs usual care

See forest plot Microbreaks (E.1.17.1 to 1.17.2) and GRADE profile [F.1.1.17](#)

Microbreaks compared with usual care for mental wellbeing at work						
Patient or population: patients with or at risk of poor mental wellbeing at work						
Settings: workplace						
Intervention: Microbreaks vs usual practice						
Comparison: usual care						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Direction of effect
	Assumed risk	Corresponding risk				
	Control	Microbreaks vs usual practice				
Mental wellbeing		The mean mental wellbeing in the intervention groups was 0.55 standard deviations lower (1.17 lower to 0.06 higher)		45 (1 study)	⊕⊕⊖⊖ low ^{1,2,3,4}	No difference
Job stress		The mean job stress in the intervention groups was 0.76 standard deviations lower (1.39 to 0.14 lower)		45 (1 study)	⊕⊕⊕⊖ moderate ^{1,2,3,5}	Benefit

*The basis for the **assumed risk** (e.g. the median control group risk across studies) is provided in footnotes. The **corresponding risk** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval;

GRADE Working Group grades of evidence
High quality: Further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: We are very uncertain about the estimate.

¹ Serious concerns due to self-reported outcomes
² Single-study analysis
³ No concerns as study population, intervention, comparator and outcome match the review protocol
⁴ Some concerns as 95% CIs cross the line of no effect
⁵ No concerns as 95% CIs do not cross the line of no effect

Employee Assistance Programs (EAP) vs usual care

See forest plot Employee assistance programs (E1.18.1 to 1.18.3) and GRADE profile [F.1.1.18](#)

Employee Assistance Programs compared with usual care for mental wellbeing at work						
Patient or population: patients with or at risk of poor mental wellbeing at work Settings: workplace Intervention: Employee Assistance Programs Comparator: usual care						
Outcomes	Illustrative comparative risks* (95% CI)		Relative effect (95% CI)	No of Participants (studies)	Quality of the evidence (GRADE)	Comments
	Assumed risk	Corresponding risk				
	Control	Employee Assistance Programs				
Presenteeism Follow-up: 12 months		The mean presenteeism in the intervention groups was 0.17 standard deviations lower (0.39 lower to 0.04 higher)		340 (1 study)	⊕⊕⊕⊕ very low ^{1,2,3,4}	No difference
Absenteeism Follow-up: 12 months		The mean absenteeism in the intervention groups was 0.23 standard deviations lower (0.44 to 0.01 lower)		343 (1 study)	⊕⊕⊕⊕ very low ^{1,2,3,4}	Benefit
Workplace distress Follow-up: 12 months		The mean workplace distress in the intervention groups was 0.08 standard deviations lower (0.3 lower to 0.13 higher)		338 (1 study)	⊕⊕⊕⊕ very low ^{1,2,3,4}	No difference

*The basis for the **assumed risk** (e.g. the median control group risk across studies) is provided in footnotes. The **corresponding risk** (and its 95% confidence interval) is based on the assumed risk in the comparison group and the **relative effect** of the intervention (and its 95% CI).

CI: Confidence interval;

GRADE Working Group grades of evidence
High quality: Further research is very unlikely to change our confidence in the estimate of effect.
Moderate quality: Further research is likely to have an important impact on our confidence in the estimate of effect and may change the estimate.
Low quality: Further research is very likely to have an important impact on our confidence in the estimate of effect and is likely to change the estimate.
Very low quality: We are very uncertain about the estimate.

¹ Serious concerns regarding representativeness of sample, participant attrition between 35% to 45%, use self-report measures utilised and potential confounding due to a lack of blinding and allocation concealment
² Single study analysis
³ No concerns as study population, intervention, comparator and outcome match the review protocol
⁴ Serious concerns as 95% CIs cross the line of no effect

Qualitative evidence

Table 5: Summary of key themes

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
Organisational interventions to prevent burnout: Taking breaks					
Benefits and feasibility	Hall 2018	General practitioners	Scheduling a coffee break was viewed as feasible by those already doing this and as being beneficial as it provided the opportunity to mix with colleagues, meet physical needs such as having a drink, and having a few minutes respite from 'being the doctor' However scheduling a lunch break was not generally seen as being feasible.	<i>'The coffee break in the middle of morning surgery. We try and get here and meet for a bit of rest and recuperation. ... I've definitely recognized that it is a positive factor for our well-being and therefore it's something that we need to maintain and cherish.'</i>	Low
Organisational interventions to prevent burnout: Support systems					
Suggested support systems	Hall 2018	General practitioners	Having social support both within the practice, peer to peer, and from outside of the practice was found to be helpful in preventing burnout. Participants suggested buddying and mentoring systems and meetings to check how colleagues were doing.	<i>'But I think also, looking after each other.... I think we're quite good at looking over our shoulder at the other person (...) if you see somebody's got a really full load, getting them a cup of tea, or going and seeing one of their extras, (...) is quite a positive thing about our team that we tend to do.'</i>	Low
Organisational interventions to prevent burnout: Importance of psychological strategies					
Maintaining awareness of risk of burnout	Hall 2018	General practitioners	Maintaining awareness of the risk of burnout was noted as a useful strategy by some participants. It was also noted that this could be implemented in	<i>'I agree. Self-awareness is often the key thing. I certainly wasn't taught that in a training stage. I think if trainees are taught or encouraged to be more self-aware so they know what their personal stresses are, how to</i>	Low

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
			practices through discussions and meetings, and externally at the training stage. It was highlighted that awareness was needed at the individual, practice and external levels.	<i>manage them, how to identify them (...). I suppose that's actually resilience isn't it; it probably makes people feel more resilient because they're more aware of their limits.'</i>	
Control over workload	Hall 2018	General practitioners	Some GPs (in particular locums) used control over how much work they did and when and where they did their work, as a strategy to prevent burnout. Many had chosen this way of working specifically to prevent them from burning out, or as a way forward to protect their well-being after previously working full-time and suffering from burnout or depression.		Low
Organisation intervention: Barriers to leader engagement					
Perceptual and emotional barriers	Karanika-Murray, 2018	Participants from a hospital and local government: Intervention leads, intervention champions and implementation team of external consultants.	<p>Study participants outlined that a lack of confidence in intervention sustainability, lack of buy-in related to perceived lack of relevance or interest in the goals of the intervention were barriers to leader engagement.</p> <p>Line managers expressed feelings that their own authority was being undermined, and that structural changes and excessive</p>	<p><i>[...] change in management resulted in ongoing "sell" of the benefits of the project and although the initiatives were driven, following the survey and group sessions, by staff, new managers in post wanted to be seen to be taking action and influence change from their own experiences (Interviewee A).</i></p> <p><i>[...] they thought that the project was coming to help this and not give [them] extra work (Interviewee E).</i></p>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
			workload were barriers to their engagement		
Poor quality of communication	Karanika-Murray, 2018	Participants from a hospital and local government: Intervention leads, intervention champions and implementation team of external consultants.	<p>Study participants outlined that weak or a lack of people management skills necessary to support staff involvement in the broader intervention program and specific activities was a barrier to intervention engagement.</p> <p>Line Managers highlighted that the highly hierarchical structure within respective settings and inconsistent messages due to loss of information cascaded down the hierarchy was a barrier to engagement.</p>	<i>[...] inconsistency in the message around the initial launch being about the older worker and that was quite quickly lost (Interviewee A).</i>	Moderate
Organizational factors	Karanika-Murray, 2018	Participants from a hospital and local government: Intervention leads, intervention champions and implementation team of external consultants.	<p>Participants outlined a history of failed change and the presence of too many layers in the hierarchy and bureaucracy, and the need for work planning considerations and prioritization as factors explaining the leaders' disengagement and lack of support for the intervention.</p>	<p><i>Historically in the healthcare sector the change implemented top down cannot be embedded and it is not sustainable (Interviewee F).</i></p> <p><i>There have been similar initiatives done in the past around engagement and a couple of managers mentioned about sustainability and projects come and go and nothing seems to be sustainable (Interviewee C).</i></p>	Moderate
Organisation intervention: Dealing with barriers to leader engagement					
Formalized and targeted	Karanika-Murray, 2018	Participants from a hospital and local government:	Participants outlined that engaging in discussions and meetings with Senior and Line Managers	<i>[...] going to the middle managers and speaking to SM and be fully aware of how this is (Interviewee G talking about an Line</i>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
communication		Intervention leads, intervention champions and implementation team of external consultants.	and highlighting the potential quick intervention could facilitate leadership buy-in	<i>Managers negative behaviours).</i>	
Perspective-taking	Karanika-Murray, 2018	Participants from a hospital and local government: Intervention leads, intervention champions and implementation team of external consultants.	Participants highlighted that initiating reactive ad hoc discussions, addressing concerns, perspective-taking, active listening, incorporating suggestions into intervention plans and recognizing the leader's contribution to the intervention could overcome barrier to leadership engagement.	<i>[...] from "this is your project, it is not for us" to "this is your project and we want to work with you to achieve these results" (Interviewee C reporting on a leader's position).</i>	Moderate
Organisation intervention: facilitating leader engagement					
Regular and quality communication	Karanika-Murray, 2018	Participants from a hospital and local government: Intervention leads, intervention champions and implementation team of external consultants.	The use of consistent messages and unambiguous language, encouraging follow-up discussions and face-to-face meetings and keeping communication lines open were outlined as facilitating leadership engagement.	<i>It is understanding what would add value to them and it is sticking to the initial objective and being very clear what the objectives are, what the outcomes are gonna be and when they will be achieved by (Interviewee A).</i>	Moderate
Showing consideration for the leader's role	Karanika-Murray, 2018	Participants from a hospital and local government: Intervention leads, intervention	Getting acquainted with the leaders, adopting a genuine and personal approach, getting to know the leader's perspective, and demonstrating how	<i>Learning and understanding their personalities [...] It was very important to always show respect to SM [...] show them their position and place (Interviewee E).</i>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
and needs		champions and implementation team of external consultants.	<p>the intervention can add value to their daily work were outlined as facilitating leadership engagement.</p> <p>Participants outlined that showing respect by not acting without Senior Managers approval and ensuring a professional and open relationship facilitated leadership engagement.</p>		
Demonstrating impact on the businesses	Karanika-Murray, 2018	Participants from a hospital and local government: Intervention leads, intervention champions and implementation team of external consultants.	Providing evidence that investment in the intervention is worthwhile, demonstrating the value and benefits of the initiatives, and showing how the intervention would be supporting work culture and business priorities were considered to facilitate leadership engagement.	<i>[...] tell me what it aims to achieve [...] (Interviewee C reporting on a leader's position)</i>	Moderate
Organisation intervention: Factors accelerating leader engagement					
Cascading targeted messages	Karanika-Murray, 2018	Participants from a hospital and local government: Intervention leads, intervention champions and implementation team of external consultants.	Participants outlined that regularly targeting of messages specifically the Senior Managers and, in turn, cascading to the Line Managers accelerated leadership engagement.	<p><i>Due to the regular updates they receive the SM know more what is going to happen [...] so therefore they come on board quite quickly (Interviewee E).</i></p> <p><i>[...] clearly the Director is supporting this and maybe I should get involved [...] (Interviewee C reflecting on the leaders' position).</i></p>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
Allowing time and tuning the pace of engagement	Karanika-Murray, 2018	Participants from a hospital and local government: Intervention leads, intervention champions and implementation team of external consultants.	Participants outlined that there is a need to find the right time and pace for each leader when communicating or implementing the intervention, to facilitate easier integration into their normal workflow.	<i>[...] some people will think and be prepared to see through or understand that there are reasons why “things are not happening as quickly as I would like them to,” but some people say “actually I cannot afford any more time and this is not happening quickly enough” therefore, they drop out (Interviewee C).</i>	Moderate
Projected benefits of change	Karanika-Murray, 2018	Participants from a hospital and local government: Intervention leads, intervention champions and implementation team of external consultants.	Appreciating the benefits of the anticipated change on daily work was considered to facilitate leadership engagement	<i>As soon as the LMs see direct effect on their work some LMs want to be left and some are more than happy to be involved (Interviewee E).</i>	Moderate
Organisation intervention: Factors linked to differences in engagement between leadership levels					
The leader’s position in the hierarchy	Karanika-Murray, 2018	Participants from a hospital and local government: Intervention leads, intervention champions and implementation team of external consultants.	<p>Participants outlined that different roles and accountability were a factor that influenced engagement between leadership levels and this needs to be accounted for.</p> <p>The two levels were interrelated, such that lack of SM involvement is a risk to LM engagement.</p> <p>Senior Managers had a wider reach, more overall control and decision making.</p> <p>Line Managers undertook more</p>	<i>The more senior they get the more sway they have over large number of things (Interviewee C).</i>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
			decision-making over operational activities and had greater influential at the team level.		
The leader's authority	Karanika-Murray, 2018	Participants from a hospital and local government: Intervention leads, intervention champions and implementation team of external consultants.	Consideration of whose opinion (senior or line manager) staff respected the most impacted engagement.	<i>People will look to a level above their line manager [...] and then depends on the relationship between these two managers (Interviewee C).</i>	Moderate
The scope of change	Karanika-Murray, 2018	Participants from a hospital and local government: Intervention leads, intervention champions and implementation team of external consultants.	The breadth and pervasiveness of change was seen to impact engagement between leadership levels, with Line Managers more cautious and limited by their remit which may impact their engagement.	<i>It depends on the level of the change (Interviewee C)</i>	Moderate
Coaching and mentoring intervention: Increasing skills					
Confidence improvement and increased self-awareness	Bachkirova, 2015	Doctors and dentists	Participants reported that the intervention improved confidence and provided them with skills which increased self-awareness regarding mental health and wellbeing.	<i>Substantially increased my confidence in the workplace in the context of being a new consultant joining a well-established senior team.</i> <i>'...gave me insight into the tools I possess myself to change my work and personal life.'</i>	Low
Work-life balance, seeing things in	Bachkirova, 2015	Doctors and dentists	Participants reported that as a result of coaching there was a significant difference in areas of their working life which included seeing	<i>'It has improved my perspective on what I am able to achieve at work and so improved my work-life balance significantly. I feel better able to cope as a result.'</i>	Low

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
perspective			things in perspective, better work life balance and career development	<p><i>‘...helped me to see my position, behaviour and current options in better perspective’.</i></p> <p><i>‘...focused my ideas of where I want to be in the future and how to influence and use the resources open to me now to reach these roles’</i></p>	
Acquisition of skills to address potential issues	Bachkirova, 2015	Doctors and dentists	Participants outlined that the intervention provided skills that could help in addressing potential issues, such problem-solving, reflection and seeing things in perspective	<p><i>‘I can now confidently formulate strategies to help me achieve my goals’.</i></p> <p><i>‘...taught me how to analyse my experiences objectively – reflecting, thinking about things a lot deeper than I usually would.’</i></p>	Low
Coaching and mentoring intervention: An opportunity to be heard					
Being listened to and sharing	Bachkirova, 2015	Doctors and dentists	Participants expressed that the intervention provided an opportunity to share and be listened to	<i>‘I was able to safely discuss a very difficult situation at work’.</i>	Low
Motivators and facilitators to becoming a Mental Health First Aider					
Altruism	Kidger 2016 Narayanasamy 2018	Employees from the public sector (including secondary schools), the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received	Wanting to help others and to ‘make a difference. In some cases, this was because people had experienced poor mental health themselves and others felt they had the right sort of personality traits to help. Some found others tended to come to them with their problems and so becoming a MHFA helped formalise the support they gave.	<p><i>‘I’d suffered from problems myself, and so I always thought if I can, and I like to think I’m a caring person, so if I can help somebody in any way possible, I’ll probably go out of my way to try and help them. And I thought I wouldn’t want anybody to go through whatever I went through’.</i></p> <p><i>“There are people that you move towards who radiate support and then you’ve got the people who if you sit down next to them, it’s like you get it all sucked out of you, so</i></p>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
		support from MHFAs.		<i>there's radiators and drains, and if I look at the members of staff who have been nominated for this, they're all the radiators"</i>	
Part of a wider organisational approach	Narayana samy 2018	Employees from the public sector the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received support from MHFAs.	In some cases, MHFA training was offered as part of a wider organisational approach to mental wellbeing, though some participants saw it as 'being seen to be doing something'.	<i>'We also have mental health awareness courses as well, specifically for managers, and looking at how they can develop a culture of mental health and wellbeing within their teams and support mental health and wellbeing on a day-to-day basis rather than just the emergency end of the spectrum'</i> <i>'So we end up needing a sticking plaster, as in 'I need a time out, I need some help' and going to someone. Whereas really, we should be understanding more how people like bosses and colleagues and so on, how they behave and all this sort of thing, how that has an impact'.</i>	Moderate
A desire to improve knowledge and confidence to help.	Narayana samy 2018	Employees from the public sector the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received support from MHFAs.	Participants reported taking the MHFA training to provide them with additional skills and confidence to help colleagues.	<i>'I think my hopes for the training course were, like I said, to feel more confident in a situation where I would want to help someone but maybe didn't know what should be done. And I think I just was interested to find out more about things like psychosis and, you know, what to do if in sort of like more towards the extreme side of things'.</i>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
Mandatory versus voluntary roles	Narayana samy 2018	Employees from the public sector the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received support from MHFAs.	In some organisations, becoming a MHFA was voluntary but in others it was mandatory for employees in certain roles. Some participants felt MHFA training at some level should be mandatory for everyone.	<i>'I think it should be compulsory, yeah. It's like first aid, you know, you could save somebody's life, couldn't you, if you know what to do. Or you could do harm. And I don't think it should be any different really'</i>	Moderate
Barriers to becoming a Mental Health First Aider					
Time and work pressures	Kidger 2016 Narayana samy 2018 Fisher, 2020	Employees from the public sector (including secondary schools), the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received support from MHFAs. Intervention trainers and public sector participants	Concerns about the time to attend the course and to offer MHFA support to others and how this might impact on their substantive workload, was noted as a concern both by the person becoming a MHFA and in some cases, their managers. It was noted that managers concerns were often due to a lack of understanding of what the role entailed. Intervention trainers highlighted challenges in setting up aspects of the intervention for	<i>'I think probably the only resistance I'm aware of, and I suppose it wasn't really resistance, but just more concern that my boss had about what the effects would be and whether that would take away from what I'm meant to be here doing type thing. But I think that was more just a lack of understanding on that account, and I think once she understood that she was fine about it'.</i> <i>"...it might have prompted a little bit more conversation and discussion about what do we do? But there wasn't a huge amount of that and the course doesn't really lend itself, because again,</i>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
			<p>example the peer support service.</p> <p>Some groups outlined that finding time to meet was the reason that some groups failed to meet at all even to set the service up, and no groups were meeting a year on</p> <p>There was a struggle reported for some to find the time and space to meet with staff who wanted support</p>	<p><i>you've got to get through this and that" [Trainer four].</i></p> <p><i>"If we've got half an hour free at all it will be different times in the day."</i></p> <p><i>"No, not as a whole group. We had a few meetings in the term after the training, but even then, it was a real struggle to get people. And once you get the same people over and over, you start to think, well it's not good" [School 1D, phase two].</i></p>	
Timing of interventions	Fisher, 2020	Intervention (MHFA) trainers	<p>Trainers reported a reduction in time available due to expectations of delivering the course within a school day, with set break and lunchtimes and other scheduled school events being prioritised:</p> <p>Trainers had to be adaptive in their delivery style to ensure that key materials were covered within a shorter timescale:</p>	<p><i>"We couldn't start at eight thirty because it was an inset day and the Principal wanted staff to come and join the main assembly for a talk. So that pushed it beyond nine o'clock" [Trainer four].</i></p> <p><i>"We're not going to be pedantic about timescales...we'll just go with the flow of the school day and just stop and start when it automatically fits" [Trainer six].</i></p>	Moderate
Attitudes towards mental health	Narayana samy 2018	Employees from the public sector the private and the third sector. Includes employees who had been trained as Mental	These included dismissive attitudes towards mental health in general. In addition, where the MHFA had experienced poor mental health themselves, managers may in some cases express	<i>... the ones who talk about snowflake generations and all of that kind of stuff – in my day we just got on with it, you know, that whole thing. So they're the kind of quite classic, I suppose...people who don't see anything wrong with using derogatory</i>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
		health first aiders, (MHFAs) and some who had received support from MHFAs.	concerns that becoming a MHFA may be ‘too much’ and impact on the MHFA’s own mental wellbeing.	<p><i>terms, they think people should man up, they think people should just get on with and pull themselves together kind of thing’.</i></p> <p><i>‘And of course you had to fill in a form if you wanted to go on the network after you’d done the training, and it obviously flagged up that I’d had quite a serious condition. So they did call me back and have a chat and say, you know, ‘Do you think this might be too much for you?’ And we just had a chat. And I said, ‘Oh no, it’s fine.’ And they said, ‘Oh well, yeah, if you’re happy to go ahead’</i></p>	
Needs of employees	Fisher, 2020	Intervention (MHFA) trainers	<p>Participants outlined the need to exhibit flexibility in relation to the choice of materials or timetabling of exercises depending on the needs of the group receiving the intervention.</p> <p>Participants outlined that sessions need to be dynamic and respond to the needs of the group for more effective attendee participation</p>	<p><i>“You’re not meant to go off the planned route really but if the room is slumping slightly you can kind of get them sort of reenergised for a little while and get them involved in something” [Trainer five].</i></p> <p><i>“I think it’s a general thing about watching your group, seeing how they’re interacting, and making sure that they are interacting about the subject matter” [Trainer three].</i></p>	Moderate
Location of the Mental Health First Aid training delivery	Fisher, 2020	Intervention (MHFA) trainers	Being on-site resulted in interruptions to the delivery of training in some schools, due to competing priorities of school staff, such as resolving student incidents, performance management meetings and break duties	<i>“There was an incident in the school that afternoon, which required several members of staff to have to leave in the afternoon and go and do things and come back. I guess that’s just the nature of life inside a school” [Trainer two].</i>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
			Trainers highlighted that being flexible in delivery during such interruptions was key to ensure coverage of sufficient content	<i>“Frequently I was having to move the day around or rejig, to make sure they covered the most important points” [Trainer three].</i>	
Environment, location and space	Fisher, 2020	Public sector participants	Some reflected that it is hard to find a confidential space within a school which could affect the staff approaching peer supporters and the quality of the conversation undertaken	<i>“And also, finding a place at that time as well... I was seeing someone after school, and we were chatting, talking about something they were a bit concerned about, and then somebody else just walked in and just stood there. I didn’t want to say, this is a private, a mentoring, this is confidential. So this person doesn’t want me telling somebody else that, so that was difficult.....I didn’t know what to do because I didn’t want to embarrass the person that was there, I wanted to be rude to the person who just stood there but I couldn’t, and they still didn’t go, they still didn’t get the message” [School 2 L, phase two].</i>	Moderate
Acceptability of Mental Health First Aiders					
Support of senior leadership	Kidger 2016 Narayanasamy 2018 Fisher, 2020	Employees from the public sector (including secondary schools), the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who	To encourage acceptance of MHFAs participants noted the importance of senior managers promoting or championing the training. Participants outlined that to address implementation problems such as lack of time and lack of clarity over	<i>“I think someone on the senior leadership team needs to be involved in the project not as a staff supporter because I think our school is like others that would immediately create a barrier to any sort of free chat or anything, but to oversee it to make sure it happens”.</i> <i>“And I think that maybe needs to be addressed because we want to have more of an impact. Then actually, we need to have that recognition, as to the</i>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
		<p>had received support from MHFAs.</p> <p>Public sector participants</p>	<p>policies, stronger support and recognition from senior leadership was needed.</p>	<p><i>role that we are playing. And perhaps sitting down with the Head and, as a group of people, this is our plan, how will you support us, kind of thing because it is really important” [School 2 L, phase 1].</i></p>	
Promotion	<p>Kidger 2016</p> <p>Narayana samy 2018</p>	<p>Employees from the public sector (including secondary schools), the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received support from MHFAs.</p>	<p>Participants described a range of ways in which MHFAs were promoted and how acceptable or not these may be. These included websites, the intranet, posters in communal areas and individual MHFA’s being identified by a lanyard or badge. Some noted that for those with concerns about stigma or confidentiality, discretion was important, though others felt that in order to normalise the use of MHFAs, it was important for there to be openness and for MHFAs to be treated in the same ways as physical first aid.</p>	<p><i>‘They’re in the toilets in our office. I think it’s a bit more subtle. If you’re going to jot the number down, no one has to see you do it’.</i></p> <p><i>... basically you have a list of ‘normal’ first aiders – you know, physical first aiders – and that’s stuck to the wall in the staff tearoom. Next to it is the one from the Mental Health First Aiders ... that’s what the culture is that we’re looking for that people have an awareness of; obviously it’s just very much normalised in the workplace ’</i></p>	Moderate
Need for a balance according to role, seniority and gender.	Narayana samy 2018	<p>Employees from the public sector the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and</p>	<p>Some participants also noted the importance of there being a balance of MHFA’s according to gender, seniority and job role.</p>	<p><i>‘they’re all office based, either administrative roles or one of the safety advisers, QS, quantity surveyor. So they’re office based, which is why I say what we really want is a spread across. It would have been great to have had a couple of site supervisors as well, or even some lads who are on the tools, you know, chippies or something’</i></p>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
		some who had received support from MHFAs.			
Accessibility of Mental Health First Aiders					
Time and work pressures	Kidger 2016 Narayana samy 2018	Employees from the public sector (including secondary schools), the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received support from MHFAs.	Pressure of work, and concerns about distracting the MHFA from their work were some of the barriers to accessing MHFAs mentioned by participants.	<i>'I wouldn't want to during working hours go to somebody else who was working because I'd know that ... they'll then be half an hour behind on everything they're trying to do. So I think the work pressure side of it comes in.'</i>	Moderate
Confidentiality	Kidger 2016 Narayana samy 2018	Employees from the public sector (including secondary schools), the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received support from MHFAs.	Lack of private space was also noted as a concern in some cases and it was noted that it may deter people from accessing MHFAs. Others felt accessing MHFA at work felt 'too close' and that they would probably look for other forms of support.	<i>'I also find it difficult because sometimes people will just come and talk to me, but reception's still happening. And there is always an opportunity to say to them, 'Would you like to go somewhere a little bit quieter and talk to me?' But it's too public a place really, I think.'</i> <i>'I think the fact that we've got within the organisation an occupational nurse that comes in, I would probably, if I ended up in a situation that I couldn't speak to a colleague, I would probably go and see them as a starter for 10, probably more so than some of the people who've identified as a Mental Health First Aider ... I know like for instance the Samaritans have got a</i>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
				<i>phone number you can talk to and things like that'</i>	
Lack of awareness	Kidger 2016 Narayana samy 2018	Employees from the public sector (including secondary schools), the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received support from MHFAs.	Several participants noted a lack of awareness of MHFAs being available in their organisation, despite a MHFA scheme being in place.	<i>'I honestly haven't really heard of it. It's something that I've not really come across before; certainly not from just kind of passively being here ... I'm getting to hear of different things, like mentoring, but not the first aid thing, I haven't. I didn't know it existed'</i>	Moderate
Types of approaches	Kidger 2016 Narayana samy 2018	Employees from the public sector (including secondary schools), the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received support from MHFAs.	There were various approaches to accessing MHFA's reported, with some being formally managed and others taking place very informally. Most MHFAs reacted to approaches by colleagues seeking support, but in some cases, MHFA s took a proactive approach, actively looking out for colleagues who may be in need of support.	<i>'So on the mental health pages on X there is access to this one particular person who deals with it, so they would then contact that person and they will have a list of first aid(ers) to kind of match up people. Kind of like a really weird dating [service] '</i> <i>"People do just say informally in the corridor have you got 5 mins can we have a chat and you sort of work out whether it's dire and they need that chat now, or you sort of say well could you come in half an hour and I can give you some time".</i>	Moderate
Roles and	Narayana samy 2018	Employees from the public sector	Participants who were trained as MHFAs discussed	<i>'He'd asked me to go to his office. He had quite a few sort of personal</i>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
Boundaries		the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received support from MHFAs.	the role and their responsibilities. They were clear that having undertaken the training did not make them a professional in mental health and that their role was to listen and signpost people to other sources of support. Some highlighted the need to set boundaries, such as not giving personal contact details and offering support in working hours only. Others talked about the need to balance their personal safety with maintaining privacy and confidentiality.	<i>issues. However, the girls were worried because they didn't know where I was. And I said I was on mental health work and that was enough for me, but they were concerned because if anything had happened, they didn't know where I was. And I said I can't tell you where I am because it's confidential '</i>	
Impact of Mental Health First Aiders					
Improved staff knowledge and confidence to help.	Kidger 2016 Narayana samy 2018	Employees from the public sector (including secondary schools), the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received support from MHFAs.	Some participants reflected on the impact of training with some commenting how it had impacted on them personally in terms of improving their knowledge and their confidence to offer help.	<i>"The way I listen I think is a bit different, because of the training you suddenly think oh there's something, she's not just talking to me about how her husband broke her favourite plate it's something below, there's something else there".</i> <i>'I feel a lot more confident in [signposting] now. When I encountered the first one, it was actually prior to my training, so it was a little bit, yeah, I was upset actually because I didn't know. I couldn't do it '</i>	Moderate
Providing a spectrum of support	Kidger 2016 Narayana samy 2018	Employees from the public sector (including secondary schools), the	Participants highlighted various types of support they had provided as MHFA's. this ranged from being a	<i>"Often people just really do need somebody to listen to them and spend a little bit of time and care over what's going on for</i>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
		<p>private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received support from MHFAs.</p>	<p>‘sounding board’, to signposting people to further support, to dealing with specific incidents such as someone having a panic attack. In some cases, MHFA had been able to help people outside of work as well as at work.</p>	<p><i>them. You don’t necessarily need a resolution”.</i></p> <p><i>“I suggested to her to see a GP, and it’s a long-term sort of process of recovery but we had a long chat on the phone and she could not cope anymore, she said “I cannot be in school anymore”.</i></p> <p><i>‘I had a colleague in a different department who was talking at the meeting the other day about how she’d approached somebody who came into her office having a fullblown panic attack and who’d then started also self-harming. And she’d been called because she was the Mental Health First Aider in the department and over a 40- minute period she managed to get him to calm down and resolve the situation.’</i></p>	
<p>Raising awareness and encouraging change in organisational culture and /or practice</p>	<p>Kidger 2016 Narayana samy 2018</p>	<p>Employees from the public sector (including secondary schools), the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received</p>	<p>The MHFA training was also reported to have an impact in terms of raising organisational awareness of mental health and in some cases, changing the organisational culture and/or practice around mental health.</p>	<p><i>“I think it sends a really big message out to staff in general, they’re seeing posters saying a message which is we care about you, there is a network there for you if you need it”.</i></p> <p><i>‘And I think the biggest impact was seeing how it was dealt with this time, which must be I think five years after that initial, the awful one basically, But the difference this time, their manager had completed the two-day training. And they’re now back in work in a way</i></p>	<p>Moderate</p>

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
		support from MHFAs.		<p><i>that I would never have expected them, and to be able to come back, they've been supportive, they've been supported, plans have been put in place at the level of understanding about what the person is managing and, you know, it's just remarkable'.</i></p> <p><i>... having that group of people ... who basically put their hands up and said I'm interested in mental health and I'm interested in helping people who might have an issue of whatever magnitude, suddenly means it's a bit more in the open'.</i></p>	
Measuring and monitoring success of Mental Health First Aiders					
Challenges to monitoring	Narayana samy 2018	<p>Employees from the public sector the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received support from MHFAs.</p>	<p>In some organisations, MHFA interactions were monitored, either formally or informally. However, some participants felt this inappropriate due to concerns over confidentiality and potentially deterring people from using MHFAs.</p> <p>Others noted potential benefits of recording selected information, to monitor how the service is used and share best practice, with some arguing for MHFA monitoring being treated in the same way as physical first aid. Others noted that it would be intrusive to</p>	<p><i>'I wasn't going to go and put it down anywhere, because of the risk of it leaking, as it were. And we don't have a system, we don't have any system – well, we've got a database where if somebody has an accident or an injury, all that information goes on there, and any investigation goes on there. But we don't have the same thing for anybody who's raised a mental health issue ... If we did that and we did start recording things, I think that would discourage people from actually coming forward'.</i></p> <p><i>'...So given that we are supposed to be combating stigma, you could argue that you should have the exact</i></p>	Moderate

Review theme and subthemes	Studies contributing	Informants	Summary	Supporting statements	CERQual – confidence in the evidence
			follow up on outcomes.	<i>same requirements around Mental Health First Aid'</i>	
Challenges to measuring success.	Narayana samy 2018	Employees from the public sector the private and the third sector. Includes employees who had been trained as Mental health first aiders, (MHFAs) and some who had received support from MHFAs.	Measuring the success and effectiveness of MHFAs was seen as challenging, with few objective methods for doing so. Those used tended to be based on anecdotal evidence, general indicators such as staff wellbeing, or on sickness absence data. In addition, it was not always possible to attribute improvements to the MHFA specifically.	' <i>You need real-time feedback from people who've actually had that interaction with a Mental Health First Aider, which I actually don't know myself who has.</i> ' ' <i>You could look at actually how many people are off sick with mental health – because you could argue that were my department to have been much better, they might have recognised the signs that I was struggling long before it became at the point where actually I couldn't work anymore'</i>	Moderate

For GRADE-CERQual table see appendix F.1.2

Mixed methods

Quantitative evidence from a single RCT (Mainsbridge 2020) showed that microbreaks were effective in reducing job stress. This agrees with qualitative evidence from a single study (Hall 2018) that showed that breaks were seen as beneficial to employees, as they provided GPs with the opportunity to socialise with colleagues, meet physical needs and have a few minutes respite. The quantitative evidence did not show a difference for the outcome of mental wellbeing, and the qualitative evidence does not explain why this is the case. The qualitative evidence highlighted that scheduling lunch breaks was not generally seen as feasible, however, due to the nature of the microbreaks intervention, this was not addressed in the quantitative study.

Qualitative evidence from a single study (Hall 2018) showed that participants found social support, including peer to peer support, useful for preventing burnout. Quantitative evidence from a single study (Im 2016) found peer support was beneficial for improving mental wellbeing, however, it did not improve outcomes of job stress or job satisfaction. From the qualitative evidence, participants suggested that buddying and mentoring systems may be beneficial, however, it is unclear whether the participants have engaged in a formal peer support intervention, such as that explored in the quantitative evidence. The qualitative evidence also did not indicate whether a peer support system would improve overall mental wellbeing or job satisfaction.

Qualitative evidence from a single study (Hall 2018) showed that participants felt that it was important to maintain awareness of the risk of burnout. Three studies explored the effectiveness of two separate interventions: a digital stress prevention intervention

(Havermans 2018) and a health promotion programme that included elements of stress reduction and prevention (1 RCT and 1 non-RCT). The quantitative evidence did not show any improvement in outcomes of job stress for either the digital stress prevention intervention, or the health promotion, and did not show any improvement in the outcome for quality of life for the health promotion intervention. The qualitative evidence showed participants suggested that awareness of burnout could be achieved externally at the training stage, and it may be that training would have been more effective if delivered pre-deployment. From the qualitative evidence, participants also suggested that awareness of the risk of burnout could be maintained through discussions and meetings, which was not explored in the qualitative evidence.

Quantitative evidence around care pathways and IT support interventions are examples where interventions have been tailored to specific interventions in what appears to be a non-participatory manner. One cluster-RCT (Deneckere 2013) studied a care pathway intervention that aimed to improve organisational performance by strengthening relationships and co-ordination among team members, and found that this intervention improved job stress and work climate. One non-RCT (Engstrom 2005) found that changing the work environment to support care staff using IT had a positive effect on job satisfaction and quality of life, but had no significant effect on job stress. One qualitative study (Karanika-Murray 2018) reported on the barriers and facilitators to leadership engagement in an organisational intervention that sought to support work engagement and influence retirement intentions in two organisations. Qualitative evidence suggested factors that could facilitate effective leader engagement, which may improve outcomes. The qualitative evidence also suggested barriers to leader engagement which could reduce effectiveness of interventions. It is not clear from the quantitative evidence whether these barriers and facilitators were considered in the quantitative study interventions, however, these may have affected the effectiveness of the interventions. The qualitative evidence explored the views of leaders, which were not specifically measured in the quantitative evidence, as these studies measured the outcomes of all employees. Similarly, the qualitative evidence did not address the acceptability of the intervention for the whole workforce.

Quantitative and qualitative studies explored the use of mental health first aid. Quantitative evidence from one RCT and two cRCTs showed that mental health first aid had no effect on mental wellbeing or mental health symptoms for all employees including those that did not take part in the training. The qualitative evidence (taken from 3 studies) highlights the views of those receiving the training, the trainers, and those who have received support from mental health first aiders. Qualitative evidence highlighted issues that could have affected whether employees accessed support from mental health first aiders, which could have reduced the effectiveness of the intervention. These included the pressure of work, and concerns around distracting mental health first aiders from work; a lack of private space and concerns around confidentiality; and a lack of awareness of mental health first aiders being available in the organisation. The qualitative also highlighted barriers to becoming a mental health first aider, which included concerns around time and work pressures, the timing of the training, and attitudes towards mental health. The quantitative evidence did show that mental health first aid increased mental health literacy, which agrees with qualitative evidence that showed that the intervention improved staff knowledge and confidence to help others, and in some cases raised organisational awareness of mental health and changed the organisational culture and/or practice around mental health.

The qualitative evidence was comprehensive, and explored the evidence provided in the qualitative studies. The qualitative evidence highlighted barriers to becoming a mental health first aider, which included concerns around the time required to conduct the training and provide support, and the quantitative evidence did not explore whether being a mental health first aider would have a negative impact on mental wellbeing or job stress outcomes of those who did the mental health first aid training.

Qualitative evidence explored a coaching and mentoring intervention, which was not covered in any of the quantitative evidence. Quantitative evidence also explored some interventions that were not covered in the qualitative evidence, including job crafting, participatory interventions, leadership development, civility interventions, PsyCap, STAR, team reflexivity, employee assistance programmes, and combination approaches such as leadership development and employee wellness, participatory and lifestyle interventions, and participatory and support group interventions.

Economic evidence statement

- No published cost effectiveness studies were identified.
- One cost-consequences analysis demonstrated scenarios in which mental health interventions are cost saving and scenarios in which they are not. The results depended on a myriad of factors and, as such, the analysis could not produce generalisable results. The model is intended to be used by decision makers to generate bespoke results, specific to their workplace. The analysis was assessed as directly applicable and with minor limitations.

1.1.11 The committee's discussion and interpretation of the evidence

1.1.11.1 The outcomes that matter most

The committee concluded that employee outcomes were of greater importance than employer outcomes. However, they recognised that there needs to be an incentive for the employer to encourage leadership buy-in, in order to pay for interventions. Therefore, the committee felt it was important to consider employer outcomes in cases where they improve in line with employee outcomes. Common studied employee outcomes were mental wellbeing, job stress and mental health symptoms. Whilst relevant to more targeted interventions, the use of mental health symptoms outcomes may not be appropriate in the context of universal approaches, as the majority of employees in the workplace would be unlikely to present symptoms of mental health conditions. In cases where the outcome of mental wellbeing measured aspects of resilience, the committee were clear that interventions should not aim to improve employee wellbeing, without also addressing any psychosocial work stressors that may cause poor mental wellbeing. Work climate was also reported as a post hoc outcome.

1.1.11.2 The quality of the evidence

The evidence came from 7 RCTs, 16 cRCTs and 20 non-RCTs conducted before the COVID pandemic. GRADE profiling showed a range in the quality of evidence from very low to high. Most of the evidence was either low or very low quality, and the main reasons for downgrading were due to concerns over risk of bias (mainly due to self-reported outcomes and missing outcome data), inconsistency (percentage of heterogeneity $\geq 50\%$), and imprecision (95% confidence intervals of the pooled studies crossed the line of no effect). Where evidence was presented for cRCTs, sample sizes have not been adjusted, as outcomes were not pooled with individually randomised controlled trials; this may have an impact on precision and consequently certainty in the evidence for these studies. All of the quantitative studies identified addressed review question 1.1, and no studies were identified that addressed review question 1.2. Due to a lack of evidence around review question 1.2, the committee drafted a research recommendation around what tools can be used to identify employees at risk of poor mental wellbeing (see evidence review C).

Studies were from a range of countries including the UK, Australia, Belgium, Canada, China, Denmark, Finland, Greece, Japan, the Netherlands, Norway, South Korea, Sweden,

Switzerland, and the US. The committee commented that much of the evidence had been collected from countries with a strong culture of research in this area, making the findings credible and robust. A large proportion of the evidence came from studies conducted in large organisations in the public sector. This is of some concern, especially when considering the cost of interventions to SMEs. Mechanisms for SMEs to access interventions were discussed in the meeting.

Qualitative evidence was obtained from 6 UK studies. GRADE-CERQual profiling showed mostly moderate certainty in confidence of the evidence, with some evidence showing low certainty. Reasons for downgrading were primarily due to concerns with methodological limitations, as well as some concerns with adequacy and relevance.

Six qualitative studies were identified, where 3 of the studies reported on mental health first aid, one study focused on strategies used to improve wellbeing in GPs, one study investigated coaching and mentoring, and one study investigated leader engagement in an organisational intervention that sought to support work engagement and influence retirement intentions. These studies identified barriers and facilitators to implementation of interventions, as well as the views of those who took part. Important themes included the importance of senior management buy-in and balance in seniority, gender, and job role for mental health first aiders. Themes such as lack of time and work pressures, and importance of raising organisational awareness of mental wellbeing were also covered.

1.1.11.3 Benefits and harms

The studies reported that the interventions showed either a benefit or no difference to the measured outcomes, and crucially none of the interventions showed any harm.

The committee concluded that there was evidence to discuss interventions involving employee consultation (for example job crafting and participatory approaches) as well as top-down approaches that were tailored to specific workplaces or situations (for example care pathways and IT support). The evidence was not always clear on whether any workplace changes were implemented in cases of employee consultation; and the committee discussed that this is a valuable consideration as such interventions may have a negative impact if employees feel that they are not being listened to.

Low and very low-quality evidence from studies looking at job crafting interventions did not find any effect on the outcomes of mental wellbeing, job stress, job satisfaction, productivity, or mental health symptoms. The committee discussed job crafting and noted that while it is a universal intervention, it works at an individual level and is driven by the employee. It is also important that recommendations from a job crafting exercise are followed up and decisions communicated clearly to employees. This may also be problematic where individual changes are challenging or unfeasible to implement. The committee also agreed that the job crafting intervention studies were implemented in a group setting and this may impact on their effectiveness as features of an individual's job redesign, may not be acceptable to other members of the group. The committee also discussed that job crafting is more suited to roles that are highly autonomous and so may not be suited to some occupations where highly autonomous roles are not the norm. The committee heard expert testimony that suggested that organisations can improve the mental wellbeing of their employees by allowing individuals to manage the demands and resources associated with their work. Therefore, the committee did recommend that employers should involve employees in identifying and minimising sources of stress at work, and cross-linked to the [section on job design in NICE's guideline on workplace health: management practices](#) [rec 1.4.1].

Although job crafting works through a mechanism of change that features stress reduction, the intervention may not address factors such as bullying or poor communication within the organisation and thus may have little effect on the work culture. Therefore, the committee recommended that organisations foster a supportive work environment by developing

policies, processes, and ways of working with staff that are supportive and inclusive [recs 1.1.4 and 1.2.2].

Low and very low-quality evidence from studies looking at participatory interventions did not find any effect on the outcomes of mental wellbeing, job stress, mental health symptoms, work climate, job satisfaction, and productivity. Evidence around the outcome of absenteeism was mixed, where a single RCT that was high quality found an improvement in absenteeism, whereas a single non-RCT that was very low quality found no difference in absenteeism.

The committee looked favourably on participatory approaches, where employees work together to develop solutions to improve psychosocial job stressors. The committee discussed how, when looking at the evidence, it was not always clear whether any benefit was as a result of improved communication and working together to develop a plan, or whether it was the result of the implemented changes themselves. This was reflected in the evidence, where there was variability in the effects of the participatory interventions. As with job crafting, the extent to which the resulting changes are implemented is important. For example, in one study where there was an improvement in the outcomes of job stress and absenteeism (Bond 2008) the committee noted that 1-to-1's with line-managers were more frequent after the intervention and that work patterns also changed from a 'two hour cycle' to a 'full day cycle' which gave employees more flexibility around when to take lunch and also to schedule tasks. The committee also considered more structured forms of participatory interventions, for example, team reflexivity which was comprised of end of shift debrief and discussion of the shift's events, where very low evidence found that the intervention may be effective in reducing job stress when compared with team building.

The committee heard expert testimony around participatory organisational interventions. Following expert testimony, the committee discussed that the way in which participatory interventions are delivered is important, and that organisations need to understand their staff, work climate, and environment to assess any needs. The committee also discussed that implementation fidelity is important, and a key driver of success. Therefore, the committee did recommend that organisations should work with employees to minimise sources of stress at work [rec 1.4.1] and when doing so, to tailor this process to the organisation [rec 1.4.3]. The committee also recommended that organisations refer to existing guidance (for example Health and Safety Executive Management Standards for work-related stress, and Mindful Employer) in order to improve outcomes [rec 1.4.4].

Low quality evidence indicated that mental health first aid is likely to improve mental health literacy, however very low-quality evidence did not find that the intervention had any effect on mental wellbeing or mental health literacy. These findings were consistent with the committee experience of this intervention, where they can improve mental health literacy. However, the committee noted that mental health first aid can be expensive, and the evidence did not show that it has any effect on mental wellbeing; therefore, they chose not to make a recommendation around mental health first aid. The committee discussed the popularity of mental health first aid, and the variation in the duration of courses available from different providers. The committee also referred to a current Cochrane review currently in development, that is looking at mental health first aid as a tool for improving mental health and wellbeing. The committee were also aware of an additional ongoing UK-based study (EMPOWER) in this area.

Very low-quality evidence from a single study looking at a leadership intervention did not find that the intervention had any effect on mental wellbeing, mental health symptoms, job satisfaction, work climate, or job stress. Despite the lack of improvement in outcomes for leadership interventions, the committee were confident that management buy-in is important for promoting the wellbeing of employees. This was further supported by moderate confidence qualitative evidence that showed that mental health first aid was valued and more likely to be effective when supported by senior management. The committee also recommended that this guideline should cross reference NICE's guidance on Workplace

health: management practices [NG13] [section 1.6 \(senior leadership\)](#). Topic experts also cited the Stevenson/Farmer Review, which provides an evidence-based whole settings approach to improving mental wellbeing, including the importance of leadership, culture and effective people management. Therefore, the committee chose to include ensuring active leadership support and engagement in how to foster a workplace that supports mental wellbeing [rec 1.2.1].

Evidence was presented on several interventions that were tailored to the organisation. These interventions included ‘care pathways’ (which involved a reorganisation of processes), where moderate evidence from a single study showed an improvement in job stress and work climate; changes to shift rotations, where moderate quality evidence from a single study showed an improvement in job stress; increased IT to support staff in a residential care setting, where very low quality evidence from a single study indicated improvements in job satisfaction and quality of life, but no evidence of improvement for job stress; and a civility intervention, where very low quality evidence from a single study indicated no difference in mental wellbeing, job stress, job satisfaction, and work climate, but an improvement in absenteeism. The committee concluded that these interventions were generally effective as they worked through a process of using a tailored intervention to help ‘fix’ an identified problem or need in the workplace. The committee concluded that organisations could thus follow a process to identify problems or needs within the workplace, for example staff surveys or engagement with employee representatives, and then use tailored evidence-based methods to address these [rec 1.4.5].

Moderate quality evidence from a single study indicated that peer support interventions are likely to improve outcomes of mental wellbeing, however, low quality evidence indicated that the evidence did not find any effect on the outcomes of job stress and job satisfaction. The committee discussed the mechanism of change of improved support networks and communication and identified peer support as an effective intervention within this. This was supported by low certainty qualitative evidence, that suggested social support was helpful in preventing burnout. Therefore, the committee recommended that employers encourage and facilitate peer support [rec 1.2.1]. The peer support intervention presented in the quantitative evidence provided a platform for peer support and did not provide any training for mentors. The committee discussed the role of mentor training and how this can be formalised as part of peer support interventions. The committee were also mindful of the fact that for the intervention in the quantitative evidence, dedicated time was provided by the organisation to support peer support activities and this process would also demonstrate the organisations commitment to a supportive and positive workplace climate and environment.

Very low-quality evidence from a single study indicated that employee assistance programmes (EAP) may be effective in reducing absenteeism, however, no effect was found on the outcomes of presenteeism and workplace distress. The committee heard expert testimony that organisations can access free or low-cost employee assistance schemes such as Mindful Employer plus or occupational health services, which may be suitable for smaller businesses. Due to the lack of evidence around EAP, the committee chose a consider recommendation around providing employees with free access to an employee assistance programme and occupational health services [recs 1.4.6 and 1.11.5]. The committee also recognised the lack of evidence around EAP, and therefore drafted a research recommendation to address this.

Moderate quality evidence from a single study indicated that microbreaks, where participants were prompted to take movement breaks after 60 minutes of continuous work, were effective in improving mental wellbeing and job stress outcomes in public sector employees with primarily desk-based jobs. High and moderate quality evidence from a single study indicated that a structured reading materials-based psychological capital intervention program was effective in improving mental wellbeing, but not job stress, respectively. The committee chose not to recommend these interventions as these were single-study analyses, and therefore they were not certain as to the effectiveness of these interventions.

Low and very low-quality evidence showed no benefit in outcomes for the following interventions: digital stress prevention, health promotion, STAR, combined leadership and employee wellness, combined participatory and lifestyle, and combined participatory and support group. Therefore, the committee chose not to recommend these interventions.

The committee discussed the importance of preventing poor mental wellbeing in the workplace [rec 1.1.2], which was supported by expert testimony. The committee discussed how organisational-level approaches play an important role in preventing poor mental wellbeing, and that these approaches should form the foundation of a strategic approach to mental wellbeing in the workplace [rec 1.1.1]. The committee heard expert testimony that it was a legal obligation for employers of all sizes to carry out a psychosocial risk assessment for each role (and record it if they have more than 5 employees) under the [Health and Safety Act 1974](#). The committee discussed that this would be a good opportunity for employers to identify risks to employees' mental wellbeing, and take steps to reduce stressors [rec 1.1.4]

In addition to the interventions reported in the evidence review, the committee also discussed the importance of workplace policies that support a positive, organisational-wide climate and culture, for example, anti-bullying, work-life balance, grievance processes, confidentiality, equality considerations, and remuneration/redundancy [rec 1.2.2]. The committee also discussed how workplaces can also use workplace accreditations and charters, such as [workplace wellbeing charter](#), as, to improve organisational climate and culture [rec 1.4.2]. The use of workplace accreditations and charters was also supported by expert testimony, and the committee drafted a recommendation for SMEs that they could think about signing up to the [Mental Health at Work Commitment](#). The committee also highlighted that organisations can refer to existing guidance on stress reduction, such as HSE's Management standards for work related stress and to signpost to other sources of support including HSE/CIPD/IIP Line Management Competencies for minimising workplace stress [recs 1.3.1 and 1.3.3]. This was supported by expert testimony that highlighted that many organisations wanted a curated list of resources to help them improve mental wellbeing in the workplace. Based on expert testimony, the committee also recommended the [Mental Health at Work website for SMEs to provide them with curated resources and toolkits \[rec 1.11.2\]](#).

Most of the evidence presented was from large organisations that have the resources to access interventions in an efficient and affordable manner, for example via in-house services or through outside providers. The committee discussed various ways in which SMEs could access services, including by engaging with local authority, local enterprise partnerships (LEPs), DWP and other external agencies such as chambers of commerce, to access support via 'workplace wellbeing' and 'good employment' charters [rec 1.11.4].

Topic experts also provided evidence that local authorities have existing and emerging powers to facilitate and enable workplaces to support health and wellbeing. This is especially relevant for SMEs who may not have the resources to support these recommendations. PHE guidance suggests that this can be achieved through engagement between local authorities and other parties such as LEPs, evolution partners, health and wellbeing boards (HWBs), employers, employees, NHS CCGs and the voluntary sector [rec 1.11.4]. Therefore, the committee chose to draft recommendations for local and regional authorities on how they can help organisations improve mental wellbeing in the workplace, including offering support to local employers to help them improve the mental wellbeing of their employees [rec 1.10.6] curating or working with local business support organisations to list sources of support for employers and employees [rec 1.10.7], and identifying and addressing local barriers and facilitators to employer engagement with local mental wellbeing at work initiatives [rec 1.10.5]. These recommendations were also based on expert testimony that described how a multi-modal approach is needed, which involves cocreation with employers [rec 1.10.2] and public health campaigns to raise the importance of mental wellbeing at work [rec 1.10.4]. The committee discussed that mental health should be seen on par with physical health, and

therefore mental wellbeing at work should be integrated into public health activities and strategies [rec 1.10.3].

The committee also heard expert testimony around an initial (trial) version of Thrive at Work, where the use of fiscal incentives to improve employers' uptake of mental was tested (results of the trial currently being evaluated). Consequently, the committee drafted a recommendation that local and regional authorities could explore and evaluate the value of incentives, which would not necessarily need to be financial, to promote uptake of support and accreditation [rec 1.10.8]. The committee also highlighted that local and regional authorities have ethical frameworks in place, and a duty under the [Social Value Act](#) to consider wider social, economic, and environmental factors during procurement. Therefore, the committee recommended that local and regional authorities should use this as a way to improve mental wellbeing more widely by considering how organisations in their supply chains value job quality and mental wellbeing during procurement [rec 1.10.9]. Topic experts suggested highlighting other resources including the [Health, work and health related worklessness](#) report, published by PHE and the LGA, and The Association of Directors of Public Health's report [Policy position: living and working well](#).

The committee also discussed that is important for organizations to monitor and evaluate any support that they provide, as this information would be important to feed back into their overall strategy around mental wellbeing [rec 1.1.6]. The committee also highlighted that this should be done using validated measures of mental wellbeing [rec 1.1.7].

1.1.11.4 Cost effectiveness and resource use

There was no published evidence on the cost effectiveness of universal organisational level approaches. However, based on their expertise and the evidence of effectiveness the committee agreed these types of interventions are a vital component of a broad strategy to address mental wellbeing in the workplace. With that in mind, the committee thought these interventions should be considered for inclusion in any further economic analyses. They also agreed it was crucial to prioritise impacts on employees wellbeing as well as any impacts on employers.

With that in mind a generalised model was built to explore the impact of mental wellbeing interventions at work over a one-year time horizon from the employer perspective. A wider perspective capturing employee outcomes was also incorporated in the model in the form of a cost-consequences analysis. The latter was necessary due to an absence of quantitative data that could be used in an economic analysis.

The committee noted that interventions could be cost saving for the employer but that the results varied greatly by key model inputs such as the cost and effectiveness of the intervention as well as the cost of absenteeism, presenteeism and staff turnover.

The committee also noted that employee outcomes could be positive or negative or a combination of the two. For positive outcomes they considered the model may have underestimated the overall benefits whereas for negative outcomes it may have overestimated the total benefit. In addition, they were mindful that some negative outcomes can be difficult to interpret e.g. an increase in incidence might indicate an improvement in the organisational environment where employees are able to discuss issues and seek help without judgement. Nevertheless, the committee believed it crucially important that employers take account of any potential adverse consequences in deciding whether to fund an intervention. They highlighted that employers have a legal duty to properly address mental health issues – that is to promote mental wellbeing and prevent ill mental health.

1.1.12 Recommendations supported by this evidence review

This evidence review supports recommendations 1.1.2, 1.1.4, 1.1.6 – 1.6.7, 1.2.1 – 1.2.2, 1.3.1, 1.3.3, 1.4.1 – 1.4.6, 1.10.2 – 1.10.9, 1.11.2, 1.11.4 – 1.11.5, and the research recommendation on Supportive work environment, Organisational-level approaches for all organisations, Addressing study reporting, Supportive work environment and Identifying people at risk of poor mental wellbeing. Other evidence supporting these recommendations can be found in the evidence reviews on [universal approaches for managers: Review B](#); [targeted organisational level approaches: Review C](#); [individual universal approaches: Review D](#); and [barriers and facilitators to the implementation and delivery of interventions to improve and protect mental wellbeing at work: Review F](#).

1.1.13 References

- Arapovic-Johansson, Bozana Wahlin, Charlotte Hagberg, Jan Kwak, Lydia Bjorklund, Christina Jensen, Irene (2018); Participatory workplace intervention for stress prevention in primary health care. A randomized controlled trial; EUROPEAN JOURNAL OF WORK AND ORGANIZATIONAL PSYCHOLOGY; 2018; vol. 27 (no. 2); 219-234
- Barrech, Amira, Seubert, Christian, Glaser, Jurgen et al. (2018) Can a workplace leadership intervention reduce job insecurity and improve health? Results from a field study. International archives of occupational and environmental health 91(5): 547-557
- Bachkirova, Tatiana; Arthur, Linet; Reading, Emma; Evaluating a coaching and mentoring programme: Challenges and solutions.; International Coaching Psychology Review; 2015; vol. 10 (no. 2); 175-189
- Biggs, Amanda; Brough, Paula; Barbour, Jennifer (2014) Enhancing Work-Related Attitudes and Work Engagement: A Quasi-Experimental Study of the Impact of an Organizational Intervention. International Journal of Stress Management 21: 43-68
- Bond, Frank W; Flaxman, Paul E; Bunce, David (2008) The influence of psychological flexibility on work redesign: mediated moderation of a work reorganization intervention. The Journal of applied psychology 93(3): 645-54
- Bourbonnais, Rene, Brisson, Chantal, Vinet, Alain et al. (2006) Effectiveness of a participative intervention on psychosocial work factors to prevent mental health problems in a hospital setting. Occupational and Environmental Medicine 63(5): 335-342
- Chen, Jingqiu, Bamberger, Peter A, Song, Yifan et al. (2018) The effects of team reflexivity on psychological well-being in manufacturing teams. Journal of Applied Psychology 103(4): 443-462
- Demerouti, Evangelia, Xanthopoulou, Despoina, Petrou, Paraskevas et al. (2017) Does job crafting assist dealing with organizational changes due to austerity measures? Two studies among Greek employees. European Journal of Work and Organizational Psychology 26(4): 574-589
- Deneckere S, Euwema M, Lodewijckx C et al. (2013) Better interprofessional teamwork, higher level of organized care, and lower risk of burnout in acute health care teams using care pathways: a cluster randomized controlled trial. Medical care 51(1): 99-107
- Dollard, Maureen and Gordon, Jacqueline (2014) Evaluation of a Participatory Risk Management Work Stress Intervention. International Journal of Stress Management 21: 27
- Dubbelt, Lonneke; Demerouti, Evangelia; Rispens, Sonja (2019) The value of job crafting for work engagement, task performance, and career satisfaction: Longitudinal and quasi-experimental evidence. European Journal of Work and Organizational Psychology 28(3): 300-314

- Engstrom, M, Ljunggren, B, Lindqvist, R et al. (2005) Staff perceptions of job satisfaction and life situation before and 6 and 12 months after increased information technology support in dementia care. *Journal of telemedicine and telecare* 11(6): 304-309
- Framke, Elisabeth, Sorensen, Ole Henning, Pedersen, Jacob et al. (2016) Effect of a participatory organizational-level occupational health intervention on job satisfaction, exhaustion and sleep disturbances: results of a cluster randomized controlled trial. *BMC public health* 16(1): 1210
- Framke, Elisabeth, Sørensen, Ole Henning, Pedersen, Jacob et al. (2016) Effect of a participatory organizational-level occupational health intervention on short-term sickness absence: a cluster randomized controlled trial. *Scandinavian Journal of Work, Environment & Health*: 192-200
- Fisher, Harriet; Harding, Sarah; Bell, Sarah; Copeland, Lauren; Evans, Rhiannon; Powell, Jillian; Araya, Ricardo; Campbell, Rona; Ford, Tamsin; Gunnell, David; Murphy, Simon; Kidger, Judi; Delivery of a Mental Health First Aid training package and staff peer support service in secondary schools: a process evaluation of uptake and fidelity of the WISE intervention.; *Trials*; 2020; vol. 21 (no. 1); 745
- Gilin Oore, D, Leblanc, D, Day, A et al. (2010) When respect deteriorates: incivility as a moderator of the stressor-strain relationship among hospital workers. *Journal of nursing management* 18(8): 878-888
- Gordon, Heather J, Demerouti, Evangelia, Le Blanc, Pascale M et al. (2018) Individual job redesign: Job crafting interventions in healthcare. *Journal of Vocational Behavior* 104: 98-114
- Grant, Adam M. Berg, Justin M. Cable, Daniel M. (2014); Job titles as identity badges: how self-reflective titles can reduce emotional exhaustion; *ACADEMY OF MANAGEMENT JOURNAL*; 2014; vol. 57 (no. 4); 1201-1225
- Hall, Louise H, Johnson, Judith, Heyhoe, Jane et al. (2018) Strategies to improve general practitioner well-being: findings from a focus group study. *Family practice* 35(4): 511-516
- Hansen, Elisabeth, Landstad, Bodil J, Gundersen, Kjell Terje et al. (2016) Leader-based workplace health interventions-A before-after study in Norwegian and Swedish small-scale enterprises. *International Journal of Disability Management* 11
- Hansen, Elisabeth; Landstad, Bodil J; Gundersen, Kjell Terje; Vinberg, Stig; Leader-based workplace health interventions-A before-after study in Norwegian and Swedish small-scale enterprises. {STUDY B}; *International Journal of Disability Management*; 2016; vol. 11
- Hansen, Elisabeth; Landstad, Bodil J; Gundersen, Kjell Terje; Vinberg, Stig; Leader-based workplace health interventions-A before-after study in Norwegian and Swedish small-scale enterprises. {STUDY A}; *International Journal of Disability Management*; 2016; vol. 11
- Havermans, Bo M, Boot, Cecile RI, Brouwers, Evelien Pm et al. (2018) Effectiveness of a digital platform-based implementation strategy to prevent work stress in a healthcare organization: a 12-month follow-up controlled trial. *Scandinavian journal of work, environment & health* 44(6): 613-621
- Hoek RJA, Havermans BM, Houtman ILD et al. Stress Prevention@Work: a study protocol for the evaluation of a multifaceted integral stress prevention strategy to prevent employee stress in a healthcare organization: a cluster controlled trial. *BMC public health* 18(1): 26
- Holman, D and Axtell, C (2016) Can job redesign interventions influence a broad range of employee outcomes by changing multiple job characteristics? A quasi-experimental study. *Journal of occupational health psychology* 21(3): 284-295

- Holman, David J, Axtell, Carolyn M, Sprigg, Christine et al. (2010) The mediating role of job characteristics in job redesign interventions: A serendipitous quasi-experiment. *Journal of Organizational Behavior* 31(1): 84-105
- Hulshof, Inge L; Demerouti, Evangelia; Le Blanc, Pascale M (2020); Providing Services During Times of Change: Can Employees Maintain Their Levels of Empowerment, Work Engagement and Service Quality Through a Job Crafting Intervention? *Frontiers in psychology*; 2020; vol. 11; 87
- Im, Sook Bin, Cho, Mi-Kyoung, Kim, Se Young et al. (2016) The Huddling Programme: effects on empowerment, organisational commitment and ego-resilience in clinical nurses - a randomised trial. *Journal of clinical nursing* 25(910): 1377-87
- Jorm, Anthony F, Kitchener, Betty A, Sawyer, Michael G et al. (2010) Mental health first aid training for high school teachers: a cluster randomized trial. *BMC psychiatry* 10: 51
- Karanika-Murray, Maria Gkiontsi, Dimitra Baguley, Thom (2018); Engaging leaders at two hierarchical levels in organizational health interventions: Insights from the intervention team; *INTERNATIONAL JOURNAL OF WORKPLACE HEALTH MANAGEMENT*; 2018; vol. 11 (no. 4); 210-227
- Kidger, Judi, Stone, Tracey, Tilling, Kate et al. (2016) A pilot cluster randomised controlled trial of a support and training intervention to improve the mental health of secondary school teachers and students - the WISE (Wellbeing in Secondary Education) study. *BMC public health* 16(1): 1060
- Le Blanc, Pascale M, Hox, Joop J, Schaufeli, Wilmar B et al. (2007) Take care! The evaluation of a team-based burnout intervention program for oncology care providers. *The Journal of applied psychology* 92(1): 213-27
- Leiter, Michael P, Laschinger, Heather K Spence, Day, Arla et al. (2011) The impact of civility interventions on employee social behavior, distress, and attitudes. *The Journal of applied psychology* 96(6): 1258-1274
- Leiter, MP, Day, A, Oore, DG et al. (2012) Getting better and staying better: assessing civility, incivility, distress, and job attitudes one year after a civility intervention. *Journal of occupational health psychology* 17(4): 425-434
- Linzer, Mark, Poplau, Sara, Grossman, Ellie et al. (2015) A Cluster Randomized Trial of Interventions to Improve Work Conditions and Clinician Burnout in Primary Care: Results from the Healthy Workplace (HWP) Study. *Journal of general internal medicine* 30(8): 1105-11
- Linzer, Mark, Sinsky, Christine A, Poplau, Sara et al. (2017) Joy In Medical Practice: Clinician Satisfaction In The Healthy Work Place Trial. *Health affairs (Project Hope)* 36(10): 1808-1814
- Lucas, Brian P, Trick, William E, Evans, Arthur T et al. (2012) Effects of 2- vs 4-week attending physician inpatient rotations on unplanned patient revisits, evaluations by trainees, and attending physician burnout: a randomized trial. *JAMA* 308(21): 2199-207
- Maes, S, Verhoeven, C, Kittel, F et al. (1998) Effects of a Dutch work-site wellness-health program: the Brabantia Project. *American journal of public health* 88(7): 1037-1041
- Mainsbridge, Casey Peter; Cooley, Dean; Dawkins, Sarah; de Salas, Kristy; Tong, Jiajin; Schmidt, Matthew Wade; Pedersen, Scott J (2020); Taking a Stand for Office-Based Workers' Mental Health: The Return of the Microbreak.; *Frontiers in public health*; 2020; vol. 8; 215

- Mattila, Pauliina, Elo, Anna-Liisa, Kuosma, Eeva et al. (2006) Effect of a participative work conference on psychosocial work environment and well-being. *European Journal of Work and Organizational Psychology* 15(4): 459-476
- McElligott, Deborah, Capitulo, Kathleen Leask, Morris, Diana Lynn et al. (2010) The effect of a holistic program on health-promoting behaviors in hospital registered nurses. *Journal of holistic nursing : official journal of the American Holistic Nurses' Association* 28(3): 175-185
- Moen, Phyllis, Kelly, Erin L, Fan, Wen et al. (2016) Does a flexibility/support organizational initiative improve high-tech employees' well-being? Evidence from the work, family, and health network. *American Sociological Review* 81(1): 134-164
- Moen, Phyllis, Kelly, Erin L, Lee, Shi-Rong et al. (2017) Can a flexibility/support initiative reduce turnover intentions and exits? Results from the work, family, and health network. *Social Problems* 64(1): 53-85
- Narayanasamy M, Geraghty J, Coole C, Nouri F, Thomson L, Callaghan P DA (2018) Mental health first aid in the workplace: A feasibility study.
- Olson, Ryan, Crain, Tori L, Bodner, Todd E et al. (2015) A workplace intervention improves sleep: results from the randomized controlled Work, Family, and Health Study. *Sleep health* 1(1): 55-65
- Richmond, Melissa K; Pampel, Fred C; Wood, Randi C; Nunes, Ana P (2017); The impact of employee assistance services on workplace outcomes: Results of a prospective, quasi-experimental study.; *Journal of occupational health psychology*; 2017; vol. 22 (no. 2); 170-179
- Sakuraya, Asuka; Shimazu, Akihito; Imamura, Kotaro; Kawakami, Norito (2020); Effects of a Job Crafting Intervention Program on Work Engagement Among Japanese Employees: A Randomized Controlled Trial.; *Frontiers in psychology*; 2020; vol. 11; 235
- Schelvis, Roosmarijn M. C. Wiezer, Noortje M. van der Beek, Allard J. Twisk, Jos W. R. Bohlmeijer, Ernst T. Hengel, Karen M. Oude (2017); The effect of an organizational level participatory intervention in secondary vocational education on work-related health outcomes: results of a controlled trial; *BMC PUBLIC HEALTH*; 2017; vol. 17
- Song, Zirui and Baicker, Katherine (2019) Effect of a Workplace Wellness Program on Employee Health and Economic Outcomes: A Randomized Clinical Trial. *JAMA* 321(15): 1491-1501
- Svensson, Bengt Hansson, Lars (2014); Effectiveness of Mental Health First Aid Training in Sweden. A Randomized Controlled Trial with a Six-Month and Two-Year Follow-Up; *PLOS ONE*; 2014; vol. 9 (no. 6)
- Uchiyama A, Odagiri Y, Ohya Y et al. (2013) Effect on mental health of a participatory intervention to improve psychosocial work environment: a cluster randomized controlled trial among nurses. *Journal of occupational health* 55(3): 173-183
- van den Heuvel, Machteld; Demerouti, Evangelia; Peeters, Maria C. W (2015); The job crafting intervention: Effects on job resources, self-efficacy, and affective well-being.; *Journal of Occupational and Organizational Psychology*; 2015; vol. 88 (no. 3); 511-532
- van Wingerden, Jessica; Bakker, Arnold B; Derks, Daantje (2017) The longitudinal impact of a job crafting intervention. *European Journal of Work and Organizational Psychology* 26(1): 107-119
- van Wingerden, Jessica; Bakker, Arnold B; Derks, Daantje (2016) A test of a job demands-resources intervention. *Journal of Managerial Psychology* 31(3): 686-701

Zhang, Xichao; Li, Yan-Ling; Ma, Shuang; Hu, Jing; Jiang, Li; A structured reading materials-based intervention program to develop the psychological capital of Chinese employees.; *Social Behavior and Personality: An International Journal*; 2014; vol. 42 (no. 3); 503-5

Appendices

Appendix A – Review protocols

Universal interventions

Field	Content
PROSPERO registration number	CRD42020178991
Review title (50 Words)	Universal organisational-level interventions for all employees to improve and promote mental wellbeing, and prevent poor mental wellbeing
Review question (250 words)	<p>1.1 What universal, organisational-level interventions, programmes, policies or strategies are effective and cost effective at:</p> <ul style="list-style-type: none"> promoting positive mental wellbeing? improving mental wellbeing? preventing poor mental wellbeing? <p>1.2 What interventions or strategies effectively and cost-effectively help employers and peers to recognise and engage employees who may require support for their mental wellbeing, or to identify periods of high risk within an organisation?</p> <p>1.3 For the following groups in relation to organisational-level targeted interventions, what are their views and experiences of what and why certain approaches may or may not work, and how it could be improved:</p> <ul style="list-style-type: none"> employees receiving them employers those delivering them?
Objective	<p>Quantitative</p> <p>To identify what universal interventions delivered at an organisational level are effective in:</p> <ul style="list-style-type: none"> promoting positive mental wellbeing improving mental wellbeing

Field	Content
<p>NB – this section does not appear in the submission on the Prospero system.</p>	<p>preventing poor mental wellbeing improving recognition of where support for mental wellbeing is needed at work. engaging employees who may require support.</p> <p><u>Qualitative</u> To understand the views and experiences (including acceptability of and barriers & facilitators to) of interventions delivered to all employees at an organisational level.</p> <p><u>Quantitative and qualitative</u> To examine whether the effectiveness and cost-effectiveness of interventions varies according to a range of factors including how the intervention is delivered and by whom, the study population, and the nature of the organisation.</p>
<p>Searches (300 words)</p>	<p>The following databases will be searched:</p> <ul style="list-style-type: none"> • Cochrane Central Register of Controlled Trials (CENTRAL) • Cochrane Database of Systematic Reviews (CDSR) • Embase • MEDLINE • Psycinfo • Econlit • Epistemonikos • ASSIA • HealthEvidence.org <p>Search strategies will be adapted to take account of the limitations of each database.</p> <p>The same search strategy will be used for questions 1-5 for this guideline, with all retrieved studies potentially being includable in each review.</p>

Field	Content
	<p>Searches will be limited by the use of validated filters as follows:</p> <p>Date : Studies published from 2007 to present (though included studies from the previous NICE guideline, PH22, will also be considered for inclusion)</p> <p>Language : English language</p> <p>Study design : RCT filter</p> <p>Search strategies</p> <p>OECD countries plus Brazil, China, Russia, India and South Africa</p> <p>Non-randomised controlled studies</p> <p>Searches will exclude the following publication types:</p> <ul style="list-style-type: none">• Editorials• news articles• Letters• Conference abstracts• “Notes”.• Other non-research publications <p><u>Other searches:</u></p> <p>Forwards and backwards citation searching will be carried out in Web of Science using any included studies or relevant systematic reviews as a starting point.</p> <p>The and Department for Work and Pensions research reports websites will also be browsed for relevant evidence</p> <p>The searches will be re-run 6 weeks before final submission of the review and further studies retrieved for inclusion.</p> <p>The full search strategies for MEDLINE database will be published in the final review.</p>

Field	Content
Condition or domain being studied (200 words)	Mental wellbeing in the workplace
Population (200 words)	<p><u>Quantitative and Qualitative</u> <u>Inclusion:</u></p> <ul style="list-style-type: none"> • Everyone aged 16 years or older in full or part time employment, including: • those on permanent, training, temporary or zero hours contracts • those who are self-employed. • volunteers <p><u>Qualitative only</u></p> <ul style="list-style-type: none"> • employers • those delivering the interventions. <p><u>Quantitative and Qualitative</u> <u>Exclusion:</u></p> <ul style="list-style-type: none"> • People who are not in any full or part time employment (as defined above) • Prisoners who engage in work activities • Inpatients in mental health institutions who engage in work activities. • Military personnel
Intervention (200 words)	<p><u>Inclusion:</u> <u>Quantitative and Qualitative</u> Organisational-level approaches delivered to an unselected population in addition to usual practice that aims to (at least one of):</p> <ul style="list-style-type: none"> • improve mental wellbeing. • promote positive mental wellbeing.

Field	Content
	<ul style="list-style-type: none"> • prevent poor mental wellbeing. • improve recognition of employees who may require support for their mental wellbeing. • increase engagement with employees who need support for mental wellbeing. • improve identification of periods of high risk within organisations. <p>Interventions may include approaches such as:</p> <ul style="list-style-type: none"> • changes to the physical workplace • changes to workplace climate and culture • implementation of relevant policies • consulting staff around culture and policy • offering opportunities for learning or professional development • reducing hierarchies within and across staff categories • training to improve awareness of the importance of promoting positive mental wellbeing and recognition of poor mental wellbeing at work and how to support others. • encouraging regular discussion among managers and employees about mental wellbeing • assessing employee mental wellbeing needs • assessing periods of high risk and identifying and managing psychosocial hazards <p>Interventions are eligible that are delivered in a workplace setting, or outside of a workplace where there is employer involvement in the intervention.(Employer involvement in the intervention may include the initiation, design, delivery, management, funding of, or signposting to, an intervention, including those delivered online or digitally.)</p> <p><u>Exclusion:</u> <u>Quantitative and qualitative</u></p> <ul style="list-style-type: none"> • Interventions targeted towards individuals or groups of individuals based upon their risk or experience of poor mental wellbeing or characteristics. • Interventions to increase physical activity. • Interventions delivered outside of work without workplace involvement or collaboration

Field	Content
Comparator (200 words)	<p><u>Quantitative</u> <u>Inclusion:</u> Usual practice (this may be called a control group or waiting list control group or other terms in the individual studies)</p> <p><u>Qualitative</u> Not applicable</p>
Types of study to be included (150 words)	<p><u>Inclusion:</u></p> <p><u>Quantitative</u></p> <ul style="list-style-type: none"> • Effectiveness studies that include one or more intervention and comparison groups including: • Systematic reviews (published in 2019 or 2020 to ensure currency) • Randomised controlled trials. • Non-randomised comparative studies. <p><u>Qualitative</u></p> <ul style="list-style-type: none"> • Studies with a qualitative component including focus groups and interview-based studies. • Mixed-methods studies will also be included provided they contain relevant qualitative data. <p><u>Exclusion:</u></p> <ul style="list-style-type: none"> • Correlation studies • Cross-sectional surveys • Case studies • Single-arm studies
Other exclusion criteria (no separate section for this to be entered on PROSPERO – it	<p><u>Quantitative and Qualitative</u></p> <ul style="list-style-type: none"> • Papers published in languages other than English.

Field	Content
gets included in the section above so within that word count)	<ul style="list-style-type: none"> • Studies not published in full (e.g. study protocols where no results are published, summary articles) • Studies published before 2007 will be excluded, except effectiveness studies that were included in the previous NICE guideline PH22. <p><u>Quantitative only</u></p> <ul style="list-style-type: none"> • Studies carried out in non- OECD and non- BRICS countries. <p><u>Qualitative only</u></p> <ul style="list-style-type: none"> • Studies carried out in non-UK countries
Context (250 words)	<p>Since NICE guideline PH22 Mental wellbeing at work was published in 2009, the nature of the workforce has changed in the UK. Increasing amounts of employees are on part-time, temporary or zero-hours contracts. The variations between workplaces and differences in the nature of employment are important to consider when looking at approaches to improve and protect employee mental wellbeing.</p> <p>Since 2009 there has been increasing recognition of mental wellbeing and how it is associated with the workplace and work outcomes. Experiences in the workplace can affect mental wellbeing positively and negatively.</p> <p>Good employee mental wellbeing is positive for employees and their employers. For example, better mental wellbeing and job satisfaction are associated with increased workplace performance and productivity.</p> <p>Poorer mental wellbeing however is associated with increased absenteeism and presenteeism and lost output costs the economy upwards of £74 billion annually.</p> <p>It is therefore important to implement interventions in the workplace to promote and improve mental wellbeing, and to prevent poor mental wellbeing amongst the workforces.</p>
Primary outcomes (critical outcomes) (200 words)	<p><u>Quantitative</u></p> <p>Employee outcomes</p> <ul style="list-style-type: none"> • Any measure of mental wellbeing (using objective measures and/ or validated self-report measures) • Job stress, burnout or fatigue (using objective measures and/ or validated self-report measures)

Field	Content
	<ul style="list-style-type: none"> • Symptoms of mental health conditions such as depression, anxiety, insomnia (using validated self-report measures) • Absenteeism • Presenteeism • Job satisfaction, engagement or motivation • Uptake of support services • Quality of life <p>Employer outcomes</p> <ul style="list-style-type: none"> • Productivity • Absenteeism • Presenteeism <p><u>Qualitative</u> Views and experiences regarding the intervention of:</p> <ul style="list-style-type: none"> • employees receiving the interventions. • those delivering the interventions. • employers
Timing	<p>Timing and measures:</p> <p><u>Quantitative</u> We will consider outcomes at any follow up. Priority will be given to the longest follow up time for an outcome.</p> <p>For interventions with a defined period of delivery (for example a training programme), the follow up period refers to the length of time since the delivery of the intervention was completed.</p> <p>For ongoing interventions with no specific completion point (for example the implementation of a new policy), the follow up period refers to the length of time since the intervention was implemented.</p>

Field	Content
	<p><u>Qualitative</u> We will consider outcomes at any time point following implementation.</p>
<p>Secondary outcomes (important outcomes) (200 words)</p>	<p><u>Quantitative</u></p> <ul style="list-style-type: none"> • Patient and public safety • Employee retention • Methods and levels of employee consultation and participation • Incidence of discrimination, ill-treatment • De-stigmatisation • Adherence to mental wellbeing policies • Mental health literacy, such as knowledge and awareness about mental wellbeing • Adverse effects or unintended consequences • Discrimination • Ill-treatment • De-stigmatisation • Policy implementation (presence or absence of an organisational policy) <p><u>Qualitative</u> Not applicable</p>
<p>Data extraction (selection and coding) (300 words)</p>	<p>All references identified by the searches and from other sources will be uploaded into EPPI-R5 and de-duplicated.</p> <p>This review will use the EPPI-R5 priority screening functionality. At least 60%-70% of the identified abstracts will be screened. After this point, screening will only be terminated if a pre-specified threshold is met for a number of abstracts being screened without a single new include being identified. This threshold is set according to the expected proportion of includes in the review (with reviews with a lower proportion of includes needing a higher number of papers without an identified study to justify termination) and is always a minimum of 250.</p>

Field	Content
	<p>A random 10% sample of the studies remaining in the database when the threshold is met will be additionally screened, to check if a substantial number of relevant studies are not being correctly classified by the algorithm, with the full database being screened if concerns are identified.</p> <p>10% of the abstracts will be reviewed by two reviewers, with any disagreements resolved by discussion or, if necessary, a third independent reviewer.</p> <p>The full text of potentially eligible studies will be retrieved and will be assessed in line with the criteria outlined above.</p> <p>A standardised EPPI-R5 template will be used when extracting data from studies (this is consistent with the Developing NICE guidelines: the manual section 6.4). Details of the intervention will be extracted using the TIDieR checklist in EPPI-R5.</p> <p>Outcome data will be extracted into EPPI-R5 as reported in the full text. Where appropriate, outcomes will be transformed from “as reported” into data we can use in the meta-analysis.</p> <p>Study investigators may be contacted for missing data where time and resources allow.</p>
<p>Risk of bias (quality) assessment (200 words)</p>	<p>Risk of bias will be assessed using the appropriate checklist as described in Developing NICE guidelines: the manual.</p> <p><u>Quantitative</u></p> <ul style="list-style-type: none"> • For systematic reviews, we will use the ROBIS tool. • For randomised controlled trials, we will use Cochrane Risk of Bias Tool 2.0. • For non- randomised controlled trials, we will use the ROBINS-I tool <p><u>Qualitative</u></p> <ul style="list-style-type: none"> • For qualitative studies we will use the CASP qualitative checklist

Field	Content
<p>Strategy for data synthesis (300 words)</p>	<p>Studies will be grouped according to the type of intervention as appropriate.</p> <p><u>Quantitative</u></p> <p>Where appropriate meta-analysis will be used, and data will be pooled within the categories above using a random effects model to allow for the anticipated heterogeneity. Dichotomous data will be pooled where appropriate and the effect size will be reported using risk ratios in a standard pair-wise meta-analysis. Continuous outcomes reported on the same scale will be pooled in a standard pair-wise meta-analysis using mean difference where possible. Continuous outcomes not reported on the same scale will be pooled using a standardised mean difference in a standard pair-wise meta-analysis.</p> <p>Methods for pooling cluster randomised controlled trials will be considered where appropriate. Unit of analysis issues will be dealt with according to the methods outlined in the Cochrane Handbook.</p> <p>Unexplained heterogeneity will be examined where appropriate with a sensitivity analysis based on risk of bias.</p> <p>Where appropriate, the quality or certainty across all available evidence will be evaluated for each outcome using an the ‘Grading of Recommendations Assessment, Development and Evaluation (GRADE) toolbox’ developed by the international GRADE working group http://www.gradeworkinggroup.org/</p> <p><u>Qualitative</u></p> <p>The key findings from the studies will be categorised into themes relevant to the review across all studies using a thematic analysis. Supporting quotations and summaries of data will be included.</p> <p>Where possible we will categorise groups views and experiences relating to acceptability into the following categories:</p> <ul style="list-style-type: none"> • affective attitude (how the participant feels about the intervention) • burden (perceptions about the amount effort required to participate)

Field	Content
	<ul style="list-style-type: none"> • perceived effectiveness • ethicality (whether the intervention fits within the participant’s value system) • intervention coherence (whether the participant understands the intervention) • opportunity costs for engaging. • self-efficacy to participate. <p>The quality or certainty across all available evidence will be evaluated for each outcome using the GRADE CERQual approach.</p> <p><u>Integration of data</u> As we have included different types of data from different sources as follows: Quantitative effectiveness data from intervention studies Qualitative View and experiences data related to interventions. an inductive convergent segregated approach will be undertaken to combine findings from each review. Where possible qualitative and quantitative data will be integrated using tables.</p> <p>Where quantitative and qualitative data comes from the same study, the technical team will present the qualitative analytical themes next to quantitative effectiveness data for the committee to discuss. different studies, the committee will be asked to interpret both sets of finding using a matrix approach for the committee discussion section.</p>
Analysis of sub-groups (250 words)	<p><u>Quantitative</u> Where evidence allows, subgroup analyses will be conducted. The following factors will be explored in any subgroup analyses:</p> <ul style="list-style-type: none"> • Gender • Age • Disability or other long-term physical or mental health condition status

Field	Content
	<ul style="list-style-type: none">• Socioeconomic status (e.g. type of industry: manual, semi-skilled, skilled).• Occupational groups or roles at increased risk of poor mental wellbeing• Work sector (voluntary, public, private)• Organisation size (micro, small, medium and large)• Type of employment contract (part-time, temporary, full-time, voluntary, training, zero-hours contracts)• Other groups for consideration listed in the EIA. <p><u>Qualitative</u> Not applicable</p>

Appendix B – Literature search strategies

Database strategies

Searches were run and re-run in Applied Social Science Index and Abstracts (ASSIA), Cochrane Central Register of Controlled Trials (CENTRAL) / Cochrane Database or Systematic Reviews (CDSR), Econlit, Embase, Epistemonikos, HealthEvidence.org, MEDLINE ALL and PsycINFO. Additional website browsing was undertaken (Department for Work & Pensions Research Reports, What Works Wellbeing Centre) with additional Reference harvesting (backwards citation searching) & forward citation searching undertaken. The ASSIA search undertaken is outlined as an example.

Database name: MEDLINE ALL

Original searches

Original searches

- 1 exp Occupational Stress/ (12210)
- 2 "Burnout, Professional"/ (11097)
- 3 Job Satisfaction/ (24227)
- 4 "job satisfaction".ti,ab. (8115)
- 5 (satisf* adj3 (work* or job*)).ti,ab. (11804)
- 6 work engagement/ (268)
- 7 (engage* adj3 (work* or job*)).ti,ab. (4632)
- 8 ((motivation or motivated) adj3 (work* or job*)).ti,ab. (2482)
- 9 or/1-8 (44936)
- 10 Absenteeism/ (8888)
- 11 absenteeism.ti,ab. (5473)
- 12 Presenteeism/ (259)
- 13 presenteeism.ti,ab. (1058)
- 14 Work Performance/ (716)
- 15 (work adj3 performance).ti,ab. (4840)
- 16 (job adj3 performance).ti,ab. (1826)
- 17 or/10-16 (18716)
- 18 wellbeing.ti,ab. (14101)
- 19 "well-being".ti,ab. (70539)
- 20 Mental Health/ (35700)
- 21 mental*.ti,ab. (336910)

- 22 Resilience, Psychological/ (5045)
- 23 Adaptation, Psychological/ (91995)
- 24 psych*.ti,ab. (782656)
- 25 or/18-24 (1118787)
- 26 17 and 25 (3957)
- 27 wellbeing.ti. (2658)
- 28 "well-being".ti. (12299)
- 29 exp *Stress, Psychological/ (80371)
- 30 stress.ti. (220203)
- 31 burnout.ti. (5697)
- 32 exp *Fatigue/ (15333)
- 33 fatigue*.ti. (25455)
- 34 tired*.ti. (581)
- 35 *Depression/ (68937)
- 36 (depression or depressed).ti. (106831)
- 37 *Anxiety/ (39891)
- 38 anxiety.ti. (47931)
- 39 *"Sleep Initiation and Maintenance Disorders"/ or *Sleep/ or *"Sleep Deprivation"/ (44654)
- 40 insomnia.ti. (6758)
- 41 sleep.ti. (85871)
- 42 productivity.ti. (9274)
- 43 exp *Efficiency/ (13386)
- 44 (confidence not "confidence interval").ti. (5174)
- 45 *self concept/ (24625)
- 46 *self efficacy/ (7866)
- 47 "self esteem".ti. (4036)
- 48 (mental adj9 (literacy or knowledge or attitude* or awareness or communicat* or skill* or competen* or uptake or "take-up")).ti. (2886)
- 49 ("quality of life" or "quality adjusted life" or qaly* or qald* or qale* or qtime*).ti. (66024)
- 50 *Quality of Life/ or *Quality-Adjusted Life Years/ (86097)
- 51 or/27-50 (714521)
- 52 employment/ or employment, supported/ (46007)
- 53 (employee* or employment or employed).ti,ab,jw. (409350)

- 54 Workplace/ (21696)
- 55 (work or worker* or workload*).ti,ab,jw. (1089406)
- 56 (workplace* or worksite*).ti,ab,jw. (41474)
- 57 occupational.ti,ab,jw. (162851)
- 58 (job or jobs).ti,ab,jw. (59058)
- 59 (organi?ations or organi?ational or company or companies or corporation*).ti,ab,jw. (182856)
- 60 personnel.ti,ab,jw. (70639)
- 61 exp occupational groups/ (582779)
- 62 profession*.ti,jw. (88636)
- 63 (staff or staffing).ti,ab,jw. (156931)
- 64 (colleague* or coworker*).ti,ab,jw. (36316)
- 65 "Occupational Diseases"/ (82525)
- 66 Job Satisfaction/ (24227)
- 67 Occupational Health/ (32403)
- 68 Occupational Health Services/ (10461)
- 69 "Personnel Staffing and Scheduling"/ (16823)
- 70 "Organizational Culture"/ (16981)
- 71 or/52-70 (2411691)
- 72 51 and 71 (103094)
- 73 wellbeing.ti,ab. (14101)
- 74 "well-being".ti,ab. (70539)
- 75 exp Stress, Psychological/ (126254)
- 76 stress.ti,ab. (697607)
- 77 burnout.ti,ab. (10098)
- 78 exp Fatigue/ (29157)
- 79 fatigue*.ti,ab. (90010)
- 80 tired*.ti,ab. (5537)
- 81 Depression/ (113329)
- 82 (depression or depressed).ti,ab. (372857)
- 83 Anxiety/ (77344)
- 84 anxiety.ti,ab. (178055)
- 85 "Sleep Initiation and Maintenance Disorders"/ or Sleep/ or "Sleep Deprivation"/ (67186)

- 86 insomnia.ti,ab. (19444)
- 87 sleep.ti,ab. (155689)
- 88 productivity.ti,ab. (54789)
- 89 exp Efficiency/ (34558)
- 90 (confidence not "confidence interval").ti,ab. (70839)
- 91 self concept/ (55303)
- 92 self efficacy/ (19258)
- 93 "self esteem".ti,ab. (19848)
- 94 (mental adj9 (literacy or knowledge or attitude* or awareness or communicat* or skill* or competen* or uptake or "take-up")).ti,ab. (12768)
- 95 ("quality of life" or "quality adjusted life" or qaly* or qald* or qale* or qtime*).ti,ab. (261257)
- 96 Quality of Life/ or Quality-Adjusted Life Years/ (194169)
- 97 or/73-96 (1923289)
- 98 *employment/ or *employment, supported/ (25579)
- 99 (employee* or employment or employed).ti,jw. (25336)
- 100 *Workplace/ (10847)
- 101 (work or worker* or workload*).ti,jw. (157895)
- 102 (workplace* or worksite*).ti,jw. (13038)
- 103 occupational.ti,jw. (104324)
- 104 (job or jobs).ti,jw. (14929)
- 105 (organi?ations or organi?ational or company or companies or corporation*).ti,jw. (27925)
- 106 personnel.ti,jw. (17328)
- 107 exp *occupational groups/ (423598)
- 108 profession*.ti,jw. (88636)
- 109 (staff or staffing).ti,jw. (30461)
- 110 (colleague* or coworker*).ti,jw. (2609)
- 111 **"Occupational Diseases"/ (68659)
- 112 *Job Satisfaction/ (11348)
- 113 *Occupational Health/ (23490)
- 114 *Occupational Health Services/ (7783)
- 115 **"Personnel Staffing and Scheduling"/ (9688)
- 116 **"Organizational Culture"/ (5349)

- 117 or/98-116 (836219)
- 118 97 and 117 (103483)
- 119 9 or 26 or 72 or 118 (186369)
- 120 randomized controlled trial.pt. (495256)
- 121 randomi?ed.mp. (848189)
- 122 placebo.mp. (209564)
- 123 intervention.ti,ab. (563261)
- 124 interventions.ti,ab. (425973)
- 125 program.ti,ab. (420235)
- 126 programme.ti,ab. (92383)
- 127 trial.ti,ab. (566779)
- 128 or/120-127 (2235608)
- 129 119 and 128 (40154)
- 130 limit 129 to english language (38334)
- 131 limit 130 to (comment or congress or consensus development conference or consensus development conference, nih or editorial or letter or news) (312)
- 132 130 not 131 (38022)
- 133 Animals/ not (Humans/ and Animals/) (4613687)
- 134 132 not 133 (37817)
- 135 afghanistan/ or exp "africa, northern"/ or exp "africa, central"/ or exp "africa, eastern"/ or angola/ or botswana/ or lesotho/ or malawi/ or mozambique/ or namibia/ or swaziland/ or zambia/ or zimbabwe/ or exp "africa, western"/ or albania/ or andorra/ or antarctic regions/ or argentina/ or exp asia, central/ or exp asia, northern/ or exp asia, southeastern/ or exp atlantic islands/ or bahrain/ or bangladesh/ or Bhutan/ or bolivia/ or borneo/ or "bosnia and Herzegovina"/ or bulgaria/ or exp central america/ or colombia/ or "Commonwealth of Independent States"/ or croatia/ or "Democratic People's Republic of Korea"/ or ecuador/ or gibraltar/ or guyana/ or indonesia/ or iran/ or iraq/ or jordan/ or kosovo/ or kuwait/ or lebanon/ or liechtenstein/ or macau/ or "macedonia (republic)"/ or exp melanesia/ or moldova/ or monaco/ or mongolia/ or montenegro/ or nepal/ or Netherlands Antilles/ or New Guinea/ or oman/ or pakistan/ or paraguay/ or peru/ or philippines/ or qatar/ or "republic of Belarus"/ or romania/ or saudi arabia/ or serbia/ or sri lanka/ or suriname/ or syria/ or taiwan/ or exp transcaucasia/ or ukraine/ or uruguay/ or united arab emirates/ or exp ussr/ or venezuela/ or yemen/ (626180)
- 136 "Organisation for Economic Co-Operation and Development"/ (215)
- 137 oecd*.ti,ab. (3994)
- 138 "Organisation for Economic Co-operation and Development".ti,ab. (618)
- 139 "Organisation for Economic Cooperation and Development".ti,ab. (154)
- 140 "Organization for Economic Co-operation and Development".ti,ab. (299)
- 141 "Organization for Economic Cooperation and Development".ti,ab. (562)

142 (BRIC or BRICS).ti,ab. (536)

143 australasia/ or exp australia/ or austria/ or exp Baltic States/ or belgium/ or exp canada/ or chile/ or czech republic/ or europe/ or exp france/ or exp germany/ or greece/ or hungary/ or ireland/ or Israel/ or exp italy/ or exp japan/ or korea/ or luxembourg/ or mexico/ or netherlands/ or new zealand/ or north america/ or poland/ or portugal/ or exp "republic of korea"/ or exp "Scandinavian and Nordic Countries"/ or slovakia/ or slovenia/ or spain/ or switzerland/ or turkey/ or exp united kingdom/ or exp united states/ or Brazil/ or exp Russia/ or exp India/ or exp China/ or South Africa/ (3492300)

144 European Union/ (15721)

145 Developed Countries/ (20307)

146 or/136-145 (3509293)

147 135 not (135 and 146) (518413)

148 134 not 147 (36146)

149 limit 148 to yr="2007 -Current" (26917)

150 (manage* or supervis* or "team leader*" or "line leader*").ti,ab. (1277713)

151 149 and 150 (5808)

152 149 not 150 (21109)

Notes

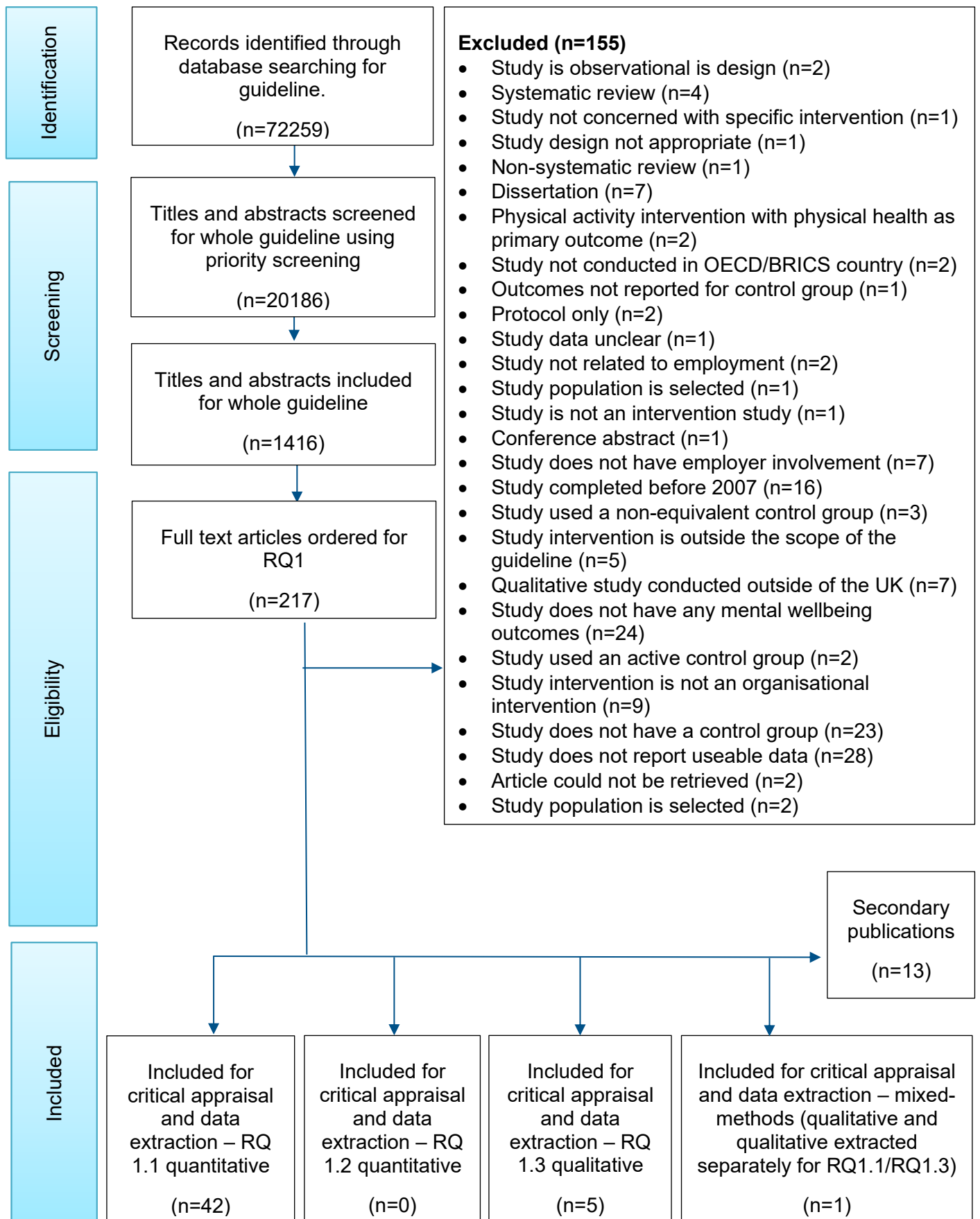
1. ProQuest runs together search lines into a single block once they are OR-ed together, but the main cluster above (S3) is the equivalent of line 130 in Medline with a publication date limited added.
2. There is a discrepancy between the number of hits returned in ASSIA (line S5 for question 2 and line S6 for the rest of questions 1-5) and the number of references downloaded. The totals in the tables on pages 7 and 8 reflect the number of references downloaded and included in the review. We have had a persistent problem with ProQuest databases whereby we are unable to download entire reference sets and therefore take the pragmatic decision to download what we can and report both totals. The same problem did not reoccur for the rerun searches.

Rerun searches.

Set#	Searched for	Results
S1	<p>(((MAINSUBJECT.EXACT.EXPLODE("Employment") OR MAINSUBJECT.EXACT("Occupational stress" OR "Occupational stress management" OR "Job satisfaction" OR "Job involvement" OR "Workaholism") OR TI,AB("job satisfaction" OR ((satisfaction OR satisfied OR engaged OR engagement OR motivation OR motivated) NEAR/3 (work OR worker OR workers OR job OR jobs OR workforce OR workplace)))) OR ((MAINSUBJECT.EXACT("Absenteeism" OR "Work behaviour" OR "Job Performance") OR MAINSUBJECT.EXACT.EXPLODE("Wellbeing" OR "Adaptation") OR TI,AB(absenteeism OR presenteeism OR (work NEAR/3 performance) OR (job NEAR/3 performance))) AND (MAINSUBJECT.EXACT("Resilience") OR MAINSUBJECT("Mental Health" OR "Psychological") OR TI,AB("well-being" OR mental OR mentally OR psychology OR psychological OR psychologically OR psychiatry OR psychiatric OR psychiatrically))) OR (TI(wellbeing OR "well-being" OR stress OR burnout OR fatigue OR fatigued OR tired OR tiredness OR depression OR depressed OR anxiety OR insomnia OR sleep OR productivity OR (confidence NOT ("confidence interval" OR "confidence intervals")) OR "self-esteem" OR (mental NEAR/9 (literacy OR knowledge OR attitude OR attitudes OR awareness OR communication OR communications OR communicative OR communicativeness OR skill OR skills OR competent OR competency OR competence OR competencies OR competently OR uptake OR "take-up"))) OR ("quality of life" OR "quality adjusted life" OR qaly OR qalys OR qald OR qalds OR qale OR qales OR qtime OR qtimes)) AND (MAINSUBJECT.EXACT.EXPLODE("Employment" OR "Employees" OR "Employees" OR "Work" OR "Working Hours" OR "Work commitment" OR "Work values" OR "Occupational health" OR "Jobs" OR "Corporate culture" OR "Work organization" OR "Professionals" OR "Personnel management" OR "Human resources management" OR "Staffing") OR MAINSUBJECT.EXACT("Labour force" OR "Workplace control" OR "Workplace learning" OR "Workplaces" OR "Working style" OR "Work status" OR "Work-family conflict" OR "Work-leisure conflict" OR "Work-leisure attitudes" OR "Work-school conflict" OR "Work site programmes" OR "Organizational policy" OR "Organizational factors" OR "Organizational environment" OR "Work environment" OR "Organizational models" OR "Organizational structure" OR "Organizational support" OR "Personnel" OR "Manpower planning" OR "Staffing levels" OR "Occupational diseases") OR MAINSUBJECT("Occupational" OR "Employment" OR "Colleagues" OR "Staff") OR TI,AB,PUB(employee OR employees OR employment OR employed OR work OR worker OR workers OR workload OR workloads OR workplace OR workplaces OR worksite OR worksites OR occupational OR job OR jobs OR organisation OR organization OR organisations OR organizations OR organisational OR organizational OR company OR companies OR corporation OR corporations OR personnel OR staff OR</p>	3905

	<p>staffing OR colleague OR colleagues OR coworker OR coworkers) OR TI,PUB (profession OR professions OR professional OR professionals))) OR ((MAINSUBJECT.EXACT.EXPLODE("Wellbeing" OR "Depression" OR "Anxiety" OR "Sleep" OR "Productivity" OR "Selfesteem") OR MAINSUBJECT.EXACT("Stress" OR "Daily Stress" OR "Critical incident stress" OR "Life Stress" OR "Nervous breakdown" OR "Role stress" OR "Social stress" OR "Traumatic stress" OR "Burnout" OR "Fatigue" OR "Mental fatigue" OR "Anxiety-Depression" OR "Anxiety disorders" OR "Acute Stress disorder" OR "Generalized anxiety disorders" OR "Panic disorders" OR "Sleep problems" OR "Sleep deprivation" OR "Selfconfidence" OR "Selfacceptance" OR "Selfactualization" OR "Selfcongruence" OR "Selfefficacy" OR "Mental health perspectives" OR "Quality adjusted life years" OR "Quality of life") OR TI,AB(wellbeing OR "well-being" OR stress OR burnout OR fatigue OR fatigued OR tired OR tiredness OR depression OR depressed OR anxiety OR insomnia OR sleep OR productivity OR (confidence NOT ("confidence interval" OR "confidence intervals"))) OR "self-esteem" OR (mental NEAR/9 (literacy OR knowledge OR attitude OR attitudes OR awareness OR communication OR communications OR communicative OR communicativeness OR skill OR skills OR competent OR competency OR competence OR competencies OR competently OR uptake OR "take-up"))) OR ("quality of life" OR "quality adjusted life" OR qaly OR qalys OR qald OR qalds OR qale OR qales OR qtime OR qtimes))) AND (TI,PUB(employee OR employees OR employment OR employed OR work OR worker OR workers OR workload OR workloads OR workplace OR workplaces OR worksite OR worksites OR occupational OR job OR jobs OR organisation OR organization OR organisations OR organizations OR organisational OR organizational OR company OR companies OR corporation OR corporations OR personnel OR staff OR staffing OR colleague OR colleagues OR coworker OR coworkers) OR TI,PUB(profession OR professions OR professional OR professionals)))) AND (MAINSUBJECT.EXACT.EXPLODE("Randomized controlled trials") OR MAINSUBJECT.EXACT("Prospective controlled trials" OR "Case controlled studies") OR TI,AB(randomised OR randomized OR intervention OR interventions OR program OR programme OR trial))) AND ud(20191128-20210201)) AND la.exact("ENG")</p>	
S2	<p>(MAINSUBJECT.EXACT.EXPLODE("Personnel management" OR "Human resources management")) OR (TI,AB(manager OR managers OR management OR supervisor OR supervisors OR "team leader" OR "team leaders" OR "team leadership" OR "line leader" OR "line leaders" OR "line leadership"))</p>	84384
S3	S1 AND S2	631
S4	S1 NOT S2	3274

Appendix C – Effectiveness evidence study selection



Appendix D – Effectiveness evidence

D.1 Arapovic-Johansson, 2018

Bibliographic Reference Arapovic-Johansson, Bozana Wahlin, Charlotte Hagberg, Jan Kwak, Lydia Bjorklund, Christina Jensen, Irene; Participatory workplace intervention for stress prevention in primary health care. A randomized controlled trial; EUROPEAN JOURNAL OF WORK AND ORGANIZATIONAL PSYCHOLOGY; 2018; vol. 27 (no. 2); 219-234

Study details

Trial registration number	ClinicalTrials.gov (ID: NCT02694211).
Study start date	Jun-2013
Study end date	Dec-2014
Aim	The study aims to explore whether a participatory, organizational intervention (ProMES) can reduce work related risk factors, and thereby prevent stress-related ill health
Country/geographical location	Sweden
Setting	Primary health care unit
Inclusion criteria	At least 20% of employees should be experiencing job strain (i.e., a combination of low job control and high job demand). Units should not be conducting or planning to conduct any other organizational interventions.
Exclusion criteria	Not reported
Method of randomisation	Using a web-based tool for randomization four numbers between 1 and 12 were chosen by means of a data random generator. Each unit was given one of these numbers. A new randomization of numbers between 1 and 12 was then carried out using the random generator, but before randomization it was decided that the first of these unit numbers to emerge would be an intervention unit.
Method of allocation concealment	Not specified
Unit of allocation	Group (Unit)

Unit of analysis	Individual
Statistical method(s) used to analyse the data	T-test (for age, working hours per week, overtime and overall health), and Mann–Whitney test (for ordinal variables), were used to examine differences between the intervention and control groups with regard to background variables. Unadjusted effect of ProMES was tested by means of Generalized Estimating Equations (GEE). To determine which covariates should be adjusted for Modified Poisson regression or Linear regression analysis was applied to examine if age, overtime, experience (years at organization and years in the profession), over-commitment, depression, and exhaustion were correlated with the outcome variables. GEE was used in a final, adjusted analysis of the effect of the remaining independent variables (and their interactions) on the outcome variables. T-test for dependent observations was used to analyze differences between the groups for Objective data (monthly group-level ratios between the total number of tasks (Tasks) and the total number of hours worked (Time) were calculated, as well as ratios between Time and total number of visits (including home visits and group visits); Time and number of administrative tasks and Time and number of telephone calls taken)
Attrition	89/118 (75%) randomised participants provided data at baseline; 97/123 (79%) randomised participants provided data at 6 months; 105/130 (81%) responded at 12 months
Assessments and timepoints	Measurements took place at two baselines (M0 and M1) and at 6-month (M2) and 12-month (M3) follow-ups. The intervention started after the second baseline (M1) and M1 is used as the baseline in all the analyses in this paper. A two-part web-based questionnaire was administered. The first part assessed the psychosocial work environment, health and lifestyle via the AHA-questionnaire (based primarily on QPS-Nordic [Dallner et al., 2000]). The second part was the ERI questionnaire (Leineweber et al., 2010; Siegrist, 2013). Also measured: Exhaustion via the validated Swedish version of the Oldenburg Burnout Inventory-OLBI; Depression via Swedish validated version of the Hospital Anxiety and Depression Scale-HAD; measurement of job demands and job control via employees' subjective appraisal.
Study limitations (author)	Implementation fidelity - the unit was split into professional groups and seven design teams were formed. Small number of units to randomize. Small number of employees in the control units so a separate analyses for the two control groups was not undertaken. Short follow-up period (12 months).
Study limitations (reviewer)	Method of allocation concealment and blinding is unclear. Sample size calculation not specified so unclear if study was adequately powered to detect intervention effect on outcomes outlined. Use of self-report for primary and secondary outcomes. Generalisability may be limited due to high percentage of female in sample (>80%) and intervention setting (Primary care unit)
Source of funding	AFA Insurance and the Swedish Research Council for Health, Working Life and Welfare

Study arms

ProMES (N = 57): One unit with 57 employees

Wait-list (N = 61): Two units with 61 employees

Characteristics

Study-level characteristics

Characteristic	Study (N = 118)
Ethnicity	NR
Nominal	

Arm-level characteristics

Characteristic	ProMES (N = 57)	Wait-list (N = 61)
Age	n = 49 ; % = 86	n = 40 ; % = 67
Sample size		
Age	44.4 (12.2)	48.2 (10.6)
Mean (SD)		
Gender (% Female)	86	83
Nominal		
Gender (% Female)	n = 49 ; % = 86	n = 40 ; % = 67
Sample size		

Outcomes

Study timepoints

- 12 month (After the intervention)

Employee outcomes

Outcome	ProMES, 12 month, N = 57	Wait-list, 12 month, N = 61
Job stress (0-32) Reported as Oldenburg Burnout Inventory-OLBI - Exhaustion	n = 55 ; % = 93.2	n = 50 ; % = 82
Sample size		
Job stress (0-32) Reported as Oldenburg Burnout Inventory-OLBI - Exhaustion	18.7 (4.8)	18.2 (4.6)
Mean (SD)		
Mental health symptoms (0-21) Using Hospital Anxiety and Depression Scale - Depression	n = 55 ; % = 93.2	n = 50 ; % = 82
Sample size		
Mental health symptoms (0-21) Using Hospital Anxiety and Depression Scale - Depression	3.4 (3.6)	2.7 (2.5)
Mean (SD)		

Job stress - Polarity - Lower values are better.

Mental health symptoms - Polarity - Lower values are better.

Critical appraisal - Cochrane Risk of Bias tool (RoB 2.0) Cluster trials

Job stress - ProMES vs Wait-list (12 month follow-up)

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low

Section	Question	Answer
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (<i>Self-reported outcomes</i>)
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcomes</i>)

Mental health symptoms - ProMES vs Wait-list (12 months follow-up)

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low

Section	Question	Answer
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (<i>Self-reported outcomes</i>)
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcomes</i>)

Study details

Brief name	Participatory workplace intervention
Rationale/theory/Goal	To explore whether a participatory, organizational intervention can reduce work related risk factors, and thereby prevent stress-related ill health. A participatory intervention is “designed to increase employees’ opportunities to make decisions or participate in decision-making process at work”. International studies have shown that a participatory approach has positive effects on employee achievements, attitudes and health.
Materials used	Consultant; A one-hour information meeting; a whole day workshop; ProMES facilitator; design team; Self report measures (AHA-questionnaire; ERI questionnaire; Exhaustion via the validated Swedish version of the Oldenburg Burnout Inventory-OLBI; Depression via Swedish validated version of the Hospital Anxiety and Depression Scale-HAD); Measurement of job demands and job control via employees’ subjective appraisal.
Procedures used	The ProMES intervention consisted of the following steps: Formation of one or more design teams; Identification of objectives; Development of indicators; Approval from management; Development of contingencies; Approval by management; Development of feedback reports; Conducting of feedback meetings; Monitoring over time.
Provider	Consultant working with the intervention group is an independent, external practitioner, who is a certified user of ProMES and a highly experienced ProMES facilitator
Method of delivery	Face-to-face in groups via workshops
Setting/location of intervention	Primary health care

Intensity/duration of the intervention	A one-hour information meeting (June 2013); a whole day workshop was the start of the intervention (September 2013); After the initial workshop the unit was divided into one overarching design team and seven occupational design teams, between design team meetings, occupational group meetings and workplace meetings were used to share information, get input from all employees and discuss and work on the development of evaluation systems. Written information was shared by email and on notice boards. All design teams, except for the childcare/maternity clinic and counsellors, had five to six meetings during the intervention period (October 2013 - December 2013). Another whole day workshop for the entire unit (December 2013).
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Considered but not fully reported; Feedback reports held
Actual treatment fidelity	Not reported but flagged as a potential limitation
Other details	Not reported

Study arms

ProMES (N = 57)

One unit with 57 employees. Productivity Measurement and Enhancement System (ProMES) is a participative intervention. Core strategies of ProMES address work organization and environment, i.e., work-related risk factors such as absence of influence and control, insufficient interaction with co-workers, unclear and conflicting tasks, insufficient participation in decision-making, low esteem reward, and insufficient feedback.

Wait-list (N = 61)

Two units with 61 employees

D.2 Barrech 2018

Bibliographic Reference Barrech, Amira; Seubert, Christian; Glaser, Jurgen; Gundel, Harald; Can a workplace leadership intervention reduce job insecurity and improve health? Results from a field study.; International archives of occupational and environmental health; 2018; vol. 91 (no. 5); 547-557

Study details

Study design	Cluster randomised controlled trial
Trial registration number	Not reported
Study start date	2012
Study end date	2012
Aim	To evaluate the effectiveness of a custom-designed intervention in reducing job insecurity as the primary outcome and mental health (anxiety and depression) and somatic health (psychosomatic complaints) as secondary outcomes.
Country/geographical location	Switzerland
Setting	<p>Workplace</p> <ul style="list-style-type: none"> • Sector: Private • Industry: Production site • Organisation size: Large • Contract type - Not reported. • Seniority - Mixed (supervisors and team members) • Income level - Not reported
Inclusion criteria	All supervisors were invited to attend

Exclusion criteria	None reported
Method of randomisation	Not reported
Method of allocation concealment	Not reported
Unit of allocation	Cluster (Supervisor level)
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<p>Power calculation - Not reported.</p> <p>Intention to treat - Not reported.</p> <p>Analysis of covariance (ANCOVA) was applied with posttreatment values as dependent variables and baseline values of the same variables as covariates.</p> <p>Parameter estimates are reported in terms of unstandardized regression coefficients B, their standard errors (SE), p values and 95% confidence intervals (CI). In a first step (model 1), group-affiliation (IG/CG) and position (supervisor/team member) were entered into the model together with the control variables (age, negative affect, shift work, baseline value of outcome variable). In a second step, an interaction between analysed IG/CG * position was added (model 2) to account for differences in intervention effects in subordinates and supervisors, respectively.</p>
Attrition	<p>In the intervention group 20 supervisors (38.5) and 51 team members (13.0%) were included in the final analysis</p> <p>In the control group 4 supervisors (8.2%) and 28 team members (6,6%) were included in the final analysis</p>
Assessments and timepoints	<p>The following assessments were made at these timepoints.</p> <ul style="list-style-type: none"> • Baseline • Follow-up - 3 months after intervention ended.

	<p>Primary outcome</p> <ul style="list-style-type: none"> • Job insecurity • Somatic health • Mental health • Cortisol concentration
Study limitations (author)	<p>Supervisors' voluntary decision whether or not to participate in the study may have resulted in only motivated supervisors taking part.</p> <p>Low response rate meant study needed to be restructured</p>
Study limitations (reviewer)	<p>None to add</p>
Source of funding	<p>Funded by hosting company and the Swiss State Secretariat for Economic Affairs (SECO).</p>

Study arms

Education (N = 443)

52 supervisors randomised and 391 team members

Waiting list (N = 473)

49 supervisors randomised and 424 team members

Characteristics

Arm-level characteristics

	Education (N = 443)	Waiting list (N = 473)
Age (years)		

	Education (N = 443)	Waiting list (N = 473)
Reported for completers only		
Mean/SD	41.37 (9.23)	42.75 (10.47)
Gender Reported for completers only		
Male		
Sample Size	n = 48 ; % = 67.6	n = 14 ; % = 43.8
Ethnicity Not reported		

Outcomes

Study timepoints	3 (month)
-------------------------	-----------

Employee outcomes

	Education vs Waiting list
	3 (month)
	N1 = 443, N2 = 473
Job stress (0 to 100) Reported as job insecurity. <i>Polarity: Lower values are better</i>	
Sample Size	n = 71 ; % = 16, n = 32 ; % = 6.8

	Education vs Waiting list
	3 (month)
	N1 = 443, N2 = 473
Custom value	$\beta = -5.78$ (SE = 3.0)
Mental health symptoms (0 to 21) Reported using Hospital Anxiety and Depression Scale - Anxiety <i>Polarity: Lower values are better</i>	
Sample Size	n = 71 ; % = 16, n = 32 ; % = 6.8
Custom value	$\beta = 0.65$ (SE 0.68)

Job stress -Education vs Waiting list - 3 month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low

Section	Question	Answer
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Outcome measure was self-reported)</i>
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns <i>(Self-reported outcome)</i>

Mental health symptoms - Education vs Waiting list - 3 month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Outcome measure was self-reported)</i>
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low

Section	Question	Answer
Overall bias	Risk of bias judgement	Some concerns (Self-reported outcome)

Study arms

Education (N = 443)	
Brief name	Custom-designed educational intervention to reduce job insecurity [page 548]
Rationale/theory/Goal	While changes in the working environment can have certain positive aspects, restructuring has also been associated with job insecurity and adverse health effects in employees that remain in the company. Drawing on the important role of supervisors in the context of job insecurity, the intervention was directed at supervisors to reduce job insecurity among their team members and thereby indirectly maintain their health. [page 547 and 548]
Materials used	Not reported
Procedures used	<ul style="list-style-type: none"> The intervention consisted of six training sessions during 3 months with groups of up to 10 supervisors. Three sessions were designed as seminars and each was followed by a peer-counselling session. The seminars were divided into two parts: first, the trainers provided theoretical input, which was then transferred into practice in the second part by means of group discussions and case studies. Each training session also related to the context of the organization at hand undergoing a phase of organizational change. During peer-counselling sessions, the topics of the seminars were discussed in more depth. The peer-counselling setting was intended to increase participants' understanding and appreciation of social support by colleagues as a valuable resource. <p>[pages 550 and 551]</p>
Provider	Not reported
Method of delivery	Training sessions, and seminars followed by peer counselling sessions [page 550]

Setting/location of intervention	Not reported
Intensity/duration of the intervention	6 training sessions (2 to 4 hours) conducted over a period of 3 months. [page 549 and 550]
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None
Waiting list (N = 473)	
Brief name	Waiting list
Rationale/theory/Goal	Not applicable
Materials used	Not applicable
Procedures used	Participants in the control group received the training 4 months later in a second wave. [page 549]
Provider	Not reported
Method of delivery	Not reported

Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None

D.3 Bachkirova, 2015

Bibliographic Reference Bachkirova, Tatiana; Arthur, Linet; Reading, Emma; Evaluating a coaching and mentoring programme: Challenges and solutions.; International Coaching Psychology Review; 2015; vol. 10 (no. 2); 175-189

Study details

Study design	Survey
Trial registration number	Not reported

Aim	Mixed methods study to establish whether the measures selected could identify changes in the performance and attitudes of doctors undergoing the coaching intervention, with the purpose of improving the effectiveness of doctors and dentists for the benefit of the patient.
Country/geographical location	UK
Setting	London Deanery - Coaching and mentoring services for doctors and dentists
Inclusion criteria	Not specified - Sample all applied for the coaching program
Exclusion criteria	Not reported
Method of randomisation	Not applicable
Method of allocation concealment	Not applicable
Unit of allocation	Not applicable
Unit of analysis	Individual
Statistical method(s) used to analyse the data	A bespoke questionnaire and interviews that were analysed using a Grounded Theory approach (Strauss & Corbin, 1990)
Attrition	120/189 participants provided responses to questionnaire (78%). 120 participants responded to question 9 which underpins the qualitative element.
Assessments and timepoints	The assessment was taken at two points: Time 1 (pre-coaching) and Time 2 (post-coaching) online measures. The duration of the intervention is not specified.
Theme 1	Confidence improvement and increased self-awareness. <i>'Substantially increased my confidence in the workplace in the context of being a new consultant joining a well-established senior team'.</i>

	<p><i>'...gave me insight into the tools I possess myself to change my work and personal life'.</i></p>
Theme 2	<p>Specific areas of working life where there was a significant difference as the result of coaching such as career development and work-life balance.</p> <p>Work-life balance:</p> <p><i>'It has improved my perspective on what I am able to achieve at work and so improved my work-life balance significantly. I feel better able to cope as a result.'</i></p> <p>Seeing things in perspective</p> <p><i>'...helped me to see my position, behaviour and current options in better perspective'.</i></p> <p>Career development</p> <p><i>'...focused my ideas of where I want to be in the future and how to influence and use the resources open to me now to reach these roles'.</i></p>
Theme 3	<p>Acquiring a range of skills that could make participants more capable of addressing potential issues, such as the skills of problem-solving, reflection and seeing things in perspective.</p> <p>Change/problem solving.</p> <p><i>'I can now confidently formulate strategies to help me achieve my goals'.</i></p> <p>Reflection</p> <p><i>'...taught me how to analyse my experiences objectively – reflecting, thinking about things a lot deeper than I usually would.'</i></p>
Theme 4	<p>Being listened to/sharing</p> <p><i>'I was able to safely discuss a very difficult situation at work'.</i></p>
Study limitations (author)	<p>Authors highlight the limitation of utilizing a non-RCT method.</p>

Study limitations (reviewer)	One open-ended question within a questionnaire used to underpin qualitative findings with limited details regarding the analytical process included process of theme generation, which researchers were involved and processes put in place to consider bias in the process. The single site and single industry sample limits the study findings generalizability.
Source of funding	Reference to 'public funding' but nothing more specific.

Study arms

Coaching (N = 189)

Coaching to improve the effectiveness of doctors and dentists for the benefit of the patient.

Characteristics

Study-level characteristics

Characteristic	Study (N = 120)
Age	NR
Nominal	
30–39 years age group (%)	48.3
Nominal	
20–29 years age group (%)	20.8
Nominal	
40–49 years age group (%)	23.3
Nominal	
50–59 years age group (%)	7.5

Characteristic	Study (N = 120)
Nominal	
Gender % Female	66.7
Nominal	
Ethnicity % Asian or Asian British: Indian	18.3
Nominal	

Critical appraisal - CASP qualitative checklist V2 (updated version use now)

Section	Question	Answer
Aims of the research	Was there a clear statement of the aims of the research?	Yes <i>(Mixed methods study to establish whether the measures selected could identify changes in the performance and attitudes of doctors undergoing the coaching intervention, with the purpose of improving the effectiveness of doctors and dentists for the benefit of the patient.)</i>
Appropriateness of methodology	Is a qualitative methodology appropriate?	Can't tell <i>(The use of one open-ended question within a bespoke questionnaire at one timepoint with minimal explanation regarding the methodological analysis may not allow a full investigation of the study aim to establish whether the measures selected could identify changes in the performance and attitudes of doctors undergoing the coaching intervention.)</i>
Research Design	Was the research design appropriate to address the aims of the research?	Can't tell <i>(The study authors outlined that they interviewed 3 service user to inform the development of the questionnaire used to collect data. One question (Q9) was open-ended to allow qualitative response. The study is outlined as a mixed-method approach</i>

Section	Question	Answer
		<i>but the methodological justification for the open ended question compared to other processes is unclear.)</i>
Recruitment Strategy	Was the recruitment strategy appropriate to the aims of the research?	Can't tell <i>(The recruitment strategy was not clearly outlined. Participants were selected from those who applied to participate in the intervention (numbers not stated))</i>
Data collection	Was the data collected in a way that addressed the research issue?	Can't tell <i>(The data was collected via a one open-ended question within a bespoke questionnaire. The setting was not outlined and justification for the approach adopted is unclear and there is no reference to consideration of the research team on data collection. One question (Q9) was opened-end to allow qualitative response. The study is outlined as a mixed-method approach but the methodological justification for the open ended question compared to other processes is unclear.)</i>
Researcher and participant relationship	Has the relationship between researcher and participants been adequately considered?	Can't tell <i>(The author(s) did not make reference to critical reflection regarding their own role and potential bias and influence during data collection, location or sample recruitment. The one open-ended question used to collect qualitative data in a questionnaire was developed in consultation with 3 service users.)</i>
Ethical Issues	Have ethical issues been taken into consideration?	Can't tell <i>(The authors outlined that the research was conducted with consideration of good practice and strict ethical guidelines. There are no further details regarding what and how this was undertaken.)</i>
Data analysis	Was the data analysis sufficiently rigorous?	No <i>(The authors outlined that a Grounded Theory approach (Strauss & Corbin, 1990) was used as the main methodology for analysis. Reference to the themes that emerged is mentioned but thematic analysis is not mentioned nor is the process and methods by which the themes were arrived at.)</i>

Section	Question	Answer
Findings	Is there a clear statement of findings?	No <i>(The qualitative findings are based on one open ended question within a questionnaire. There is a lack of details regarding how the themes have been generated and a lack of discussion regarding these themes as they pertain to the aim of this study and their applicability to mental wellbeing at work.)</i>
Research value	How valuable is the research?	The research has some value <i>(The lack of clarity within the paper regarding the method and process of analysis to generate the themes raises concerns regarding the value of the findings to the field of mental wellbeing at work. Authors discuss the mixed-method findings more broadly rather than the specifics of the qualitative elements)</i>
Overall risk of bias and relevance	Overall risk of bias	High <i>(The study utilizes one open-ended question within a bespoke questionnaire at one timepoint with minimal explanation regarding the methodological analysis may not allow a full investigation of the study aim. The study is outlined as a mixed-method approach but the methodological justification for the open-ended question compared to other processes is unclear. The setting was not outlined and justification for the approach adopted is unclear and there is no reference to consideration of the research team on data collection. There is a lack of details regarding how the themes have been generated and a lack of discussion regarding these themes as they pertain to the aim of this study and their applicability to mental wellbeing at work. Reference to the themes that emerged is mentioned but thematic analysis is not mentioned nor is the process and methods by which the themes were arrived at.)</i>
Overall risk of bias and relevance	Relevance	Relevant

Study details

Brief name	Coaching and mentoring
-------------------	------------------------

Rationale/theory/Goal	Mixed methods study to establish whether the measures selected could identify changes in the performance and attitudes of doctors undergoing the coaching intervention, with the purpose of improving the effectiveness of doctors and dentists for the benefit of the patient.
Materials used	Intervention materials are not reported; The study utilized a bespoke questionnaire that was developed with consultation with 3 service users
Procedures used	Not reported. Reference made to London Deanery delivering coaching and mentoring.
Provider	London Deanery
Method of delivery	Not reported. Study refers to Coaching and mentoring programme
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

D.4 Biggs 2014

Bibliographic Reference

Biggs, Amanda; Brough, Paula; Barbour, Jennifer; Enhancing Work-Related Attitudes and Work Engagement: A Quasi-Experimental Study of the Impact of an Organizational Intervention; International Journal of Stress Management; 2014; vol. 21; 43-68

Study details

Study design	Non-randomised controlled trial (NRCT)
Trial registration number	Not reported
Aim	To determine whether leadership development interventions improve work-culture support, supportive leadership, strategic alignment, job satisfaction and work engagement, and reduce job demands, psychological strain, and turnover, of participant subordinates in the police service.
Country/geographical location	Australia
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: public • Industry: police service • Organisation size: large • Contract type: shift work and non-shift work • Seniority: mixed (constable, senior constable, sergeant, senior sergeant, inspector) • Income: not reported
Inclusion criteria	<ul style="list-style-type: none"> • Participants were police officers
Exclusion criteria	<ul style="list-style-type: none"> • Data obtained from police officers who either moved into or out of the intervention regions after baseline measurement were excluded. • Respondents who had participated in a concurrent intervention, unrelated to the leadership-development intervention. • The actual leadership-development intervention participants were excluded from the data.

Method of allocation concealment	Not reported
Unit of allocation	Individual
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • No power calculations were reported. • No intention to treat analysis was reported. • Multiple regression analyses were employed to test each of the research hypotheses
Attrition	At Time 1, 2,637 employees were invited to participate in the survey and responses were returned by 1,098 employees (42% response rate). Of the 853 responses that met these criteria at Time 1, 377 participants also returned Time 2 surveys (44% of the Time 1 sample/ 14% of total employees invited to participate).
Assessments and timepoints	<p>The following outcomes were measured at the following timepoints:</p> <ul style="list-style-type: none"> • Baseline • 7 months after the intervention <p>The primary outcome was to enhance upstream organisational processes. This was measured with the following outcomes:</p> <ul style="list-style-type: none"> • Job demands. • Work-culture support • Supportive leadership • Strategic alignment • Work engagement • Job satisfaction • Turnover intentions • Psychological strain
Study limitations (author)	<ul style="list-style-type: none"> • There are some pre-existing differences between the intervention subordinates and the control group prior to intervention implementation, which may have influenced the results. • Exclusion criteria may have reduced external validity.

	<ul style="list-style-type: none"> • There was a low response rate. • The data-collection method was comprised solely of self-report measures, which may have biased the results. • There was potential information bias that may have impacted the results of the study due to participants being aware that an intervention was conducted to modify psychosocial work characteristics and psychological outcomes.
Study limitations (reviewer)	<ul style="list-style-type: none"> • There was no randomisation. • There was no ITT analysis
Source of funding	Queensland Smart State Senior Researcher Fellowship grant

Study arms

Leadership development (N = 146)

146 participants who worked directly with the leadership-development intervention participants, but who did not participate in the intervention themselves.

Control (N = 222)

222 participants neither worked directly with the intervention participants nor participated in the intervention.

Characteristics

Arm-level characteristics

	Leadership development (N = 146)	Control (N = 222)
Age		
Mean/SD	40 (7.7)	39.3 (8.4)
Gender		
Men		

	Leadership development (N = 146)	Control (N = 222)
Sample Size	n = 112 ; % = 77	n = 181 ; % = 82
Women		
Sample Size	n = 34 ; % = 23	n = 41 ; % = 19
Ethnicity Not reported		

Outcomes

Study timepoints	Baseline 7 (month) 7 months postintervention

Employee outcomes

	Baseline		7 (month)	
	Leadership development	Control	Leadership development	Control
	N = 146	N = 222	N = 146	N = 222
Climate <i>(Not reported)</i> Self-reported- measure assesses the extent to which the organization's culture is viewed as supportive of staff in response to both chronic and acute stressors. <i>Polarity: Higher values are better</i>				
Mean/SD	2.68 (0.82)	2.86 (0.8)	2.87 (0.89)	2.82 (0.81)

	Baseline		7 (month)	
	Leadership development	Control	Leadership development	Control
	N = 146	N = 222	N = 146	N = 222
<p>job satisfaction <i>(Not reported)</i> Self-reported- 15-item measure developed by Warr, Cook, and Wall (1979) [data used for job satisfaction outcome] <i>Polarity: Higher values are better</i></p>				
Mean/SD	4.25 (0.9)	4.42 (0.86)	4.35 (0.9)	4.34 (0.83)
<p>Job engagement <i>(Not reported)</i> Self-reported- nine-item Utrecht Work Engagement Scale <i>Polarity: Higher values are better</i></p>				
Mean/SD	3.84 (1.39)	3.82 (1.36)	3.89 (1.37)	3.65 (1.45)
<p>Mental wellbeing <i>(0-12)</i> Self-reported- 12-item General Health Questionnaire (GHQ-12) [reported as psychological strain] <i>Polarity: Lower values are better</i></p>				
Mean/SD	0.98 (0.41)	0.98 (0.44)	1.05 (0.49)	1.01 (0.44)

Climate - Leadership development vs Control -7-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of detail around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Lack of information around missing data and self-reported outcomes)</i>

Job satisfaction - Leadership development vs Control - 7-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low

Section	Question	Answer
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of detail around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Lack of information around missing data and self-reported outcomes)</i>

Mental wellbeing - Leadership development vs Control - 7-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of detail around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>

Section	Question	Answer
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Lack of information around missing data and self-reported outcomes)</i>

Mental health symptoms - Leadership development vs Control - 7-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of detail around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Lack of information around missing data and self-reported outcomes)</i>

Study arms

Leadership development (N = 146)	
Brief name	Leadership-development programme [page 43]
Rationale/theory/Goal	In accordance with the major tenets of the revised JD-R model, it was expected that exposure to a leadership-development intervention would provide upstream resources that influence both psychosocial work characteristics and psychological outcomes. [page 49]
Materials used	Not reported
Procedures used	<ul style="list-style-type: none"> • First, intervention participants, their immediate supervisors, and their direct subordinates completed a 360° review process. • Second, action-learning workshops were conducted over five days: These workshops provided training on theoretical leadership styles and behaviors, as well as practical resources to enhance their leadership capabilities. Participants were asked to conduct their own action-learning project during workshop sessions, which enabled participants to engage in the material in a manner that was meaningful to their work context and allowed opportunities for vicarious learning through shared experiences. • Finally, individual coaching was provided to program participants (leaders) throughout the duration of the program. These coaching sessions involved personalized feedback based on the 360° review process and enabled participants to discuss difficulties or positive outcomes associated with their newly implemented leadership practices. <p>[page 50]</p>
Provider	<ul style="list-style-type: none"> • The workshops and coaching sessions were conducted by an external facilitator. • The 360° review process was conducted independently by the university researchers. <p>[page 50]</p>
Method of delivery	Workshops and coaching sessions [page 50]
Setting/location of intervention	Not reported
Intensity/duration of the intervention	<ul style="list-style-type: none"> • 5-day workshop • Intensity and duration of coaching not reported. <p>[page 50]</p>

Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	The leadership-development intervention program was customized in consultation with key organizational stakeholders to ensure its relevance to the police organization. [page 50]
Control (N = 222)	
Brief name	No intervention [page 51]
Rationale/theory/Goal	Not applicable
Materials used	Not applicable
Procedures used	Not applicable
Provider	Not applicable
Method of delivery	Not applicable
Setting/location of intervention	Not applicable
Intensity/duration of the intervention	Not applicable
Tailoring/adaptation	Not applicable
Unforeseen modifications	Not applicable

Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	Not applicable

D.5 Bond 2008

Bibliographic Reference Bond, Frank W; Flaxman, Paul E; Bunce, David; The influence of psychological flexibility on work redesign: mediated moderation of a work reorganization intervention.; The Journal of applied psychology; 2008; vol. 93 (no. 3); 645-54

Study details

Study design	Cluster randomised controlled trial
Trial registration number	Not reported
Aim	To assess impact of psychological flexibility on a control-enhancing work re-organisation intervention
Country/geographical location	UK
Setting	<p>Workplace</p> <ul style="list-style-type: none"> • Private • Service (call centre) • Large organisation • Contract type: Not reported. • Seniority: entry level and non-managerial role

	<ul style="list-style-type: none"> Income: Not reported
Inclusion criteria	<ul style="list-style-type: none"> Entry level employee Non-managerial employee
Exclusion criteria	None reported
Method of randomisation	Not reported
Method of allocation concealment	Not reported
Unit of allocation	Cluster (worksite)
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<p>Power calculation: Not reported.</p> <p>Intention to treat: Not reported</p>
Attrition	<p>In the intervention group 84 (57.9%) responded at both timepoints</p> <p>In the control group 97 (58.1%) responded at both timepoints</p>
Assessments and timepoints	<p>The following assessments were made at these timepoints.</p> <ul style="list-style-type: none"> Baseline Follow-up (14 months after baseline) <p>Primary outcome</p> <ul style="list-style-type: none"> Job control

	<ul style="list-style-type: none"> • Psychological distress • Absenteeism • Job motivation
Study limitations (author)	Lack of an 'active' control group
Study limitations (reviewer)	Large number of drop-outs
Source of funding	British Occupational Health Research Foundation.

Study arms

Participatory intervention (N = 167)
1 worksite randomised
No intervention (N = 145)
1 worksite randomised

Characteristics

Study-level characteristics

	Study (N = 181)
Age	
Mean/SD	33 (10)
Gender	

	Study (N = 181)
N calculated by reviewer	
Female	
Sample Size	n = 121 ; % = 67
Ethnicity Not reported	

Outcomes

Study timepoints	14 (month) after baseline
-------------------------	---------------------------

Employee outcomes

	Participatory intervention	No intervention
	14 (month)	14 (month)
	N = 167	N = 145
Job stress (0 to 36) reported as GHQ-12 psychological distress. <i>Polarity: Lower values are better</i>		
Mean/SD	6.58 (7.04)	10.08 (5.53)
Absenteeism reported as number of days. <i>Polarity: Lower values are better</i>		

	Participatory intervention	No intervention
	14 (month)	14 (month)
	N = 167	N = 145
Mean/SD	7.27 (4.08)	12.23 (6.31)
Job motivation (6 items scoring 1 to 7) <i>Polarity: Higher values are better</i>		
Mean/SD	33.9 (2.99)	33.33 (2.72)

Job stress - Participatory intervention vs No intervention - 14-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Some concerns (<i>High attrition</i>)
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (<i>Outcome measure was self-reported</i>)

Section	Question	Answer
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome and high attrition</i>)

Absenteeism - Participatory intervention vs No intervention - 14-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Some concerns (<i>High attrition</i>)
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Low
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns

Section	Question	Answer
		<i>(High attrition)</i>

Job motivation - Participatory intervention vs No intervention - 14 months follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Some concerns <i>(High attrition)</i>
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Outcome measure was self-reported)</i>
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns <i>(Self-reported outcome and high attrition)</i>

Study arms

Participatory intervention (N = 167)	
Brief name	Work redesign [page 6 and page 9]
Rationale/theory/Goal	This intervention was based upon the principles of participative action research, which emphasizes a collaborative relationship between the researchers and organization members. Through such a collaborative process, the expertise of both parties can be harnessed to increase the chances of efficacious work redesign. [page 9]
Materials used	<ul style="list-style-type: none"> • Questionnaire packs containing measures [page 10]
Procedures used	<ul style="list-style-type: none"> • Senior managers of sites were informed whether they were in the control or intervention arm. • Twelve team members volunteered to participate on a steering committee. • The committee's aims were to: (1) identify specific instances of these problematic aspects of work organization and (2) recommend changes that might address these problems, in order to improve the outcomes. • Committee members also consulted with their team colleagues, between the meetings, to develop and finalize their recommendations for change. • Team members were provided opportunities to participate in the work planning process. <p>[pages 10-11]</p>
Provider	Researchers [page 10]
Method of delivery	Steering committee meetings [page 10]
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Two, 2-hour steering committee meetings [page 10]
Tailoring/adaptation	Not applicable

Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	Not applicable
No intervention (N = 145)	
Brief name	No intervention [page 18]
Rationale/theory/Goal	Not applicable
Materials used	Not applicable
Procedures used	Not applicable
Provider	Not applicable
Method of delivery	Not applicable
Setting/location of intervention	Not applicable
Intensity/duration of the intervention	Not applicable
Tailoring/adaptation	Not applicable

Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	Steps were taken to ensure that the managers in the control group were unaware of the changes made in the intervention group [page 11]

D.6 Bourbonnais 2006

Bibliographic Reference Bourbonnais, Rene; Brisson, Chantal; Vinet, Alain; Vezina, Michel; Abdous, Belkacem; Gaudet, Michel; Effectiveness of a participative intervention on psychosocial work factors to prevent mental health problems in a hospital setting; Occupational and Environmental Medicine; 2006; vol. 63 (no. 5); 335-342

Study details

Study design	Non-randomised controlled trial (NRCT)
Trial registration number	Not reported
Study start date	Feb-2000
Study end date	2002
Aim	To determine whether a participatory intervention on psychosocial work factors is effective in preventing mental health problems in a hospital setting.

Country/geographical location	Canada
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: not reported • Industry: healthcare • Organisation size: large • Contract type: mixed (permanent full time or part time and temporary positions, or who are on call) • Seniority: mixed (a range of years and occupations) • Income: Not reported
Inclusion criteria	All care providers in direct contact with patients (nurses, orderlies, and auxiliary nurses), who occupy permanent full time or part time and temporary positions, or who are on call.
Exclusion criteria	Care providers on sick leave for more than three months and those working only two days per week over the three months preceding the pre-intervention or baseline measure were excluded from the study.
Method of allocation concealment	Not reported
Unit of allocation	Cluster- hospital
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • No power calculations were performed. • No ITT analysis was performed. • The two hospitals were compared before the intervention on psychosocial job factors and mental health using logistic regression analysis. Comparisons were then made for each variable: before and after intra-group comparison and post-intervention inter-group comparison. For these analyses only care providers who responded at both interviews, in 2000 and 2002 were included.

<p>Attrition</p>	<p>Among eligible caregivers (n=674 in the experimental group and n=894 in the control group), the participation rate was 73% (n=492) for the experimental hospital and 69% (n=618) for the control hospital for baseline outcome measures. The response rate at the postintervention timepoint among eligible subjects at baseline was 45% in the experimental hospital and 35% in the control hospital.</p>
<p>Assessments and timepoints</p>	<p>The following outcomes were measured at the following timepoints:</p> <ul style="list-style-type: none"> • Baseline • 12 months after the start of the intervention <p>The primary outcomes were psychosocial factors at work and health problems including outcome measures for:</p> <ul style="list-style-type: none"> • Psychological demands • Psychological distress • Burnout • Sleeping problems
<p>Study limitations (author)</p>	<ul style="list-style-type: none"> • At the beginning of the research, the healthcare organisations were continually going through restructuring and cost reducing strategies and it was therefore impossible to limit or prevent organisational changes over the study period. • A selection bias may have occurred if participants in the telephone survey at baseline were not representative of all eligible subjects. • Another potential selection bias could have been introduced by dropouts at the postintervention measure or if participation at M1 was linked to changes in individual level of work psychosocial factors which are in turn linked with mental health problem prevalence. • There was greater participation of caregivers, who had reported high reward in the experimental hospital may have introduced a bias in the report of this indicator and the direction of this bias is unknown. • A possible Hawthorne effect (HE) may have caused an information bias as employees in the experimental group knew they were part of an intervention, the goal of which was to reduce adverse psychosocial factors at work and their effects on health. • An information bias could have occurred since the work related variables were actually based on self-reported rather than objective measures.

Study limitations (reviewer)	<ul style="list-style-type: none"> No ITT analysis was performed.
Source of funding	<ul style="list-style-type: none"> Quebec Council for Social Research the Canadian Council of Humanities Research the Provincial Ministry of Health and Social Services the Quebec Regional Board of Health and Social Services

Study arms

Participatory (N = 674)

The intervention was conducted at a hospital with 674 eligible participants.

Control (N = 894)

The control hospital had 894 eligible participants

Characteristics

Arm-level characteristics

	Participatory (N = 674)	Control (N = 894)
Age		
18 to 24		
Sample Size	n = 73 ; % = 10.8	n = 110 ; % = 12.3
25 to 34		
Sample Size	n = 127 ; % = 18.8	n = 170 ; % = 19

	Participatory (N = 674)	Control (N = 894)
35 to 44		
Sample Size	n = 242 ; % = 35.9	n = 273 ; % = 30.5
45 or older		
Sample Size	n = 232 ; % = 34.4	n = 341 ; % = 38.1
Gender		
Men		
Sample Size	n = 138 ; % = 20.5	n = 150 ; % = 16.8
Women		
Sample Size	n = 536 ; % = 79.5	n = 744 ; % = 83.2
Ethnicity Not reported		

Outcomes

Study timepoints	Baseline 12 (month) 12 months from the start of the intervention
-------------------------	---

Employee outcomes

	Participatory		Control	
	Baseline	12 (month)	Baseline	12 (month)
	N = 674	N = 674	N = 894	N = 894
<p>Mental wellbeing Self-reported as psychological demands -18 items from Karasek's job content questionnaire (JCQ). SD calculated from SE by reviewer.</p> <p><i>Polarity: Lower values are better</i></p>				
Sample Size	n = 302 ; % = 44.8	n = 301 ; % = 44.7	n = 311 ; % = 34.8	n = 310 ; % = 34.7
Mean/SD	12.4 (2.4)	11.8 (2.4)	13.2 (2.3)	12.9 (2.5)
<p>Mental health symptoms Self-reported - 14 items of the Psychiatric Symptom Index. SD calculated from SE by reviewer.</p> <p><i>Polarity: Lower values are better</i></p>				
Sample Size	n = 302 ; % = 44.8	n = 302 ; % = 44.8	n = 311 ; % = 34.8	n = 308 ; % = 34.4
Mean/SD	21.8 (10.1)	21.1 (10.1)	22.1 (10.1)	22.5 (10)
<p>Job stress Self-reported as work-related burnout - questions from the Copenhagen Burnout Inventory. SD calculated from SE by reviewer.</p> <p><i>Polarity: Lower values are better</i></p>				

	Participatory		Control	
	Baseline	12 (month)	Baseline	12 (month)
		N = 674	N = 674	N = 894
Sample Size	n = 302 ; % = 44.8	n = 302 ; % = 44.8	n = 311 ; % = 34.8	n = 310 ; % = 34.7
Mean/SD	48.1 (10.9)	46.3 (10.9)	49.4 (10.9)	49.4 (10.9)

Mental wellbeing - Participatory vs Control - 12-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (<i>Outcome measure was self-reported</i>)
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low

Section	Question	Answer
Overall bias	Risk of bias judgement	Moderate (Self-reported outcome)

Mental health symptoms - Participatory vs Control - 12-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (Outcome measure was self-reported)
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate (Self-reported outcome)

Job stress - Participatory vs Control - 12-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (<i>Outcome measure was self-reported</i>)
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate (<i>Self-reported outcome</i>)

Study arms

Participatory (N = 674)	
Brief name	Participatory intervention [page 335]
Rationale/theory/Goal	It was hypothesised that an intervention that targeted the psychosocial job environment and integrated care providers' participation would improve the following adverse psychological factors; high psychosocial demands, low decision latitude, low social support, and effort-reward imbalance. It was also hypothesised that the intervention would decrease mental health problems at work. The intervention was implemented according to the

	principles of German health circles, where the ultimate objective is to recognise and eliminate problems at their source [pages 328, 335 and 336]
Materials used	None reported
Procedures used	<ul style="list-style-type: none"> • An intervention team was made up of two researchers, one research assistant, three head nurses and three registered staff nurses (one from each targeted care unit), one beneficiary attendant and one reception clerk, one representative from human resources and one from nursing, as well as two local union representatives (nurses and beneficiary attendants' unions). • Meetings were held where specific adverse psychosocial work factors and solutions were identified. • Team members worked together and sub-committees were created with the objective of collaborating on specific mandates. • After each meeting, a report was produced for validation and diffusion. It included a table listing every adverse psychosocial conditions identified and solutions proposed by IT members. • Team members were also released from their duties after each meeting for the equivalent of a half day to meet with co-workers, disseminate information, and to gather comments and suggestions. Unions' IT members conducted the same exercise with their union members. <p>[page 328]</p>
Provider	Researchers [page 328]
Method of delivery	Team meeting [page 328]
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Eight 3-hour meetings held over a four-month period [page 328]
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported

Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	The hospital administration agreed to free up (with pay) and replace intervention team care providers, allowing them to attend meetings. [page 328]
Control (N = 894)	
Brief name	Control group [page 336]
Rationale/theory/Goal	Not reported
Materials used	Not reported
Procedures used	Not reported
Provider	Not reported
Method of delivery	Not reported
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported

Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None

D.7 Chen 2018

Bibliographic Reference

Chen, Jingqiu; Bamberger, Peter A; Song, Yifan; Vashdi, Dana R; The effects of team reflexivity on psychological well-being in manufacturing teams.; Journal of Applied Psychology; 2018; vol. 103 (no. 4); 443-462

Study details

Study design	Non-randomised controlled trial (NRCT)
Trial registration number	Not reported
Aim	To determine the effects of a team reflexivity intervention on psychosocial wellbeing in manufacturing teams.
Country/geographical location	China
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: private • Industry: manufacturing • Size of organisation: large • Contract type: not reported.

	<ul style="list-style-type: none"> • Seniority: not reported • Income: not reported
Inclusion criteria	Not reported
Exclusion criteria	<ul style="list-style-type: none"> • Employees who had been employed by the company for less than 4 weeks at baseline.
Method of allocation concealment	Not reported
Unit of allocation	Cluster- team
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • No power calculations were reported. • No ITT analysis was reported. • Latent change scores (LCS) were created for all the endogenous variables, as well as for the z-score of hours worked. • Unconflated multilevel modelling techniques were applied using Mplus 7.2. • The variances in mediators (i.e., control, demands, and support) and outcomes (emotional exhaustion, cynicism, and inefficacy) were partitioned into two components: a between-team component and a within-team component. Given that the independent variable (i.e., team reflexivity intervention) varies strictly between teams, its effects on mediators and outcomes must also be assessed at team level. Therefore, the direct and indirect effects of the team reflexivity intervention were tested on mediators and outcomes at the team level, while controlling for the within-team variance components in mediators and outcomes.
Attrition	After exclusion of ineligible participants, 469 participants were assigned to either the intervention or control group based on their team. Outcomes were measured for a total of 463 participants (230 experimental participants and 233 control participants), representing 98.7% of the total eligible population.
Assessments and timepoints	<p>The following outcomes were measured at the following timepoints:</p> <ul style="list-style-type: none"> • Baseline

	<ul style="list-style-type: none"> • 6 weeks from the beginning of the intervention • 9 weeks from the beginning of the intervention <p>Primary outcomes:</p> <ul style="list-style-type: none"> • Emotional exhaustion • Cynicism • Inefficiency • Demand (qualitative overload) • Job control • Support
Study limitations (author)	<ul style="list-style-type: none"> • The experiment was conducted in China potentially limiting our ability to generalize to Western employment contexts. • Participants new to the company were excluded, thus restricting the range of our moderator (team tenure) and potentially limiting the generalizability of our findings. • The analysis focused only on the direct effects of demands, control, and support and did not examine the potential multiplicative and buffering effects of the model components. • Analysis was based on only nine weeks of data. Accordingly, we know little about the sustainability of the effects we captured or about the longer-term health-related consequences that might have emerged after 6 months or a year. • No data were collected on actual team processes at work over this 9-week period. • The control groups' team building activities in theory could have contributed to enhanced trust and rapport among control condition team members, as well as enhanced team coordination competencies. Any such effects may have led members of these teams to perceive fewer demands and to experience more control and support relative to teams in a true control condition (i.e., receiving no special treatment). • The model was tested in a cell-based manufacturing context and on semiautonomous work teams, and therefore may not be generalisable to all work environments.
Source of funding	Chinese National Science Foundation

Study arms**Reflexivity intervention (N = 230)**

36 teams were allocated to the intervention group, and outcomes were reported for 230 individuals.

Control- periodic team building (N = 233)

37 teams were allocated to the control group, and outcomes were presented for 233 individuals.

Characteristics

Study-level characteristics

	Study (N = 469)
Age	
Mean/SD	26.2 (4.7)
Gender	
Men	
Sample Size	n = 262 ; % = 55.9
Ethnicity Not reported	
Socioeconomic status Reported as years of education	
Mean/SD	10.6 (1.8)

Outcomes

Study timepoints	Baseline 9 (week) Outcomes were measured at the end of the 9 week intervention period
-------------------------	--

Employee outcomes

	Reflexivity intervention		Control- periodic team building	
	Baseline	9 (week)	Baseline	9 (week)
	N = 230	N = 230	N = 233	N = 233
Job stress Self-reported- 5 items from Chinese version of the Maslach Burnout Inventory (Emotional Exhaustion) <i>Polarity: Lower values are better</i>				
Mean/SD	2.17 (1.29)	1.7 (1.17)	2.46 (0.61)	2.02 (0.5)

Stress - Reflexivity vs Periodic team building - 9-week follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low

Section	Question	Answer
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (<i>Outcome measure was self-reported</i>)
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate (<i>Self-reported outcome</i>)

Study arms

Reflexivity intervention (N = 230)	
Brief name	Team reflexivity [page 443]
Rationale/theory/Goal	A theoretical model was proposed, where it was hypothesised that a reflexivity intervention would alter qualitative job overload, job control, and colleague support. As a consequence, the intervention would improve emotional exhaustion, cynicism, and inefficiency. [page 444]
Materials used	<ul style="list-style-type: none"> • SED Report Form [page 449]
Procedures used	<ul style="list-style-type: none"> • Teams in the intervention condition underwent training in guided reflexivity on the basis of a post shift debriefing model. • The shift-end debriefing (SED) model occurred at the end of the team's shift. Teams were told that while they should first review all of the shift's major events, they could subsequently opt to focus on whatever number of issues or events they wish as long as these issues had to do with any of the following: team processes and cooperation, work hazards, product quality, and work and reporting processes. • Training was structured around an SED protocol. • The researchers first trained eight senior production workers to serve as SED trainers. These trainers were selected by management, and all had prior leadership experience in the company.

	<ul style="list-style-type: none"> • SED trainers underwent a day-long training session (led by the first and second authors) on the principles of team reflexivity, the SED protocol, and team processes. • Once trained, the SED trainers were each assigned several teams and, with the assistance of the first author, began training their assigned teams. • Daily SEDs were implemented at the start of the third week of the experiment. The role of chair was assigned on a rotating basis, and discussion was guided using a protocol. SED trainers provided guidance where necessary and recorded the progress of the team in executing the SED protocol. • SED chairs asked to submit an “SED Report Form”. <p>[pages 448 and 449]</p>
Provider	<ul style="list-style-type: none"> • Training for SED trainers was led by the researchers. • Team SED training was provided by SED trainers with assistance from a researcher. <p>[page 449]</p>
Method of delivery	<ul style="list-style-type: none"> • Team debriefings • Day long training was provided for trainers. • Training was provided in shift-end debriefing with training sessions. <p>[pages 448 and 449]</p>
Setting/location of intervention	Not reported
Intensity/duration of the intervention	<ul style="list-style-type: none"> • Daily shift-end debriefings (SED) lasted for 4 weeks (20 sessions in total). • Teams initially took about 20–30 min to complete the protocol-based review. However, by the end of the initial 4-week period, teams were completing the protocol in as little as five minutes when no events of particular importance occurred during the shift. • A day-long training session to train the SED trainers. • SED training for teams lasted 1 week and occurred on a daily basis at the end of each team’s respective shift. <p>[page 449]</p>

Tailoring/adaptation	<ul style="list-style-type: none"> Per plan, following the seventh week, the frequency of SED sessions was adjusted to every other day. [page 449]
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	<ul style="list-style-type: none"> With the exception of one team, SED session chairs submitted reports on all sessions held. These reports indicate that team attendance averaged above 90%, with, on average, 93% (SD 3.3%) of those team members attending the session participating in the deliberations. SED chairs reported that SEDs followed the eight-step protocol indicated by the parameters listed on the report form. <p>[Page 449]</p>
Other details	<p>SED trainers were not given any incentive compensation for taking on this role, although some expressed hope that by serving in such a role, they might expedite their advancement into management. The researchers first trained eight senior production workers to serve as SED trainers.</p> <p>[page 449]</p>
Control (N = 233)	
Brief name	Team building programme [Page 449]
Rationale/theory/Goal	A team building programme was provided to reduce the risk of a Hawthorne effect. [page 449]
Materials used	None reported
Procedures used	<ul style="list-style-type: none"> Teams participated in a variety of team-building exercises and games toward the end of their workday. [page 449]

Provider	<ul style="list-style-type: none"> • Team trainer engaged by management [page 449]
Method of delivery	<ul style="list-style-type: none"> • Sessions [page 449]
Setting/location of intervention	Not reported
Intensity/duration of the intervention	<ul style="list-style-type: none"> • 3 sessions [page 449]
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None

D.8 Demerouti 2017

Bibliographic Reference Demerouti, Evangelia; Xanthopoulou, Despoina; Petrou, Paraskevas; Karagkounis, Chrysovalantis; Does job crafting assist dealing with organizational changes due to austerity measures? Two studies among Greek employees.; European Journal of Work and Organizational Psychology; 2017; vol. 26 (no. 4); 574-589

Study details

Study design	Non-randomised controlled trial (NRCT)
Trial registration number	Not reported
Aim	To determine whether job crafting can assist in dealing with organisational changes
Country/geographical location	Greece
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: mixed (private, public and self-employed) • Industry: mixed (central government, local government, national services and organisations, services, commerce, education, finance, management) • Size of organisation: not reported. • Contract type: not reported. • Seniority: not reported • Income: not reported
Inclusion criteria	<ul style="list-style-type: none"> • Organizations that were known to undergo changes due to austerity measures.
Exclusion criteria	Not reported
Method of allocation concealment	Not reported
Unit of allocation	Cluster- work site
Unit of analysis	Individual

Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • No power calculation was reported. • No ITT analysis was performed. • Multilevel analyses with time nested in persons and group membership as a dummy variable after controlling for time, group, and their interaction. • In order to test whether individuals' assessment of changes moderate the link between job crafting and adaptive performance, individuals' assessment of changes as well as the interaction terms between the crafting dimensions and individuals' assessment of changes were added in the equation. • To test the effects of the job crafting intervention on the outcomes of interest, we performed repeated measures ANOVA. • Means of multilevel analyses were performed to determine whether job crafting affected positive affect, openness to change and adaptive performance over time. • Additional analyses were performed to test whether individuals reported higher openness to change and adaptive performance because they experienced more positive affect after practicing job crafting,
Attrition	<p>Of the 150 employees from the intervention site, 43 agreed to participate at T1 (29% response rate). Of the 43 people who participated in the intervention group at T1, 30 participated at T2. Of the 72 employees that were working in the control locations, 45 agreed to participate at T1 (62% response rate). Of the 45 employees who participated in the control group at T1, 42 returned filled in questionnaires at T2.</p>
Assessments and timepoints	<p>The following assessments were made at the following timepoints:</p> <ul style="list-style-type: none"> • Baseline • 4 weeks after the intervention <p>Primary outcomes were:</p> <ul style="list-style-type: none"> • Job crafting • Positive job-related affective wellbeing • Openness to change during austerity measures. • Adaptive performance • Individuals' assessment of changes due to austerity measures

Study limitations (author)	<ul style="list-style-type: none"> Measures were self-reported, which could lead to bias. Sample sizes are small. Participation rates were low. The intervention group reported lower openness to change than the control group in the pre-measurement, which means that particularly participants who were less willing to change participated in the intervention. Follow-up period was short, and we do not have information about the long-term effects.
Study limitations (reviewer)	<ul style="list-style-type: none"> There was no ITT analysis reported.
Source of funding	Research Committee, Aristotle University of Thessaloniki

Study arms

Job crafting intervention (N = 150)

150 employees from the intervention site were invited to participate.

Control (N = 72)

72 employees from the control locations were invited to participate.

Characteristics

Study-level characteristics

	Study (N = 68)
Age	
Mean/SD	43.6 (6.64)
Gender	

	Study (N = 68)
Women	
Sample Size	n = 58 ; % = 81
Ethnicity Not reported	
Socioeconomic status- education	
University educated	
Sample Size	n = 23 ; % = 34

Outcomes

Study timepoints	Baseline 4 (week) 4 weeks after the intervention
------------------	---

Employee outcomes

	Job crafting intervention		Control	
	Baseline	4 (week)	Baseline	4 (week)
	N = 150	N = 150	N = 72	N = 72
Wellbeing Self-reported - Positive job-related affective well-being was measured with the 6 items of the short version of the Job Affective Well-being Scale <i>Polarity: Higher values are better</i>				

	Job crafting intervention		Control	
	Baseline	4 (week)	Baseline	4 (week)
	N = 150	N = 150	N = 72	N = 72
Sample Size	n = 43 ; % = 29	n = 30 ; % = 20	n = 45 ; % = 62	n = 42 ; % = 58
Mean/SD	3.44 (0.81)	3.67 (0.71)	3.6 (0.65)	3.52 (0.79)

Mental wellbeing - Job crafting vs Control - 2-week follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Missing outcome data differed across interventions)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low

Section	Question	Answer
Overall bias	Risk of bias judgement	Serious (Missing outcome data differed across interventions and self-reported outcome)

Study arms

Job crafting (N = 150)	
Brief name	Job crafting
Rationale/theory/Goal	Job crafting is a proactive behaviour enacted by employees to adapt to an uncertain and rapidly transforming work environment. Through job crafting, employees flexibly modify or create the conditions that help them tailor new tasks or roles to their situation. Job crafting helps employees to adjust their work to their preferences and find meaning in it, which is particularly important in times where organizations and individuals must adapt to new realities. The elements of the intervention are based on social cognitive theory, which suggests that the interaction between the person, the behaviour, and the environment is critical for planning behaviour change interventions, underscoring that people are not passive recipients of an intervention. [pages 575 and 579]
Materials used	<ul style="list-style-type: none"> • Small booklet for crafting plans. [page 581]
Procedures used	<ul style="list-style-type: none"> • The training day included some background theory on the JD-R model and job crafting. • Exercises were designed to build awareness of employees' working environment according to the JD-R principles. • A simple job analysis was conducted. • Personal stories were then discussed in sub-groups in order to help each other find ways of crafting. • At the end of the training, employees draw up a personal crafting plan for several weeks. • During the first week, participants worked on increasing job resources. • During the second week they focused on reducing job demands. • During the third week the goal was again to increase resources. • Additionally, each week participants were asked to make time to reflect on what went well and what they learned that week.

	<ul style="list-style-type: none"> • At the end of each week, participants received a reminder with the theme of the coming week and the request to complete the weekly questions. • A month after the postintervention measurement took place, participants met again for a reflection session. <p>[page 581]</p>
Provider	Trainers [page 581]
Method of delivery	<ul style="list-style-type: none"> • Training session • Group discussions <p>[581]</p>
Setting/location of intervention	Not reported
Intensity/duration of the intervention	<ul style="list-style-type: none"> • 3-hour training [page 581]
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None
Control (N = 72)	

Brief name	Not reported
Rationale/theory/Goal	Not reported
Materials used	Not reported
Procedures used	Not reported
Provider	Not reported
Method of delivery	Not reported
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None

D.9 Deneckere 2013

Bibliographic Reference Deneckere S; Euwema M; Lodewijckx C; Panella M; Mutsvari T; Sermeus W; Vanhaecht K; Better interprofessional teamwork, higher level of organized care, and lower risk of burnout in acute health care teams using care pathways: a cluster randomized controlled trial.; Medical care; 2013; vol. 51 (no. 1)

Study details

Study design	Cluster randomised controlled trial
Trial registration number	Not reported
Aim	To evaluate the impact of CPs on interprofessional teamwork in an acute hospital setting
Country/geographical location	Belgium
Setting	<p>Workplace</p> <ul style="list-style-type: none"> • Sector: Public • Industry: Healthcare • Organisation size: Large • Contract type: Not reported. • Seniority: Mix • Income: Not reported
Inclusion criteria	All professionals in the inter-professional team who were at work (not on leave) for 1 week in the 2 month evaluation. each cluster had to include an orthopaedic surgeon or pneumologists, head nurse, nurses, physiotherapists and social workers
Exclusion criteria	None reported

Method of randomisation	Stratified randomisation but method not reported
Method of allocation concealment	Not reported
Unit of allocation	Cluster
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • Sample size calculations were performed at the level of the overall EQCP project and were based on expected improvement in relational coordination. • The researchers determined that for a significance level of 0.05 (2-sided), a sample size of 475 team members per arm was required to obtain a statistical power of 0.80. • Differences in organisational context and individual team member characteristics were determined using chi-squared and t-tests. • Multilevel analyses were performed to measure effect. • Regression models were extended to multilevel models. • The differences in the effect measures were evaluated at the team or individual levels using random-effects logistic or linear regression models, respectively, and accounting for the clustering effect. • The randomization group and the clinical treatment group were included in the model as covariates. • Statistical significance was defined as a 2-sided P-value of <0.05. • All analyses were carried out using SAS 9.2 statistical software.
Attrition	3 clusters dropped out of the intervention group and 4 from the control group (Number of individuals was not reported)
Assessments and timepoints	Job stress and work climate were measured at the end of the intervention period.
Study limitations (author)	<ul style="list-style-type: none"> • Effects on data resulting from the dropout of 7 teams. • Outcomes were measured by self-reporting, which could result in bias. • Baseline assessments were not performed. • There was some variation in the inclusion of key interventions within the care pathways.

	<ul style="list-style-type: none"> Outcomes were only measured at one timepoint, therefore, the long-term effects of the intervention were not assessed.
Study limitations (reviewer)	<ul style="list-style-type: none"> There was no blinding
Source of funding	Not reported

Study arms

Care pathway (N = 346)

20 teams randomised but only 17 reported outcomes (346 individuals)

Usual care (N = 235)

17 teams randomised but only 13 reported outcomes (235 individuals)

Characteristics

Arm-level characteristics

	Care pathway (N = 346)	Usual care (N = 235)
Age		
20–29 years		
Sample Size	% = 27.5	% = 28.5
30–39 years		
Sample Size	% = 25.2	% = 24.7

	Care pathway (N = 346)	Usual care (N = 235)
40–49 years		
Sample Size	% = 22.6	% = 24.3
50–59 years		
Sample Size	% = 23.5	% = 21.7
60-69 years		
Sample Size	% = 0.9	% = 0.9
over 69 years		
Sample Size	% = 0.3	% = 0
Gender Not reported		
Ethnicity Not reported		

Outcomes

Study timepoints	0 (week) Endpoint
-------------------------	-------------------

Employee outcomes

	Care pathway vs Usual care
	0 (week)
	N1 = 235, N2 = 346
Job stress (1 - 10) Reported as emotional exhaustion (UBI) <i>Polarity: Lower values are better</i>	
Custom value	$\beta = -0.57$ (SE = 0.21)
Climate (Not rep) Reported as Team Climate Inventory <i>Polarity: Higher values are better</i>	
Custom value	$\beta = 0.29$ (SE = 0.10)

Job stress - Care pathway vs Usual care - Endpoint

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low

Section	Question	Answer
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Outcome measure was self-reported)</i>
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns <i>(Self-reported outcome)</i>

Climate- Care pathway vs Usual care - Endpoint

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Outcome measure was self-reported)</i>

Section	Question	Answer
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Study arms

Care pathway (N = 346)	
Brief name	Care pathway for improving teamwork [page 100]
Rationale/theory/Goal	Care pathways (CP) are organisational interventions that are widely used quality improvement strategies for (re)organising care processes. The European Pathway Association defines a CP as "a complex intervention for the mutual decision making and organisation of care for a well-defined group of patients for a well-defined period". CPs are multifactorial interventions. CPs have been defining as high-performance work systems that improve organisational performance by strengthening relationships and coordination among team members. [page 100]
Materials used	<ul style="list-style-type: none"> • Feedback report with "as is" situation. • A set of evidence-based key interventions <p>[page 100]</p>
Procedures used	<ul style="list-style-type: none"> • A formative evaluation of the teams' performance before implementation was conducted. • Each team received a set of evidence-based key interventions and a workshop was organised on the content of the key interventions. • Each study coordinator was trained to develop the care pathway based on the findings of the formative evaluation. <p>[page 100 and page 102]</p>
Provider	<ul style="list-style-type: none"> • Researchers [page 100] • The study coordinator- trained to develop the care pathway [page 102]

Method of delivery	Workshop
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	The care pathway was developed according to the results of the formative evaluation [page 102]
Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	None
Usual care (N = 235)	
Brief name	Did not implement care pathway and provided usual care [page 100]
Rationale/theory/Goal	Not applicable
Materials used	Not applicable
Procedures used	Not applicable
Provider	Not applicable

Method of delivery	Not applicable
Setting/location of intervention	Not applicable
Intensity/duration of the intervention	Not applicable
Tailoring/adaptation	Not applicable
Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	None

D.10 Dollard 2014

Bibliographic Reference Dollard, Maureen; Gordon, Jacqueline; Evaluation of a Participatory Risk Management Work Stress Intervention; International Journal of Stress Management; 2014; vol. 21; 27

Study details

Study design	Non-randomised controlled trial (NRCT)
---------------------	--

Trial registration number	Not reported
Aim	To determine whether a participatory risk management intervention, that involves capacity-building workshops and implementation of action plans, is effective in reducing work and organisational stress and improving stress outcomes.
Country/geographical location	Australia
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: public • Industry: not reported • Organisation size: not reported. • Contract type: not reported. • Seniority: mixed (managers and non-managers) • Income: not reported
Inclusion criteria	Not reported
Exclusion criteria	Not reported
Method of allocation concealment	Not reported
Unit of allocation	Cluster (Unit - workgroups)
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • No power calculation was reported. • No ITT analysis was reported. • A multivariate analysis of variance (MANOVA) was performed to test a Group (Intervention vs. Control) by Time (T1 vs. T2) interaction, which reflects the difference between the groups at T1 and T2.

Attrition	At T1, there were N = 605 participants (Intervention n = 94, Control n = 511) and at T2 there were N = 679 participants (Intervention n = 123, Control n = 556) who responded to the ODS. The response rates overall were high (77% at T1; 89% at T2).
Assessments and timepoints	<p>The following assessments were measured at the following timepoints:</p> <ul style="list-style-type: none"> • Baseline • 12 months after the intervention <p>Organization and job design factors measured, as well as stress outcomes including:</p> <ul style="list-style-type: none"> • Work stress • Employee morale • Sickness absence duration
Study limitations (author)	<ul style="list-style-type: none"> • Anonymous data could only be matched at the workgroup level. • Because the organization sought to improve the area's most in need, four of the intervention groups were high risk. The problem is that changes observed could simply be due to the natural tendency for extreme scores to regress to the mean. • A challenge in PAR is that not all workgroups address the same problems, and even if the same issues are targeted, different activities are implemented that vary in efficacy. • Longer follow up times would have been beneficial to determine the long term effects.
Study limitations (reviewer)	<ul style="list-style-type: none"> • Work stress and workplace morale outcomes were self-reported, which could lead to bias. • No ITT analysis was performed.
Source of funding	WorkSafe Victoria

Study arms

Participatory risk management (N = 94)

5 work groups (94 participants at baseline and 123 participants at follow up) received the intervention.

Control (N = 511)

17 work groups (511 individuals at baseline and 556 individuals at follow up) made up the control group.

Characteristics

Study-level characteristics

	Study (N = 605)
Age Not reported	
Gender	
Men	
Sample Size	n = 327 ; % = 54
Women	
Sample Size	n = 278 ; % = 46
Ethnicity Not reported	

Outcomes

Study timepoints	Baseline 12 (month) Outcomes measured at 12 months after the intervention.
-------------------------	---

Employee outcomes

	Participatory risk management		Control	
	Baseline	12 (month)	Baseline	12 (month)
	N = 94	N = 123	N = 511	N = 556
<p>Job stress (1-5) Self-reported - measured by one generic item, “The amount of stress I experience on my job seriously reduces my effectiveness.” <i>Polarity: Lower values are better</i></p>				
Sample Size	n = 93 ; % = 98.9	n = 120 ; % = 97.6	n = 506 ; % = 99	n = 552 ; % = 99.3
Mean/SD	2.7 (1.34)	2.56 (1.36)	2.53 (1.19)	2.5 (1.19)
<p>Culture - employee morale Self-reported- 6 items <i>Polarity: Higher values are better</i></p>				
Sample Size	n = 93 ; % = 98.9	n = 120 ; % = 97.6	n = 506 ; % = 99	n = 552 ; % = 99.3
Mean/SD	2.99 (0.98)	3.44 (0.68)	3.42 (0.84)	3.49 (0.85)
<p>Absenteeism Sickness absence duration data for workgroups were collected from organizational records for the previous 12 months. <i>Polarity: Lower values are better</i></p>				

	Participatory risk management		Control	
	Baseline	12 (month)	Baseline	12 (month)
	N = 94	N = 123	N = 511	N = 556
Sample Size	n = 93 ; % = 98.9	n = 120 ; % = 97.6	n = 506 ; % = 99	n = 552 ; % = 99.3
Mean/SD	8.29 (7.22)	5.91 (3.43)	5.14 (3.81)	5.45 (2.1)

Job stress - Participatory risk management vs Control - 12-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Serious <i>(Intervention groups were selected due to being at high risk)</i>
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of clarity around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>

Section	Question	Answer
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Critical <i>(Selection bias of high-risk groups to the intervention, lack of clarity around missing data and self-reported outcome)</i>

Culture - Participatory risk management vs Control - 12-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Serious <i>(Intervention groups were selected due to being at high risk)</i>
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of clarity around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low

Section	Question	Answer
Overall bias	Risk of bias judgement	Critical <i>(Selection bias of high-risk groups to the intervention, lack of clarity around missing data and self-reported outcome)</i>

Absenteeism - Participatory risk management vs Control - 12-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Serious <i>(Intervention groups were selected due to being at high risk)</i>
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of clarity around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Low
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Selection bias of high-risk groups to the intervention and lack of clarity around missing data)</i>

Study arms

Participatory risk management (N = 94)	
Brief name	Stress risk assessment and participatory problem-solving process [page 30]
Rationale/theory/Goal	The stress management intervention combined risk management principles, best practice stress organisational development processes, intervention principles, and participatory action research principles. The study involved top management support and a capacity building process that enabled information sharing, the time needed for the involvement of workers, and the allocation of resources to address risks. [page 29]
Materials used	<ul style="list-style-type: none"> Organisational development survey [page 32]
Procedures used	<ul style="list-style-type: none"> Risk assessment was undertaken using the organisational development survey. Group members attended workshops, where the goal was to develop stress reduction action plans. Workshops provided education about common stress factors, including work organization, job design, and stress reactions. Each workgroup was provided with data-driven risk reports, which were derived from their workgroup's response to the ODS, along with grievance and sickness absence data. Risks were prioritized by group consensus, and action plans were formulated. Action plans, approved by the health and safety committee, were implemented over a 6-month period. In some cases external facilitators coached managers to implement agreed-upon action plans. <p>[pages 32 and 33]</p>
Provider	<ul style="list-style-type: none"> External expert in organizational psychology [page 32]
Method of delivery	<ul style="list-style-type: none"> Workshops [page 32]
Setting/location of intervention	Not reported
Intensity/duration of the intervention	<ul style="list-style-type: none"> Weekly (4 hr x 4 weeks) workshops Action plans implemented over a 6 month period.

	[pages 32 and 33]
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	<ul style="list-style-type: none"> • Workgroup members voluntarily participated in workshops (3.6 on average). [page 32]
Other details	none
Control (N = 511)	
Brief name	Control workgroups [page 30]
Rationale/theory/Goal	Not reported
Materials used	Not reported
Procedures used	Not reported
Provider	Not reported
Method of delivery	Not reported
Setting/location of intervention	Not reported

Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None

D.11 Dubbelt 2019

Bibliographic Reference Dubbelt, Lonneke; Demerouti, Evangelia; Rispens, Sonja; The value of job crafting for work engagement, task performance, and career satisfaction: Longitudinal and quasi-experimental evidence.; European Journal of Work and Organizational Psychology; 2019; vol. 28 (no. 3); 300-314

Study details

Study design	Non-randomised controlled trial (NRCT)
Trial registration number	Not reported
Aim	To determine whether job crafting is valuable for improving work engagement, task performance, and career satisfaction.

Country/geographical location	The Netherlands
Setting	<p>Setting:</p> <ul style="list-style-type: none"> • Sector: public • Industry: education • Size of organisation: large • Contract type: Not reported. • Seniority: not reported • Income: not reported
Inclusion criteria	<ul style="list-style-type: none"> • Employees of the university
Exclusion criteria	Not reported
Method of allocation concealment	Not reported
Unit of allocation	Individual
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • No power calculation was reported. • No ITT analysis was reported. • Means, standard deviations, and correlations of the study variables were provided. • The data have a repeated measures design in which time points (Level 1) are nested within individuals (Level 2). Therefore, multi-level regression analyses were conducted in MLwiN (Rasbash, Steele, Browne, & Goldstein, 2009) to compare the intervention group with the control group over time. • Moderation analyses were conducted to test the effect of the intervention on the study variables using dummy variables (i.e., time of measurement was coded as T1 = 0 and T2 = 1, group belonging was coded as control group = 0 and intervention group = 1) and the interaction term of the dummy variables. • Simple slopes for the intervention and control group were calculated with the online utilities of Preacher, Curran, and Bauer (2006) to illustrate the moderation effects.

	<ul style="list-style-type: none"> The mediation effect of job crafting was examined following the four steps of Baron and Kenny (1986).
Attrition	<p>The total sample at T1 consisted of 60 employees in the intervention group and 59 employees in the control group. At T2, there was a dropout of 31.6% in the intervention group and a dropout of 35.6% in the control group leaving N = 40 and N = 38 for experimental and the control group respectively.</p>
Assessments and timepoints	<p>The following outcomes were measured at the following timepoints:</p> <ul style="list-style-type: none"> Baseline 6 weeks after the intervention <p>Primary outcomes measures were:</p> <ul style="list-style-type: none"> seeking challenges seeking resources decreasing demands work engagement task performance career satisfaction
Study limitations (author)	<ul style="list-style-type: none"> Participants drop out could affect the power of the study. The follow-up period was 6 weeks after the intervention; therefore, we do not know the longer term effects. Participants volunteered to be involved in the studies, which could lead to bias. Measures were based on self-reports. A similar study was conducted at the same university, and it is unknown whether this could have affected participation or cause bias. The internal consistencies of seeking resources and decreasing demands were rather low.
Study limitations (reviewer)	None
Source of funding	Not reported

Study arms

Job crafting (N = 60)

60 individuals participated in the job crafting intervention in study 2.

Control (N = 59)

59 participants participated in the control group in study 2.

Characteristics

Arm-level characteristics

	Job crafting (N = 60)	Control (N = 59)
Age		
Mean/SD	40.8 (9.9)	44.8 (13.1)
Gender		
Women		
Sample Size	n = 38 ; % = 63.3	n = 35 ; % = 59.3
Ethnicity Not reported		

Outcomes

Study timepoints	Baseline 6 (week) 6 weeks after the intervention
-------------------------	---

Employee outcomes

	Job crafting		Control	
	Baseline	6 (week)	Baseline	6 (week)
	N = 60	N = 60	N = 59	N = 59
Wellbeing- work engagement Self-reported- two sub-scales of the short Utrecht Work Engagement Scale <i>Polarity: Higher values are better</i>				
Sample Size	n = 60 ; % = 100	n = 40 ; % = 31.6	n = 59 ; % = 100	n = 38 ; % = 35.6
Mean/SD	3.32 (1.27)	3.66 (1.16)	3.76 (1.18)	3.73 (0.98)
Job satisfaction- career satisfaction Self-reported- 3 items <i>Polarity: Higher values are better</i>				
Sample Size	n = 60 ; % = 100	n = 40 ; % = 31.6	n = 59 ; % = 100	n = 38 ; % = 35.6
Mean/SD	3.81 (1.52)	4.05 (1.38)	4.31 (1.49)	4.42 (1.24)

Mental wellbeing - Job crafting vs Control - 6-week follow-up

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (<i>Outcome measure was self-reported</i>)
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate (<i>Self-reported outcome</i>)

Job satisfaction - Job crafting vs Control - 6-week follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low

Section	Question	Answer
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (<i>Outcome measure was self-reported</i>)
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate (<i>Self-reported outcome</i>)

Study arms

Job crafting (N = 60)	
Brief name	Job crafting [page 305]
Rationale/theory/Goal	The job crafting intervention was designed in line with job crafting theory and experiential learning theory. The idea of job crafting is that employees can increase their person-job fit by adapting the job characteristics to their personal needs and ability. When these factors are in balance, the employee is likely to experience a good fit to the job. [pages 301 and 305]
Materials used	Booklet with a short summary of the workshop and space to write down their individual job crafting goals. [page 307]
Procedures used	<ul style="list-style-type: none"> The literature was reviewed, and interviews were performed to assess the specific needs of both academic (N = 4) and supportive (N = 4) staff within this university. These findings were used to develop the intervention workshop.

	<ul style="list-style-type: none"> A workshop was provided where the trainers focused on participants' needs, past experiences, and present crafting behaviors. These workshops were held with a maximum of 14 participants per workshop. <p>[page 307]</p>
Provider	<ul style="list-style-type: none"> Trainers who were organizational psychologists and experts in the field of job characteristics and training job crafting behavior. [page 307]
Method of delivery	Workshop [page 307]
Setting/location of intervention	Not reported
Intensity/duration of the intervention	4-hour workshop
Tailoring/adaptation	The content of the workshop was adapted to reflect the findings of the interviews performed with staff. [page 307]
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None
Control (N = 59)	
Brief name	Control group [page 306]

Rationale/theory/Goal	Not reported
Materials used	Not reported
Procedures used	Not reported
Provider	Not reported
Method of delivery	Not reported
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	none

D.12 Engstrom 2005

Bibliographic Reference Engstrom, M; Ljunggren, B; Lindqvist, R; Carlsson, M; Staff perceptions of job satisfaction and life situation before and 6 and 12 months after increased information technology support in dementia care.; Journal of telemedicine and telecare; 2005; vol. 11 (no. 6); 304-309

Study details

Study design	Non-randomised controlled trial (NRCT)
Trial registration number	Not reported
Study start date	01-Jan-2002
Study end date	01-Feb-2003
Aim	To determine whether increased information technology support in dementia care is effective in improving job satisfaction and life situation of staff.
Country/geographical location	Sweden
Setting	Workplace: <ul style="list-style-type: none">• Sector: not reported• Industry: Social care (residential)• Organisation size: medium• Contract type: mixed (part time and full time)• Seniority: not reported• Income: not reported
Inclusion criteria	Not reported

Exclusion criteria	Not reported
Method of allocation concealment	Not reported
Unit of allocation	Cluster (unit)
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • No power calculations were reported. • No ITT analysis was reported. • Student's t-test and Fisher's exact test were used to examine differences between experimental and control groups at baseline. • Separate, repeated-measures analyses of variance (ANOVA) tests were performed with differences over time, both between and within groups.
Attrition	The total number of eligible staff at baseline was 59 (experimental: n=27; control: n=32). 33 participants responded at 12 month follow up (experimental: n=17; control: n=16), which corresponds to 56% of the eligible population (experimental: 63%; control: 50%).
Assessments and timepoints	<p>The following outcomes were measured at the following timepoints:</p> <ul style="list-style-type: none"> • Baseline • 6 months after implementation of the intervention • 12 months after implementation of the intervention <p>Primary outcomes were:</p> <ul style="list-style-type: none"> • Satisfaction with work (including psychosomatic health aspects) • Life satisfaction • Sense of coherence

Study limitations (author)	<ul style="list-style-type: none"> • The study was not randomised. • The sample size was small. • There was a high dropout rate.
Study limitations (reviewer)	<ul style="list-style-type: none"> • Measures were self-reported. • 94% of the study population were women, therefore, the results may not be generalisable to all workplaces.
Source of funding	<ul style="list-style-type: none"> • The Swedish Order of Freemasons • The Swedish Dementia Association • The Contact Centre at the University of Gävle (small and medium sized companies) • The University of Gävle

Study arms

IT support (N = 17)

27 participants were eligible to participate in the increased IT support intervention group.

Control (N = 16)

32 participants were eligible to participate in the control group.

Characteristics

Arm-level characteristics

	IT support (N = 17)	Control (N = 16)
Age Reported from n=17 in the experimental group, and n=16 in the control group		
Mean/SD	40 (11)	42 (9)

	IT support (N = 17)	Control (N = 16)
Gender Reported from n=17 in the experimental group, and n=16 in the control group		
Female		
Sample Size	n = 17 ; % = 100	n = 14 ; % = 87.5
Ethnicity Not reported		

Outcomes

Study timepoints	Baseline 12 (month) 12 month follow up from implementation.
-------------------------	--

Employee outcomes

	IT support		Control	
	Baseline	12 (month)	Baseline	12 (month)
	N = 27	N = 27	N = 32	N = 32
job satisfaction (0 - 100) Self-reported- satisfaction with job questionnaires <i>Polarity: Higher values are better</i>				
Sample Size	n = 17 ; % = 63	n = 17 ; % = 63	n = 16 ; % = 50	n = 16 ; % = 50
Mean/SD	66 (8)	77 (8)	62 (10)	62 (7)

	IT support		Control	
	Baseline	12 (month)	Baseline	12 (month)
	N = 27	N = 27	N = 32	N = 32
Quality of life (0 - 100) Self-reported- Life Satisfaction Questionnaire (LSQ) <i>Polarity: Higher values are better</i>				
Sample Size	n = 17 ; % = 63	n = 17 ; % = 63	n = 16 ; % = 50	n = 16 ; % = 50
Mean/SD	81 (6)	85 (6)	77 (9)	75 (12)
Job stress (0 - 100) Reported as perceived stress. <i>Polarity: Higher values are better</i>				
Sample Size	n = 17 ; % = 63	n = 17 ; % = 63	n = 16 ; % = 50	n = 16 ; % = 50
Mean/SD	69 (20)	77 (14)	68 (16)	68 (18)

Job satisfaction - IT support vs Control - 12-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low

Section	Question	Answer
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Uncertainty around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Uncertainty around missing data and self-reported outcomes)</i>

Quality of life - IT support vs Control - 12-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low

Section	Question	Answer
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Uncertainty around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Uncertainty around missing data and self-reported outcomes)</i>

Job stress - IT support vs Control - 12 month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low

Section	Question	Answer
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate (<i>Uncertainty around missing data</i>)
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (<i>Outcome measure was self-reported</i>)
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious (<i>Uncertainty around missing data and self-reported outcomes</i>)

Study arms

IT support (N = 27)	
Brief name	Increased information technology support in dementia care [page 305]
Rationale/theory/Goal	Increased use of IT in dementia may be beneficial in supporting care staff in the workplace, and consequently improving psychosocial job satisfaction, psychosomatic health, quality of care, life satisfaction and sense of coherence. The aim of the technology was to allow people with dementia to walk more freely in the residential living facility, as well as to facilitate higher security for staff and residents. [pages 304 and 305]
Materials used	<ul style="list-style-type: none"> IT solutions such as passage alarms, fall detectors, movement detectors and sensor-activated lights. Website Computers <p>[page 305]</p>
Procedures used	<ul style="list-style-type: none"> IT solutions such as passage alarms, fall detectors, movement detectors and sensor-activated lights were installed.

	<ul style="list-style-type: none"> • Relatives were informed about the facility via a homepage on the internet, and email communication with staff was offered. • All staff received an internet connection and email address, and staff were updated with news on the facility by manager and registered nurse. • Units received additional computers, including one placed in the living room/kitchen. • IT support was developed through collaboration with staff and a technician. <p>[page 305]</p>
Provider	<p>Technician</p> <p>[page 305]</p>
Method of delivery	<ul style="list-style-type: none"> • Email communication • Access to technology <p>[page 305]</p>
Setting/location of intervention	<p>Workplace (care facility) [page 305]</p>
Intensity/duration of the intervention	<p>Implementation took place over 4 months. [page 305]</p>
Tailoring/adaptation	<p>Not reported</p>
Unforeseen modifications	<p>Not reported</p>
Planned treatment fidelity	<p>Not reported</p>
Actual treatment fidelity	<p>Not reported</p>

Other details	None
Control (N = 32)	
Brief name	Usual care [page 305]
Rationale/theory/Goal	Not reported
Materials used	Not reported
Procedures used	Not reported
Method of delivery	Not reported
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None

D.13 Framke 2016

Bibliographic Reference Framke, Elisabeth; Sorensen, Ole Henning; Pedersen, Jacob; Rugulies, Reiner; Effect of a participatory organizational-level occupational health intervention on job satisfaction, exhaustion and sleep disturbances: results of a cluster randomized controlled trial.; BMC public health; 2016; vol. 16 (no. 1); 1210.

Framke, Elisabeth, Sørensen, Ole Henning, Pedersen, Jacob et al. (2016) Effect of a participatory organizational-level occupational health intervention on short-term sickness absence: a cluster randomized controlled trial. Scandinavian Journal of Work, Environment & Health: 192-200

Study details

Study design	Cluster randomised controlled trial
Trial registration number	ISRCTN16271504
Study start date	Sep-2010
Study end date	Jun-2013
Aim	To examine whether a participatory organisational-level intervention is effective in increasing job satisfaction, and reducing exhaustion, sleep disturbances and absenteeism in pre-school employees.
Country/geographical location	Denmark
Setting	<p>Workplace</p> <ul style="list-style-type: none"> • Sector: Public • Industry: Education • Organisation size: Small • Contract type: not reported. • Seniority: mixed leaders, nurses, assistants and others

	<ul style="list-style-type: none"> Income: not reported
Inclusion criteria	<p>All pre-schools in the Municipality of Copenhagen with ≥ 10 employees were eligible for the study.</p> <p>Employees were eligible if they were employed and present during the time of the baseline questionnaire measurements.</p>
Exclusion criteria	None reported
Method of randomisation	Random number generator
Method of allocation concealment	Not reported
Unit of allocation	Cluster (Workplace)
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<p>Power calculation not reported.</p> <p>Intention to treat not reported.</p> <p>Genmod procedure in SAS, used to examine differences in changes of the outcome variables between the intervention and the control group during follow-up in a mixed model with a repeated statement to account for the clustering effect of workplaces</p>
Attrition	<p>Intervention group- 423 out of 944 (44.8%) had data at follow-up.</p> <p>Control group- 241 out of 616 (37.2%) had data at follow-up</p>
Assessments and timepoints	<p>Baseline questionnaire and follow-up questionnaire at 24 months.</p> <p>Absenteeism was assessed in the 12 months prior to the intervention, and in 29 months from the start of the intervention.</p>

Study limitations (author)	<p>Intervention and control group participants filled in questionnaires after randomization.</p> <p>Outcome variables were measured using single items; this meant that only limited aspects of the outcome variables were measured.</p> <p>There was a long follow-up period.</p>
Study limitations (reviewer)	None
Source of funding	<p>Danish Prevention Fund</p> <p>Danish Working Environment Research Fund</p>

Study arms

Participatory (N = 944)	
44 intervention workplaces	
Aim	To examine whether a participatory organisational-level intervention is effective in increasing job satisfaction and reducing exhaustion and sleep disturbances in pre-school employees.
Setting	Education- municipal press-schools.
Inclusion criteria	Employees were eligible if they were employed and present during the time of the baseline questionnaire measurements.
Method of randomisation	Not reported
Unit of allocation	Workplace

Statistical method(s) used to analyse the data	Mean and standard deviation
Attrition	Intervention group- 44.8% Control group- 37.2%
Assessments and timepoints	Baseline questionnaire and follow-up questionnaire at 24 months
Study limitations (reviewer)	There is a lack of information about how the study population was randomised.
Control (N = 616)	
34 control workplaces	

Characteristics

Arm-level characteristics

	Participatory (N = 944)	Control (N = 616)
Age		
Mean/SD	42.9 (10.4)	44.9 (9.8)
Gender		
Female		
Sample Size	n = 368 ; % = 87	n = 217 ; % = 90

	Participatory (N = 944)	Control (N = 616)
Ethnicity Not reported		
Socioeconomic status Not reported		

Outcomes

Study timepoints	Baseline 24 (month) 24-month follow up from baseline for job satisfaction and exhaustion outcomes 29 (month) 29-month follow-up from baseline for absenteeism outcome.
-------------------------	--

Employee outcomes

	Participatory			Control		
	Baseline	24 (month)	29 (month)	Baseline	24 (month)	29 (month)
	N = 944	N = 994	N =	N = 616	N = 616	N =
job satisfaction (1-4) Measured with item: 'Regarding your work in general. How satisfied are you with your job as a whole, everything taken into consideration?' <i>Polarity: Higher values are better</i>						
Sample Size	n = 409 ; % = 43.3	n = 409 ; % = 43.3	empty data	n = 228 ; % = 37	n = 228 ; % = 37	empty data

	Participatory			Control		
	Baseline	24 (month)	29 (month)	Baseline	24 (month)	29 (month)
	N = 944	N = 994	N =	N = 616	N = 616	N =
Mean/SD	3.19 (0.57)	3.2 (0.54)	<i>empty data</i>	3.02 (0.7)	3.09 (0.62)	<i>empty data</i>
Exhaustion (1-6) Measured with item: 'Within the past two weeks, how much of the time have you felt lacking in energy and strength?' <i>Polarity: Lower values are better</i>						
Sample Size	n = 411 ; % = 43.5	n = 411 ; % = 43.5	<i>empty data</i>	n = 234 ; % = 38	n = 234 ; % = 38	<i>empty data</i>
Mean/SD	2.72 (1.13)	2.56 (1.17)	<i>empty data</i>	3.01 (1.26)	2.73 (1.16)	<i>empty data</i>

Employee outcomes

	Participatory vs Control		
	Baseline	24 (month)	29 (month)
	N1 = , N2 =	N1 = , N2 =	N1 = 1279, N2 = 1760
absenteeism			

	Participatory vs Control		
	Baseline	24 (month)	29 (month)
	N1 = , N2 =	N1 = , N2 =	N1 = 1279, N2 = 1760
Short-term sickness absence - Adjusted for sex, age, job group, type of workplace, workplace size and workplace average level of short term absence in previous 12 months. <i>Polarity: Not set</i>			
Relative risk/95% CI	<i>empty data (empty data to empty data)</i>	<i>empty data (empty data to empty data)</i>	0.89 (0.83 to 0.96)

Job satisfaction - Participatory vs Control- 24-month follow-up

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Some concerns (Significant differences in baseline outcome variables)
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Some concerns (Outcome measure was self-reported)
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Some concerns (High attrition)

Section	Question	Answer
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Self-reported outcome)</i>
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns <i>(Self-reported outcome measures and high attrition)</i>

Exhaustion - Participatory vs Control - 24-month follow-up

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Some concerns <i>(Significant differences in baseline outcome variables)</i>
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Some concerns <i>(Outcome measure was self-reported)</i>
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Some concerns <i>(High attrition)</i>
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Self-reported outcome)</i>

Section	Question	Answer
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (Self-reported outcome measures and high attrition)

Study arms

Participatory intervention (N = 944)	
Brief name	Organisational-level participatory approach for improving working environment [page 2]
Rationale/theory/Goal	The aim of organizational-level occupational health interventions is to reduce health-hazardous and enhance health-promoting working conditions. Participatory organisational interventions may have a positive impact on employees' health because they improve job control. [page 2]
Materials used	None reported
Procedures used	<ul style="list-style-type: none"> • A steering group was formed, including the pedagogical leader, two employee representatives, the shop steward and the health and safety representative. • The steering group received implementation support, as well as intervention activities such as seminars and workshops to develop and implement workplace specific intervention activities using a participatory approach, change management, workplace culture and evaluation tools. • Based on the common intervention activities and consultants implementation support, the steering groups developed and implemented workplace specific intervention activities involving all employees. <p>[page 4]</p>
Provider	<ul style="list-style-type: none"> • A professional working environment consultant
Method of delivery	Seminars, workshops and implementation support from a consultant [page 4]

Setting/location of intervention	Not reported
Intensity/duration of the intervention	<ul style="list-style-type: none"> • Planning and coordination of intervention- 12 months • Development of specific activities- 5 months • Implementation- 16 months <p>[page 4]</p>
Tailoring/adaptation	Not applicable
Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	None
Control group (N = 616)	
Brief name	Control pre-school workplaces- no further information given [page 2]
Rationale/theory/Goal	Not applicable
Materials used	Not applicable
Procedures used	Not applicable
Provider	Not applicable

Method of delivery	Not applicable
Setting/location of intervention	Not applicable
Intensity/duration of the intervention	Not applicable
Tailoring/adaptation	Not applicable
Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	None

D.14 Fisher, 2020

Bibliographic Reference Fisher, Harriet; Harding, Sarah; Bell, Sarah; Copeland, Lauren; Evans, Rhiannon; Powell, Jillian; Araya, Ricardo; Campbell, Rona; Ford, Tamsin; Gunnell, David; Murphy, Simon; Kidger, Judi; Delivery of a Mental Health First Aid training package and staff peer support service in secondary schools: a process evaluation of uptake and fidelity of the WISE intervention.; Trials; 2020; vol. 21 (no. 1); 745

Study details

Trial registration number	ISRCTN 95909211
----------------------------------	-----------------

Study start date	Apr-2016
Study end date	Jun-2016
Aim	Report process outcomes and measures related to the uptake and fidelity of the MHFA training package, the teacher mental health awareness-raising session, and the staff peer support service within secondary schools in England and Wales.
Country/geographical location	England and Wales
Setting	Public sector: Secondary schools
Inclusion criteria	Not specified: Randomization undertaken by school - those secondary schools who expressed an interest in participation were stratified into three levels according to free school meal eligibility (high, medium and low compared to the national average) and local authority (Bristol / non Bristol). The interviews/focus groups that constitute this study are taken from WISE trainers (n=6) and training course attendees (Intervention arm: focus groups - n=4 to 8)
Exclusion criteria	Not specified
Method of randomisation	This study is a process evaluation of uptake and fidelity of a cRCT (the WISE intervention). cRCT was allocated by school. The process evaluation uses a selection of participants from the intervention arm of which the sample procedures are not specified. The randomization for the cRCT was undertaken by school (n=25) to the intervention or control arm.
Method of allocation concealment	This study is a process evaluation of uptake and fidelity of a cRCT (the WISE intervention). cRCT was allocated by school. The process evaluation uses a selection of participants from the intervention arm of which the sample procedures are not specified.
Unit of allocation	This study is a process evaluation of uptake and fidelity of a cRCT (the WISE intervention). cRCT was allocated by school. The process evaluation uses a selection of participants from the intervention arm of which the sample procedures are not specified.
Unit of analysis	This study is a process evaluation of uptake and fidelity of a cRCT (the WISE intervention). cRCT was allocated by school. The process evaluation uses a selection of participants from the intervention arm of which the sample procedures are not specified.

Statistical method(s) used to analyse the data	Interviews with trainers and peer supporters were audio recorded and transcribed verbatim. Interview data were analysed using thematic analysis. Separate coding trees were developed through an iterative process for each dataset. Independent coding of two transcripts for each dataset was undertaken. A priori codes that map onto the process evaluation domains were included in the initial coding trees, along with novel codes that emerged from the data. Codes and their meaning were agreed between team members in an ongoing dialogue. Codes were then assembled into themes; candidate themes were reviewed, refined and confirmed by the team, and then compared across datasets. Qualitative analyses were assisted with the QSR NVivo11 software.
Attrition	Not applicable
Assessments and timepoints	Unclear. Reference is made to feedback meetings at 6 months and 18 months post training but it is not clear if this is when the qualitative data was collected.
Theme 1	<p>Needs of the group.</p> <p>The need to exhibit flexibility in relation to choice of materials or timetabling of exercises depending on the needs of the group:</p> <p><i>“You’re not meant to go off the planned route really but if the room is slumping slightly you can kind of get them sort of reenergised for a little while and get them involved in something” [Trainer five].</i></p> <p>Note and respond to dynamics within the group, to help ensure more effective participation by attendees.</p> <p><i>“I think it’s a general thing about watching your group, seeing how they’re interacting, and making sure that they are interacting about the subject matter” [Trainer three].</i></p>
Theme 2	<p>Location of the Mental Health First Aid training delivery</p> <p>Delivery of the MHFA training package usually took place on the school site, either during an in-service training (INSET) day (for the 1-day training course) or usual school day. Being on-site resulted in interruptions to the delivery of training in some schools, due to competing priorities of school staff, such as resolving student incidents, performance management meetings and break duties</p> <p><i>“There was an incident in the school that afternoon, which required several members of staff to have to leave in the afternoon and go and do things and come back. I guess that’s just the nature of life inside a school” [Trainer two].</i></p>

	<p>Being flexible in delivery during such interruptions, to ensure coverage of sufficient content.</p> <p><i>“Frequently I was having to move the day around or rejig, to make sure they covered the most important points” [Trainer three].</i></p>
Theme 3	<p>Scheduling MHFA training within the school timetable</p> <p>Trainers reported a reduction in time available due to expectations of delivering the course within a school day, with set break and lunchtimes and other scheduled school events being prioritised:</p> <p><i>“We couldn’t start at eight thirty because it was an inset day and the Principal wanted staff to come and join the main assembly for a talk. So that pushed it beyond nine o’clock” [Trainer four].</i></p> <p>Trainers had to be adaptive in their delivery style to ensure that key materials were covered within a shorter timescale:</p> <p><i>“We’re not going to be pedantic about timescales...we’ll just go with the flow of the school day and just stop and start when it automatically fits” [Trainer six].</i></p>
Theme 4	<p>Time</p> <p>Challenges in setting up the peer support service.</p> <p><i>“...it might have prompted a little bit more conversation and discussion about what do we do? But there wasn’t a huge amount of that and the course doesn’t really lend itself, because again, you’ve got to get through this and that” [Trainer four].</i></p> <p>Difficulty in finding further time to meet was noted as the reason that some groups failed to meet at all even to set the service up, and no groups were meeting a year on:</p> <p><i>“If we’ve got half an hour free at all it will be different times in the day.”</i></p> <p><i>“No, not as a whole group. We had a few meetings in the term after the training, but even then, it was a real struggle to get people. And once you get the same people over and over, you start to think, well it’s not good” [School 1D, phase two].</i></p>

	<p>There was a struggle reported for some to find the time and space to meet with staff who wanted support.</p>
Theme 5	<p>Flexibility</p> <p>The guidance was deliberately flexible, to ensure the peer support service could be implemented in a realistic and sustainable way in each school context. But one trainer observed that in at least one group this added an additional complexity to the peer support role that may have been counterproductive to getting the service going.</p> <p><i>“...they got really bogged down in policy and procedure and then some people said, well I’m not going to be comfortable doing this if, I want to know” [Trainer six].</i></p>
Theme 6	<p>Environment/location/space</p> <p>Some reflected that it is hard to find a confidential space within a school as many of the spaces have staff and students coming and going on a regular basis. This could have had an effect on the staff approaching peer supporters and the quality of the conversation undertaken.</p> <p><i>“And also, finding a place at that time as well... I was seeing someone after school, and we were chatting, talking about something they were a bit concerned about, and then somebody else just walked in and just stood there. I didn’t want to say, this is a private, a mentoring, this is confidential. So this person doesn’t want me telling somebody else that, so that was difficult.....I didn’t know what to do because I didn’t want to embarrass the person that was there, I wanted to be rude to the person who just stood there but I couldn’t, and they still didn’t go, they still didn’t get the message” [School 2 L, phase two].</i></p>
Theme 7	<p>Support and leadership</p> <p>To address some of these implementation problems such as lack of time and lack of clarity over policies, stronger support and recognition from senior leadership was needed.</p> <p><i>“And I think that maybe needs to be addressed because we want to have more of an impact. Then actually, we need to have that recognition, as to the role that we are playing. And perhaps sitting down with the Head and, as a group of people, this is our plan, how will you support us, kind of thing because it is really important” [School 2 L, phase 1].</i></p>
Study limitations (author)	<p>The process data was collected from intervention schools only, it was not possible to blind researchers during data collection but as research questions were established a priori this reduces the risk of reporting bias. As study researchers undertook interviews and focus groups, participants may have been influenced to respond more positively. MHFA training package occurred in case study schools only so findings may not be representative of the experience of the other intervention schools participating in the study. 32.2% (n=36) did not complete a log in at least</p>

	<p>one time point and it is unclear what impact that this had on findings. There was discordance between teacher and peer supporter-reported use of the service making it difficult to accurately report the reach of the intervention. The study did not recruit users of the peer supporters.</p> <p>to take part in the study so their views on how helpful the peer support service was and whether the peer supporters appeared to make use of the MHFA training are not captured.</p>
Study limitations (reviewer)	There is a lack of clarity regarding how the study participants were selected from intervention arm schools for the study. Reference is made to triangulation to inform the study overarching aim but it's not clear if this has taken place.
Source of funding	Joint funding (MR/KO232331/1) from the British Heart Foundation, Cancer Research UK, Economic and Social Research Council, Medical Research Council, the Welsh Government and the Wellcome Trust, under the auspices of the UK Clinical Research Collaboration.

Study arms

Mental Health First Aid training package (N = 12)

MHFA training course designed to teach lay people first aid skills to support others with mental health problems. The training aims to teach individuals practical skills that can be used to identify signs and symptoms of mental health difficulties and provide confidence in guiding people towards appropriate support. 24 schools participated in a cluster RCT. This paper considers interviews with WISE trainers (n=6) and focus groups with training course attendees (n=4-8)

Characteristics

Study-level characteristics

Characteristic	Study (N = 12)
Age	NR
Nominal	
Gender	NR
Nominal	
Ethnicity	NR

Characteristic	Study (N = 12)
Nominal	

Critical appraisal - CASP qualitative checklist V2 (updated version use now)

Section	Question	Answer
Aims of the research	Was there a clear statement of the aims of the research?	Yes <i>(To report process outcomes and measures related to the uptake and fidelity of the Mental Health First Aid (MHFA) training package, the teacher mental health awareness-raising session, and the staff peer support service within secondary schools in England and Wales.)</i>
Appropriateness of methodology	Is a qualitative methodology appropriate?	Yes <i>(Process evaluation seeking the experiences of participants to provide insights into the uptake and fidelity of the Mental Health First Aid (MHFA) training package, the teacher mental health awareness-raising session, and the staff peer support service within secondary schools in England and Wales)</i>
Research Design	Was the research design appropriate to address the aims of the research?	Yes <i>(To assess the fidelity and quality of the training semi-structured interviews (n = 6) were conducted with a subgroup of the trainers who were purposively sampled to ensure that a representative from each of the 12 intervention schools was interviewed as 1 of 3 measurements of intervention fidelity and quality (there were also observations of training and training checklists/evaluation forms). To assess the fidelity of peer support a convenience sample of 1–2 peer supporters from intervention schools were invited to attend a feedback meeting with the study team at 6 and 18 months after training via a structured list of questions that assessed adherence to each item of the peer support service guidance. In case study schools, a convenience sample (based on their availability to attend) of peer supporters took part in focus groups (n = 8) held at their school at 6 and 12 months post-intervention delivery.)</i>
Recruitment Strategy	Was the recruitment strategy appropriate to the aims of the research?	Yes <i>(Semi-structured interviews (n = 6) were conducted with a subgroup of the trainers who were purposively sampled to ensure that a representative from each of the 12 intervention schools were interviewed. To assess the fidelity of peer support a convenience sample of 1–2 peer supporters from intervention schools were invited to</i>

Section	Question	Answer
		<i>attend a feedback meeting at 6 and 18 months after training via a structured list of questions that assessed adherence to each item of the peer support service guidance. In case study schools, a convenience sample (based on their availability to attend) of peer supporters took part in focus groups (n = 8) held at their school at 6 and 12 months post-intervention delivery.)</i>
Data collection	Was the data collected in a way that addressed the research issue?	Yes <i>(To assess the fidelity and quality of the training semi-structured interviews (n = 6) were conducted with a subgroup of the trainers. To assess the fidelity of peer support a convenience sample of 1–2 peer supporters from intervention schools were invited to attend a feedback meeting at 6 and 18 months after training via a structured list of questions that assessed adherence to each item of the peer support service guidance; and in case study schools, a convenience sample (based on their availability to attend) of peer supporters took part in focus groups (n = 8) held at their school at 6 and 12 months post-intervention delivery.)</i>
Researcher and participant relationship	Has the relationship between researcher and participants been adequately considered?	Can't tell <i>(The potential impact of researcher as both intervention deliverer and evaluation lead were highlighted as a potential limitation but the impact of this and the introduction of potential bias has not been critically examined in the paper.)</i>
Ethical Issues	Have ethical issues been taken into consideration?	Yes <i>(Written consent for each participating school was gained from the school leader. All potential teacher and student participants were given information sheets at least 2 weeks before each outcome data collection session. Those not wishing to take part were not asked to complete the questionnaire. Information was also posted or emailed by schools to all parents of eligible students at least 1 week before data collection. Parents returned opt-out forms to notify the study team that they withdrew their child from participation.)</i>
Data analysis	Was the data analysis sufficiently rigorous?	Yes <i>(Interviews with trainers and peer supporters were audio recorded and transcribed verbatim. Interview data were analysed using thematic analysis. Separate coding trees were developed through an iterative process for each dataset. Independent coding of two transcripts for each dataset was undertaken. A priori codes that map onto the process evaluation domains were included in the initial coding trees, along with novel</i>

Section	Question	Answer
		<i>codes that emerged from the data. Codes and their meaning were agreed between team members in an ongoing dialogue. Codes were then assembled into themes; candidate themes were reviewed, refined and confirmed by the team, and then compared across datasets. Qualitative analyses were assisted with the QSR NVivo11 software.)</i>
Findings	Is there a clear statement of findings?	Yes <i>(Findings are outlined as themes. Process of theme development is outlined with two individuals undertaken the analysis and a process of theme checking outlined)</i>
Research value	How valuable is the research?	The research has some value <i>(The process evaluation nature of the study, its undertaken in secondary schools only and only in a selected section of the intervention arm means its applicability and generalizability are limited but of some value)</i>
Overall risk of bias and relevance	Overall risk of bias	Low <i>(Methodology was appropriate and clearly outlined with limitations specified. Sampling and recruitment were outlined with limitations of the approach specified. The study authors did not outline how they planned to mitigate against their influence as intervention deliverers and evaluators. The analysis is outlined in detailed with thematic analysis approach undertaken by two individuals and process of theme consolidation outlined.)</i>
Overall risk of bias and relevance	Relevance	Relevant

Study details

Brief name	Mental Health First Aid training
Rationale/theory/Goal	Mental Health First Aid training aims to teach individuals practical skills that can be used to identify signs and symptoms of mental health difficulties and provide confidence in guiding people towards appropriate support. WISE intervention is informed by social support theory.
Materials used	2-day standard MHFA training course delivered by MHFA accredited trainers; short presentation delivered either by the research team or the MHFA trainers, and written guidance on setting up a staff peer support service in their

	school. A shortened version of the youth MHFA course (the 1-day MHFA for schools and colleges) to improve teacher skills in supporting students in distress. A 1-h mental health awareness-raising session.
Procedures used	2-day standard MHFA training course delivered by MHFA accredited trainers with a minimum 8% of the whole staff body (maximum 16 participants in a group). Following completion of training, attendees were given a short presentation delivered either by the research team or the MHFA trainers, and written guidance on setting up a staff peer support service in their school. A shortened version of the youth MHFA course (the 1-day MHFA for schools and colleges) was delivered to a further group of teachers to improve their skills in supporting students in distress. A minimum of 8% of all teachers (maximum 16 participants in a group) was required to attend the 1-day MHFA for schools and colleges training course. All teachers at the intervention schools were invited to attend a 1-h mental health awareness-raising session, with schools able to choose whether they also made this available to non-teaching staff.
Provider	All MHFA courses were delivered by MHFA accredited trainers (three in England and six in Wales)
Method of delivery	The intervention was delivered via a training course. It is not specified if this was online or face to face or other.
Setting/location of intervention	Not specified but as it is delivered by internal accredited staff (Wales) and external accredited trainers it could have been delivered in schools or externally.
Intensity/duration of the intervention	Staff peer support service - 2 day standard MHFA training with a minimum of 8% of all teaching staff (up to maximum of 16) MHFA for Schools and Colleges training for teachers - 1 day training, which is based on the youth MHFA course, but targeted to meet the needs of educational environments with a minimum of 8 % of all teaching staff (up to a maximum of 16) Mental health awareness raising session for all teachers - All teaching staff received a one hour awareness raising session, which will introduce the peer support service and focus on the importance of mental health issues in schools. A refresher session will be delivered at the start of the next academic year by the peer supporters themselves, to ensure that the profile of the peer support service is maintained.
Tailoring/adaptation	Not specified
Unforeseen modifications	Not specified

Planned treatment fidelity	12 schools assigned to the intervention arm with at least 8% of staff at each school completing the MHFA training packages.
Actual treatment fidelity	113 (8.6%) staff completed the 2-day standard MHFA training course, and a further 146 (11.1%) staff completed the 1-day MHFA for schools and colleges training. In seven (58.3%) schools, the required 8% of staff completed the MHFA training packages
Other details	Not reported

Study arms

Mental Health First Aid training package (N = 12)

MHFA training course designed to teach lay people first aid skills to support others with mental health problems. The training aims to teach individuals practical skills that can be used to identify signs and symptoms of mental health difficulties and provide confidence in guiding people towards appropriate support. 24 schools participated in a cluster RCT. This paper considers interviews with WISE trainers (n=6) and focus groups with training course attendees (n=4-8)

D.15 Gordon 2018

Bibliographic Reference Gordon, Heather J; Demerouti, Evangelia; Le Blanc, Pascale M; Bakker, Arnold B; Bipp, Tanja; Verhagen, Marc A. M. T; Individual job redesign: Job crafting interventions in healthcare.; Journal of Vocational Behavior; 2018; vol. 104; 98-114

Study details

Study design	Cluster randomised controlled trial
Trial registration number	Not reported
Aim	To determine the effects of a job redesign/job crafting strategy on the wellbeing and job performance of nurses in a workplace undergoing organisational change.

Country/geographical location	The Netherlands
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: not reported • Industry: healthcare • Organisation size: not reported. • Contract type: Not reported. • Seniority: nurses • Income: not reported
Inclusion criteria	Not reported
Exclusion criteria	Not reported
Method of randomisation	Not reported
Method of allocation concealment	Not reported
Unit of allocation	Cluster (work unit)
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • Power calculations- not reported. • Intention-to-treat analysis- not reported. • Data were analysed with SPSS General Linear Modelling (GLM) repeated measures to test the hypothesized intervention effects over time. • Multilevel analyses with MLwiN were conducted to determine whether job crafting explained the effect of the intervention on well-being or performance.

<p>Attrition</p>	<ul style="list-style-type: none"> • Of the 60 nurses that participated in the interventions, 32 returned the completed booklets including both measurements (53.3%) • Of the 60 nurses in the control group, 26 returned the completed booklets (43.3%)
<p>Assessments and timepoints</p>	<p>The following outcomes were assessed at the following timepoints:</p> <ul style="list-style-type: none"> • Baseline (1 month before the intervention) • 1 month after the intervention <p>The primary object was to measure employee wellbeing and job performance through the following outcomes:</p> <ul style="list-style-type: none"> • Work engagement • Exhaustion • Adaptive performance • Task performance • Contextual performance
<p>Study limitations (author)</p>	<ul style="list-style-type: none"> • Outcome measures were objective, which could lead to bias. • 32 of the 60 nurses in the experimental groups and 26 of the 60 in the control groups did not complete any of the questionnaires, not allowing for data comparison between responders and non-responders. • There were more nurses with higher levels of work experience who participated in the experimental group. • The effect of the overall intervention was measured; therefore, it is not possible to ascertain the aspects of the intervention that were associated with the positive effects. • The alphas were quite low for the job crafting measure of reducing demands, which might limit the implications of the findings. • Generalizability across occupational groups is needed and tailoring the measures to specific populations may help to increase the alphas for the particular job crafting dimensions, as some items may not be relevant for a specific context. • The effects of each job crafting dimension were tested separately. The researchers believe that the context determines whether or not specific crafting behaviors will be used in combination, and if a specific combination is more beneficial than other ones.

Study limitations (reviewer)	<ul style="list-style-type: none"> • Lack of clarity on randomisation • High attrition • No ITT analysis • The study reported on a workplace undergoing organisational change- the results may not be generalisable. • Short follow-up time means that the long term effects are unknown
Source of funding	Not reported

Study arms

Job crafting intervention (N = 60)

In study 2, 3 units (60 individuals) were randomised to receive the job crafting intervention.

Control (N = 60)

In study 2, 3 units (60 individuals) were randomised to the control group.

Characteristics

Arm-level characteristics

	Job crafting intervention (N = 60)	Control (N = 60)
Age data for completers only		
Mean/SD	41.2 (11.3)	31.2 (8.8)
Gender data for completers only		
Male		

	Job crafting intervention (N = 60)	Control (N = 60)
Sample Size	% = 12.5	% = 7.7
Ethnicity Not reported		

Outcomes

Study timepoints	Baseline 1 (month) Outcomes measured 1 month after the intervention
-------------------------	--

Employee outcomes

Employee outcomes for study 2

	Job crafting intervention		Control	
	Baseline	1 (month)	Baseline	1 (month)
	N = 60	N = 60	N = 60	N = 60
job satisfaction (0-6) Utrecht Work Engagement Scale <i>Polarity: Higher values are better</i>				
Sample Size	n = 32 ; % = 53.3	n = 32 ; % = 53.3	n = 26 ; % = 43.3	n = 26 ; % = 43.3
Mean/SD	4.1 (0.74)	4.68 (0.74)	4 (0.62)	4.07 (0.67)
Stress- exhaustion (1-4) Dutch version of the Oldenburg Burnout Inventory				

	Job crafting intervention		Control	
	Baseline	1 (month)	Baseline	1 (month)
	N = 60	N = 60	N = 60	N = 60
<i>Polarity: Lower values are better</i>				
Sample Size	n = 32 ; % = 53.3	n = 32 ; % = 53.3	n = 26 ; % = 43.3	n = 26 ; % = 43.3
Mean/SD	2.2 (0.45)	2.05 (0.37)	2.36 (0.37)	2.42 (0.34)

Job satisfaction - Job crafting vs Control - 1-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Some concerns (High attrition)
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (Outcome measure was self-reported)
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low

Section	Question	Answer
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome and high attrition</i>)

Stress - Job crafting vs Control - 1-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Some concerns (<i>High attrition</i>)
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (<i>Outcome measure was self-reported</i>)
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome and high attrition</i>)

Study arms

Job crafting intervention (N = 60)	
Brief name	Job redesign through job crafting intervention [page 99]
Rationale/theory/Goal	Expanding job redesign could create more opportunities for challenge, growth, and engagement of employees. Job crafting may be an avenue to integrate job design and job stress theories, by exploring the role of job stressors and job demands in combination with the motivating role of job resources. Job crafting specifically refers to individuals changing or crafting the boundaries or conditions of their job to increase their work meaning. [page 101]
Materials used	Booklets to record measurements [page 102]
Procedures used	<ul style="list-style-type: none"> • Participants attended 3-hour workshops, where they were informed and trained on all job crafting strategies, and included participants sharing experimental learning narratives. • Through various explanations and exercises during the workshop, employees got to know the concept of job crafting. • The workshop concluded with the development of a personal crafting plan (PCP). The PCP consists of specific crafting actions that the participants formulated and undertook for a period of three weeks after the workshop. <p>[page 103]</p>
Provider	Not reported
Method of delivery	Workshops [page 103]
Setting/location of intervention	Not reported
Intensity/duration of the intervention	3-hour workshops [page 103]
Tailoring/adaptation	Not reported

Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None
Control (N = 60)	
Brief name	Control group- no further information provided [page 103]
Rationale/theory/Goal	Not reported
Materials used	Not reported
Procedures used	Not reported
Provider	Not reported
Method of delivery	Not reported
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported

Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

D.16 Grant, 2014

Bibliographic Reference Grant, Adam M. Berg, Justin M. Cable, Daniel M.; Job titles as identity badges: how self-reflective titles can reduce emotional exhaustion; ACADEMY OF MANAGEMENT JOURNAL; 2014; vol. 57 (no. 4); 1201-1225

Study details

Trial registration number	Not reported
Aim	Test a set of developed proposition (based on qualitative research linked to this study) regarding the development of self-reflective job titles
Country/geographical location	USA
Setting	Human and social services
Inclusion criteria	Not reported
Exclusion criteria	Not reported
Method of randomisation	Stratified random assignment procedure - listing nine sites in order of size and alternated allocation across the three conditions

Method of allocation concealment	Single blind study with assessments undertaken online with participants coded and anonymized; allocation concealment not clarified.
Unit of allocation	Cluster
Unit of analysis	Cluster
Statistical method(s) used to analyse the data	Archival analysis and wave analysis using Independent t test; Confirmatory factor analysis expressed as chi-square, means and standard deviations, paired-samples t-test; mediation analysis
Attrition	169/224 (75%) of those identified provided data at baseline; At 5 weeks post intervention 169/169 (100%) randomised participants provided data; At Time 2 76/169 (45%) randomised participants provided data.
Assessments and timepoints	At baseline, at 5 weeks post intervention and at 'Time 2' (not specified). The following were assessed: Maslach Burnout Inventory; Self-verification (Swann et al 2007); Psychological safety (Edmonson et al 1999); External rapport (Bernieri et al 1996); Open-ended questions to employees were asked in the self-reflective titles group.
Study limitations (author)	Use of self-report; Sample was predominantly female which may limit generalizability; The study did not allow the mechanism of intervention effect to be fully assessed and the findings cannot rule out the impact of 'unmeasured variables' - reference is made to leadership support and individual identity with participant role; The lack of random assignment to conditions impacts inferences of causality - study is outlined a single-blind (method not outlined); No assessment of negative effects; No clarity regarding sustainability.
Study limitations (reviewer)	Method of blinding and allocation concealment is not outlined; Self-report questionnaires; use of non-equivalent control; sample appears to be self-selected impacting generalizability and introducing potential bias; unclear if sample size calculation has been undertaken or if the study is adequately powered to assess intervention impact on outcome.
Source of funding	Not reported

Study arms

Job crafting (N = 31)

Control (N = 19)

Characteristics

Study-level characteristics

Characteristic	Study (N = 76)
Age (years)	35 to 39
Range	
Gender (% Female)	89
Nominal	
Ethnicity	NR
Nominal	

Outcomes

Study timepoints

- 5 week (After the intervention)

Employee outcomes

Outcome	Job crafting, 5 week, N = 31	Control, 5 week, N = 19
Job stress Using Maslach Burnout Inventory - emotional exhaustion.	2.7 (1.43)	3.08 (1.19)
Mean (SD)		

Job stress - Polarity - Lower values are better.

Critical appraisal - Cochrane Risk of Bias tool (RoB 2.0) Cluster trials

Employee outcomes-Job Stress-Mean SD-Job Crafting-Control-t5

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (<i>Self-report outcome</i>)
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns

Study details

Brief name	Job crafting
Rationale/theory/Goal	Test a set of developed proposition (based on qualitative research linked to this study) regarding the development of self-reflective job titles and its impact on psychological outcomes. The intervention is based on the premise that job titles do not reflect employee values and contributions, and some organizations have explored the psychological implications job titles
Materials used	10 minute presentation on use of self-reflective job titles; Brainstorming exercise; facilitated discussion on how and when these new titles could be used and when.

Procedures used	10 minute presentation on use of self-reflective job titles; Brainstorming exercise to discuss potential job titles (no time outlined); facilitated discussion on how and when these new titles could be used and when (no time outlined).
Provider	Not reported
Method of delivery	Groups based
Setting/location of intervention	Health care setting - but unclear where the intervention was delivered
Intensity/duration of the intervention	10 minute presentation on use of self-reflective job titles with brainstorming about possible names and a facilitated discussion when and how to the new title
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

Study arms

Job crafting (N = 31): 10 min presentation on the use of self-reflective job titles; Discussions and brainstorming about their own job titles

Control (N = 19)

D.17 Hall 2018

Bibliographic Reference

Hall, Louise H; Johnson, Judith; Heyhoe, Jane; Watt, Ian; Anderson, Kevin; O'Connor, Daryl B; Strategies to improve general practitioner well-being: findings from a focus group study.; Family practice; 2018; vol. 35 (no. 4); 511-516

Study details

Study design	Focus group study
Trial registration number	Not reported
Aim	<p>To explore possible strategies that General Practitioners think could improve their well-being and reduce or prevent burnout.</p> <p>Specifically :</p> <ul style="list-style-type: none"> • To understand which factors influenced GPs levels of wellbeing and burnout at work (not extracted) • To explore strategies they felt could improve well-being and reduce burnout (the focus of this data extraction)
Country/geographical location	North of England
Setting	General Practices
Inclusion criteria	Practising GPs
Exclusion criteria	None reported
Method of randomisation	Not applicable
Method of allocation concealment	Not applicable
Unit of allocation	Not applicable
Unit of analysis	Not applicable

<p>Statistical method(s) used to analyse the data</p>	<p>5 focus groups were carried out each consisting of 3-6 GPs. 3 groups were made up of GPs working in the same practice and the remaining 2 groups of locums. Recruitment was via an existing network then via snowballing of contacts through GPs included in the first focus group.</p> <p>Semi structured interviews lasting 45 - 90 minutes were carried out by the lead researcher, in GP practices and private meeting rooms. The focus groups were audio recorded and transcribed verbatim.</p> <p>Thematic analysis was carried out according to the principles of Braun and Clarke. The transcripts were coded by hand by the first author and 20% were double coded by another author. This was to provide external insight, facilitate discussions about the emerging themes and help reduce the risk of investigator bias.</p> <p>Codes were then grouped into themes and subthemes and any disagreements were discussed with one or more authors until a consensus was reached. A thematic map was generated, and authors revisited the full data set to check that the themes accurately reflected the majority of the data.</p>
<p>Attrition</p>	<p>Not applicable</p>
<p>Assessments and timepoints</p>	<p>Not applicable</p>
<p>Theme 1</p>	<p>Breaks</p> <p>Scheduling a coffee break was viewed as feasible by those already doing this and as being beneficial as it provided the opportunity to:</p> <ul style="list-style-type: none"> • leave isolated individual offices and mix with colleagues. • meet physical needs such as getting something to drink or eat and taking a comfort break. • have a few minutes respite from 'being the Doctor'. <p>Scheduling a lunch break was not generally seen as being feasible and although brief, taking a short coffee break to make a drink was viewed positively.</p> <p><i>'The coffee break in the middle of morning surgery. We try and get here and meet for a bit of rest and recuperation. ... I've definitely recognized that it is a positive factor for our well-being and therefore it's something that we need to maintain and cherish.'</i></p>

<p>Theme 2</p>	<p>Support</p> <p>Having social support both within the practice, peer to peer, and from outside of the practice was found to be helpful in preventing burnout. Participants suggested buddying and mentoring systems and meetings to check how colleagues were doing.</p> <p><i>'But I think also, looking after each other.... I think we're quite good at looking over our shoulder at the other person (...) if you see somebody's got a really full load, getting them a cup of tea, or going and seeing one of their extras, (...) is quite a positive thing about our team that we tend to do.'</i></p>
<p>Theme 3</p>	<p>Physical needs</p> <p>In addition to the physical needs outlined in the breaks theme, the need to make time for exercise to support physical and psychological well-being was highlighted. It was noted this could also help to meet social needs and be a psychological strategy, through being a form of 'escapism'.</p>
<p>Theme 4</p>	<p>Psychological strategies</p> <p>Maintaining awareness of the risk of burnout was noted as a useful strategy by some participants. It was also noted that this could be implemented in practices through discussions and meetings, and externally at the training stage. It was highlighted that awareness was needed at the individual, practice and external levels.</p> <p><i>'I agree. Self-awareness is often the key thing. I certainly wasn't taught that in a training stage. I think if trainees are taught or encouraged to be more self-aware so they know what their personal stresses are, how to manage them, how to identify them (...). I suppose that's actually resilience isn't it, it probably makes people feel more resilient because they're more aware of their limits.'</i></p>
<p>Theme 5</p>	<p>Control</p> <p>Some GPs (in particular locums) used control over how much work they did and when and where they did their work, as a strategy to prevent burnout. Many had chosen this way of working specifically to prevent them from burning out, or as a way forward to protect their well-being after previously working full-time and suffering from burnout or depression.</p>
<p>Study limitations (author)</p>	<p>Authors note that all participants were based in UK practices and that this may limit the applicability of the findings outside of the UK.</p>

Study limitations (reviewer)	<ul style="list-style-type: none"> • Small sample size in one geographical area of England • It is not clear how many of the participants were commenting on an intervention they had personally experienced and how many were giving views of interventions which they thought might be helpful. • GPs from the same practice were involved in the same focus groups, in some cases with a mix of partners, salaried GPs and trainees. This may have influenced participants willingness to speak freely and limits the breadth of the sample to a small number of practices. • Recruitment of the GPs was from one network and then via snowballing of contacts which may have introduced recruitment bias
Source of funding	This project forms part of a PhD that was part-funded by a National Institute for Health Research grant.

Study arms

Strategies to improve well-being (N = 25)

Strategies to improve well-being of General Practitioners

Characteristics

Study-level characteristics

	Study (N = 25)
Age Years	
Range	29 to 57
Gender	
Male Percentage calculated by reviewer	

	Study (N = 25)
Sample Size	n = 11 ; % = 44
Female Percentage calculated by reviewer	
Sample Size	n = 14 ; % = 56
Ethnicity Not reported	
Employment status Percentages calculated by reviewer	
Partner	
Sample Size	n = 9 ; % = 36
Salaried	
Sample Size	n = 4 ; % = 16
Trainees	
Sample Size	n = 2 ; % = 8
Locums	
Sample Size	n = 9 ; % = 36
Unknown	

	Study (N = 25)
Sample Size	n = 1 ; % = 4
Working hours Percentages calculated by reviewer	
Full-time	
No of events	n = 11 ; % = 44
Part-time	
No of events	n = 12 ; % = 48
Unknown	
No of events	n = 2 ; % = 8
Years of experience	
Range	0 to 28

Section	Question	Answer
Aims of the research	Was there a clear statement of the aims of the research?	Yes
Appropriateness of methodology	Is a qualitative methodology appropriate?	Yes

Section	Question	Answer
Research Design	Was the research design appropriate to address the aims of the research?	Can't tell <i>(It is not clear how many of the participants were commenting on an intervention they had personally experienced and how many were giving views of interventions which they thought might be helpful.)</i>
Recruitment Strategy	Was the recruitment strategy appropriate to the aims of the research?	Can't tell <i>(Recruitment of the GPs was from one network and then via snowballing of contacts which may have introduced recruitment bias)</i>
Data collection	Was the data collected in a way that addressed the research issue?	Can't tell <i>(In 3 of the 5 focus groups, the GPs were all from the same practice, in some cases with a mix of partners, salaried GPs and trainees. This may have limited the willingness of participants to express their views freely and also limits the breadth of the findings to a small number of GP practices.)</i>
Researcher and participant relationship	Has the relationship between researcher and participants been adequately considered?	Can't tell <i>(The relationship between researcher and participant is not discussed.)</i>
Ethical Issues	Have ethical issues been taken into consideration?	Yes
Data analysis	Was the data analysis sufficiently rigorous?	Yes
Findings	Is there a clear statement of findings?	Yes
Research value	How valuable is the research?	The research has some value <i>(The extracted data focuses on strategies that can be delivered at practice level. It is based on GPs only, from a small number of practices, and not all findings may be</i>

Section	Question	Answer
		<i>transferrable. However it is likely that some of the more practical suggestions such as taking regular breaks would be applicable to other workplaces.)</i>
Overall risk of bias and relevance	Overall risk of bias	High
	Relevance	Relevant

D.18 Hansen 2016 - Sweden

Bibliographic Reference Hansen, Elisabeth; Landstad, Bodil J; Gundersen, Kjell Terje; Vinberg, Stig; Leader-based workplace health interventions-A before-after study in Norwegian and Swedish small-scale enterprises. {STUDY B}; International Journal of Disability Management; 2016; vol. 11

Study details

Study design	Non-randomised controlled trial (NRCT)
Trial registration number	Not reported
Study start date	May-2014
Study end date	May-2015
Aim	To determine whether leader-based workplace health interventions are effective in improving psychosocial working conditions and health in Swedish small-scale enterprises.
Country/geographical location	Sweden

Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: private • Industry: mixed • Size of organisation: small • Contract type: not reported. • Seniority: mixed: co-workers and leaders • Income: not reported
Inclusion criteria	<ul style="list-style-type: none"> • Enterprises had less than 20 employees • Enterprises employed both genders. • Enterprises were located in rural areas
Exclusion criteria	Not reported
Method of allocation concealment	Not reported
Unit of allocation	Cluster (enterprise)
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • No power calculation was reported. • No ITT analysis was reported. • IBM SPSS Statistics 23 was used to conduct the descriptive background analyses, including means, standard deviations, and number of subjects. • Empirical validation (PCA) and reliability tests of Cronbach alpha were conducted to explore potentially similar high test scores when compared to the equivalent original tests supporting the scales. • The dependent variables were examined for comparison between the groups using a paired sample t test allocated between Norway and Sweden(leaders + co-workers) separately by assessing mean pre and post values, standard deviations, t scores and p values. Second, delta/diff mean values (post-pre), standard deviations, t scores (equal variances not assumed) and p values were used to compare the groups (intervention versus reference) after the interventions.

	<ul style="list-style-type: none"> For a more thorough investigation, a three-way ANOVA was conducted on the basis of the delta/diff mean values (post–pre) to identify associations, interactions and possible effects between the independent variables (group: intervention versus reference; country: Norway versus Sweden; position: leader versus co-worker) and each of the dependent variables.
Attrition	Not reported
Assessments and timepoints	<p>The following outcomes were measured at the following timepoints:</p> <ul style="list-style-type: none"> Baseline Immediately after the intervention <p>Primary outcomes were:</p> <ul style="list-style-type: none"> Positive Organizational Psychology measures including innovative climate, work-life balance, internal job performance, external job performance. Work-experience measurements (workplace culture) measures including management, reorganisation, internal work experience, pressure of time, autonomy, supportive working conditions. Health (quality of life) including interactive function and intrapersonal characteristics. Sickness absence Sickness Presence Sleep
Study limitations (author)	<ul style="list-style-type: none"> Data were collected from small-scale enterprises, which could affect the generalisability of the findings. The study was non-randomised.
Study limitations (reviewer)	<ul style="list-style-type: none"> Outcome measures were self-reported. There was no long-term follow up.
Source of funding	AFA Insurance in Sweden

Study arms

Intervention (N = 39)

39 individuals (10 small-scale enterprises) participated in a leadership-based workplace health intervention.

Control (N = 30)

30 individuals (9 small-scale enterprises) participated in a control group.

Characteristics

Study-level characteristics

	Study (N = 69)
Age Not reported	
Gender Not reported	
Ethnicity Not reported	

Outcomes

Study timepoints	Baseline 0 (month) Outcomes were measured at the end of the intervention.
-------------------------	--

Employee outcomes

	Intervention		Control	
	Baseline	0 (month)	Baseline	0 (month)
	N = 39	N = 39	N = 30	N = 30
Workplace culture (28-168) Self-reported - Work Experience Measurement Scale <i>Polarity: Higher values are better</i>				
Sample Size	n = 39 ; % = 100	n = 39 ; % = 100	n = 30 ; % = 100	n = 30 ; % = 100
Mean/SD	125 (23)	122 (25)	135 (20)	136 (21)
Quality of life (9-54) Self-reported - Salutogenic Health Indicator Scale (SHIS) <i>Polarity: Higher values are better</i>				
Sample Size	n = 39 ; % = 100	n = 39 ; % = 100	n = 30 ; % = 100	n = 30 ; % = 100
Mean/SD	36.6 (7.8)	35.3 (7.7)	36.4 (5.5)	36.8 (7.1)
Absenteeism <i>Polarity: Lower values are better</i>				
Sample Size	n = 39 ; % = 100	n = 39 ; % = 100	n = 30 ; % = 100	n = 30 ; % = 100
Mean/SD	3.44 (0.71)	3.33 (0.86)	2.83 (1.08)	2.27 (1.2)
Presenteeism <i>Polarity: Lower values are better</i>				

	Intervention		Control	
	Baseline	0 (month)	Baseline	0 (month)
	N = 39	N = 39	N = 30	N = 30
Sample Size	n = 39 ; % = 100	n = 39 ; % = 100	n = 30 ; % = 100	n = 30 ; % = 100
Mean/SD	3.18 (0.9)	2.95 (1.05)	2.73 (1.08)	2.77 (1.13)

Workplace culture - Intervention vs Control - Endpoint

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of detail around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low

Section	Question	Answer
Overall bias	Risk of bias judgement	Serious <i>(Lack of detail around missing outcome data and self-reported outcome)</i>

Quality of life - Intervention vs Control - Endpoint

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of detail around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Lack of detail around missing outcome data and self-reported outcome)</i>

Presenteeism - Intervention vs Control - Endpoint

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of detail around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Lack of detail around missing outcome data and self-reported outcome)</i>

Absenteeism - Intervention vs Control - Endpoint

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low

Section	Question	Answer
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of detail around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Lack of detail around missing outcome data and self-reported outcome)</i>

Study arms

Workplace health intervention (N = 39)

Brief name	Multicomponent workplace health intervention [page 3]
Rationale/theory/Goal	The intervention focused on leadership competence and individual-based components; with the aim of improving health and psychosocial working conditions. [page 3]

Materials used	<ul style="list-style-type: none"> • Newsletters [page 5]
Procedures used	<ul style="list-style-type: none"> • Leaders completed physical fitness tests. • Leaders received basic medical examinations and a one-hour health talk with an occupational health nurse about how to improve their lifestyle and physical activity. • Consultants from the occupational health service conducted investigations of occupational health and safety systems and working conditions through visits to each enterprise. These results were summarised and presented to each company. • Leaders also had a meeting with an occupational health service psychologist that included discussions about their leadership and their own working conditions. • Leaders were invited to networking meetings/educational sessions, that covered issues related to the leaders' work–life balance, health-promoting leadership, and psychosocial working conditions with regard to how to solve conflicts and provide feedback to co-workers. The meetings also focused on techniques to help improve leadership, working conditions and the promotion of health at the workplaces. • Individual support from occupational health services personnel was provided through physical meetings and/or by telephone concerning health issues, psychosocial working conditions and leadership behaviour. • Newsletter about the activities involved in the project was provided. <p>[pages 4 and 5]</p>
Provider	<ul style="list-style-type: none"> • Advisors from a private establishment offering occupational health service. • Swedish Winter Sports Research Centre • Occupational health nurse • Psychologist <p>[pages 3 and 4]</p>
Method of delivery	<ul style="list-style-type: none"> • Networking meeting/educational sessions • Individual meetings (physical or telephone) • Interviews and physical assessments <p>[page 4]</p>
Setting/location of intervention	Not reported

Intensity/duration of the intervention	<ul style="list-style-type: none"> Networking meetings/educational sessions: 8 meetings lasting 3 to 3.5 hours each over a period of 1 year. <p>[page 4]</p>
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Some leaders participated in all 8 networking/educational meetings, whereas some leaders only participated in only 3 meetings. [page 4]
Other details	None
Control (N = 30)	
Brief name	Did not receive an intervention [page 4]
Rationale/theory/Goal	Not reported
Materials used	Not reported
Procedures used	<ul style="list-style-type: none"> Leaders completed physical fitness tests. [page 4]
Provider	<ul style="list-style-type: none"> Swedish Winter Sports Research Centre [page 4]
Method of delivery	<ul style="list-style-type: none"> Physical fitness tests [page 4]

Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None

D.19 Hansen 2016 - Norway

Bibliographic Reference Hansen, Elisabeth; Landstad, Bodil J; Gundersen, Kjell Terje; Vinberg, Stig; Leader-based workplace health interventions- A before-after study in Norwegian and Swedish small-scale enterprises. {STUDY A}; International Journal of Disability Management; 2016; vol. 11

Study details

Study design	Non-randomised controlled trial (NRCT)
Trial registration number	Not reported

Study start date	May-2014
Study end date	May-2015
Aim	To determine whether leader-based workplace health interventions are effective in improving psychosocial working conditions and health in Norwegian small-scale enterprises.
Country/geographical location	Norway
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: private • Industry: mixed • Size of organisation: small • Contract type: not reported. • Seniority: mixed: co-workers and leaders • Income: not reported
Inclusion criteria	<ul style="list-style-type: none"> • Enterprises had less than 20 employees • Enterprises employed both genders. • Enterprises were located in rural areas
Exclusion criteria	Not reported
Method of allocation concealment	Not reported
Unit of allocation	Cluster (enterprise)
Unit of analysis	Individual

Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • No power calculation was reported. • No ITT analysis was reported. • IBM SPSS Statistics 23 was used to conduct the descriptive background analyses, including means, standard deviations, and number of subjects. • Empirical validation (PCA) and reliability tests of Cronbach alpha were conducted to explore potentially similar high test scores when compared to the equivalent original tests supporting the scales. • The dependent variables were examined for comparison between the groups using a paired sample t test allocated between Norway and Sweden (leaders + co-workers) separately by assessing mean pre and post values, standard deviations, t scores and p values. Second, delta/diff mean values (post–pre), standard deviations, t scores (equal variances not assumed) and p values were used to compare the groups (intervention versus reference) after the interventions. • For a more thorough investigation, a three-way ANOVA was conducted on the basis of the delta/diff mean values (post–pre) to identify associations, interactions and possible effects between the independent variables (group: intervention versus reference; country: Norway versus Sweden; position: leader versus co-worker) and each of the dependent variables.
Attrition	<p>Not reported</p>
Assessments and timepoints	<p>The following outcomes were measured at the following timepoints:</p> <ul style="list-style-type: none"> • Baseline • Immediately after the intervention <p>Primary outcomes were:</p> <ul style="list-style-type: none"> • Positive Organizational Psychology measures including innovative climate, work-life balance, internal job performance, external job performance. • Work-experience measurements (workplace culture) measures including management, reorganisation, internal work experience, pressure of time, autonomy, supportive working conditions. • Health (quality of life) including interactive function and intrapersonal characteristics. • Sickness absence • Sickness Presence • Sleep

Study limitations (author)	<ul style="list-style-type: none"> • Data were collected from small-scale enterprises, which could affect the generalisability of the findings. • The study was non-randomised.
Study limitations (reviewer)	<ul style="list-style-type: none"> • Outcome measures were self-reported. • There was no long-term follow up.
Source of funding	AFA Insurance in Sweden

Study arms

Intervention (N = 64)

64 individuals (9 small-scale enterprises) participated in a leadership-based workplace health intervention.

Control (N = 46)

46 individuals (6 small-scale enterprises) participated in a control group.

Characteristics

Study-level characteristics

	Study (N = 110)
Age Not reported	
Gender Not reported	
Ethnicity Not reported	

Outcomes

Study timepoints	Baseline 0 (month) Outcomes were measured at the end of the intervention.
-------------------------	--

Employee outcomes

	Intervention		Control	
	Baseline	0 (month)	Baseline	0 (month)
	N = 64	N = 64	N = 46	N = 46
Workplace culture (28-168) Self-reported - Work Experience Measurement Scale <i>Polarity: Higher values are better</i>				
Sample Size	n = 64 ; % = 100	n = 64 ; % = 100	n = 46 ; % = 100	n = 46 ; % = 100
Mean/SD	129 (20)	124 (20)	123 (18)	119 (18)
Quality of life (9-54) Self-reported - Salutogenic Health Indicator Scale (SHIS) <i>Polarity: Higher values are better</i>				
Sample Size	n = 64 ; % = 100	n = 64 ; % = 100	n = 46 ; % = 100	n = 46 ; % = 100
Mean/SD	35 (7.9)	34.5 (8.5)	36.9 (6.4)	35.3 (6.8)
Absenteeism <i>Polarity: Lower values are better</i>				
Sample Size	n = 64 ; % = 100	n = 64 ; % = 100	n = 46 ; % = 100	n = 46 ; % = 100

	Intervention		Control	
	Baseline	0 (month)	Baseline	0 (month)
	N = 64	N = 64	N = 46	N = 46
Mean/SD	2.89 (0.96)	2.83 (0.82)	2.93 (1.02)	2.7 (1.17)
Presenteeism <i>Polarity: Lower values are better</i>				
Sample Size	n = 64 ; % = 100	n = 64 ; % = 100	n = 46 ; % = 100	n = 46 ; % = 100
Mean/SD	3.03 (0.97)	2.95 (0.99)	3.13 (0.93)	2.93 (1.12)

Workplace culture - Intervention vs Control - Endpoint

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of detail around missing data)</i>

Section	Question	Answer
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Lack of detail around missing data and self-reported outcome)</i>

Quality of life - Intervention vs Control - Endpoint

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of detail around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>

Section	Question	Answer
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Lack of detail around missing data and self-reported outcome)</i>

Absenteeism - Intervention vs Control - Endpoint

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of detail around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low

Section	Question	Answer
Overall bias	Risk of bias judgement	Serious <i>(Lack of detail around missing data and self-reported outcome)</i>

Presenteeism - Intervention vs Control - Endpoint

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of detail around missing data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Lack of detail around missing data and self-reported outcome)</i>

Study arms

Workplace health intervention (N = 64)	
Brief name	Multicomponent workplace health intervention [page 3]
Rationale/theory/Goal	The intervention focused on leadership competence and individual-based components; with the aim of improving health and psychosocial working conditions. [page 3]
Materials used	<ul style="list-style-type: none"> • Newsletters [page 3]
Procedures used	<ul style="list-style-type: none"> • Advisors from the OHS unit pre-investigated health and psychosocial working conditions using a questionnaire and by interviewing a leader in each company to define the existing health and working environment status at the workplace. This information was used to develop a plan for the intervention. • Leaders completed physical fitness tests. • Leaders participated in a leadership programme, which included education, and discussions on issues such as psychosocial working conditions, leadership, collaboration, handling conflicts and work pressure. • Additional meetings were led by a consultant, which included educational sessions and discussions among the co-workers and leaders about lifestyle, team development, communication, and work engagement, with one follow up on sickness absences. • Individual leadership support was provided by occupational health services through dialogues in physical meetings and/or by telephone concerning health issues, psychosocial working conditions and leadership behaviour. • At 2 to 3 month intervals, several newsletters that included brief information regarding the project purpose, time schedules and activities involved in the project were sent out to the participating leaders and co-workers. • Follow-up measures were conducted by the OHS unit and the Swedish Winter Sports Research Centre and were presented to each enterprise along with proposals for further improvements in health and the psychosocial working environment. <p>[page 3]</p>
Provider	<ul style="list-style-type: none"> • Advisors from a private establishment offering occupational health services. • Swedish Winter Sports Research Centre <p>[page 3]</p>

Method of delivery	<ul style="list-style-type: none"> Physical meetings (group and individual) Telephone meetings (individual) <p>[page 3]</p>
Setting/location of intervention	Not reported
Intensity/duration of the intervention	<ul style="list-style-type: none"> 'Leadership in Modern Working Life' programme: three meetings over a period of one year that each lasted three hours Additional meetings: three occasions (2–3 hours/occasion) <p>[page 3]</p>
Tailoring/adaptation	<ul style="list-style-type: none"> Intervention plan was developed based on interviews with company leaders, and physical fitness tests. [page 3]
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None
Control (N = 46)	
Brief name	Did not participate in the workplace health programme. [page 3]
Rationale/theory/Goal	Not reported

Materials used	Not reported
Procedures used	Not reported
Provider	Not reported
Method of delivery	Not reported
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None

D.20 Havermans 2018

Bibliographic Reference Havermans, Bo M; Boot, Cecile RI; Brouwers, Evelien Pm; Houtman, Irene Ld; Heerkens, Yvonne F; Zijlstra-Vlasveld, Moniek C; Twisk, Jos Wr; Anema, Johannes R; van der Beek, Allard J; Effectiveness of a digital platform-based

implementation strategy to prevent work stress in a healthcare organization: a 12-month follow-up controlled trial.; Scandinavian journal of work, environment & health; 2018; vol. 44 (no. 6); 613-621

Hoek RJA, Havermans BM, Houtman ILD et al. Stress Prevention@Work: a study protocol for the evaluation of a multifaceted integral stress prevention strategy to prevent employee stress in a healthcare organization: a cluster controlled trial. BMC public health 18(1): 26

Study details

Study design	Non-randomised controlled trial (NRCT)
Trial registration number	NTR5527
Study start date	May-2016
Study end date	May-2017
Aim	To determine the effectiveness of a digital platform-based implementation strategy – compared to a control group – on stress, work stress determinants (i.e. psychosocial work factors) and the level of implementation among healthcare workers.
Country/geographical location	The Netherlands
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: not reported • Industry: healthcare • Organisation size: large • Contract type: not reported. • Seniority: not reported • Income: mixed (education level low, medium and high)

Inclusion criteria	<ul style="list-style-type: none"> • Teams are willing to participate in the trial and able to provide a team member who will be responsible for the implementation of SP@W within the team during the trial period. • Participants must be aged 18 or over. • Participants must have an employment contract at the organisation.
Exclusion criteria	<ul style="list-style-type: none"> • Participants have had sick leave of more than one month at the time of inclusion. • Participants planned retirement within one year.
Method of allocation concealment	Not reported
Unit of allocation	Cluster- teams
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • No power calculations were reported. • Analyses were performed in accordance with the intention-to-treat principle. • Descriptive statistics were used to report on baseline study sample characteristics. Baseline differences between the experimental and control group in study sample characteristics were assessed using Chi square tests for educational level, having a partner or not, and working night shifts, and an independent samples T-test for age, hours worked per week, psychological demands, co-worker support, supervisor support, autonomy, and stress. • Linear mixed models analyses were performed with the two follow-up measurement as outcome and strategy as independent variable, adjusted for baseline value of the outcome to assess the overall effect of the strategy. The same analysis was performed but including time and the interaction between strategy and time in order to estimate the effect of the strategy at the two follow-up measurements. A random intercept for individual was included to account for the correlation between the repeated measures within the individual. • An overall effect was reported separately for all outcomes, and the effects for the two follow-ups were also reported. • Loss-to-follow-up analyses were performed for the baseline measures, comparing participants who participated in the baseline measurement and at least one follow-up to those who participated in the baseline measurement only, using Chi square tests for categorical variables and independent samples T-test for continuous variables.

Attrition	Of the 473 employees invited to complete the baseline questionnaire, 304 participants did so (response rate: 64%). Of the 304 participants who participated in the baseline measurement, 210 participants (69%) also participated in at least one of the follow-up measurements. In the experimental group, 65% of participants responded at 6 month follow up, and 31% responded at 12 month follow up. In the control group, 40% of participants responded at 6 month follow up, and 28% responded at 12 month follow up.
Assessments and timepoints	<p>The following outcomes were measured at the following timepoints:</p> <ul style="list-style-type: none"> • baseline • 6 months after the start of the intervention • 12 months after the start of the intervention <p>The primary outcome was stress.</p> <p>Secondary outcomes included:</p> <ul style="list-style-type: none"> • determinants of work stress • level of implementation
Study limitations (author)	<ul style="list-style-type: none"> • Randomisation was not performed, which could have led to bias. • There was considerable loss-to-follow up, which was partly due to turnover.
Study limitations (reviewer)	<ul style="list-style-type: none"> • Measures were self-reported, which could have led to bias. • The proportion of women was 95% in the intervention group. and 95% in the control group, meaning that the findings may not be generalisable to all work environments.
Source of funding	Netherlands Organisation for Health Research and Development

Study arms**Digital stress-prevention (N = 252)**

15 teams containing 252 individuals were randomised to a digital platform-based implementation strategy to prevent work stress.

Wait-list control (N = 221)

15 teams containing 221 individuals were randomised to a control group.

Characteristics

Arm-level characteristics

	Digital stress-prevention (N = 252)	Wait-list control (N = 221)
Age Characteristics were based on 161 participants in the experimental, and 143 participants in the control group.		
Mean/SD	44.4 (11.1)	45.3 (12.1)
Gender Characteristics were based on 161 participants in the experimental, and 143 participants in the control group.		
Women		
Sample Size	n = 153 ; % = 95	n = 141 ; % = 99
Ethnicity Not reported		
Socioeconomic - educational level Characteristics were based on 161 participants in the experimental, and 143 participants in the control group.		
Low		

	Digital stress-prevention (N = 252)	Wait-list control (N = 221)
Lower general secondary education, preparatory secondary vocational education.		
Sample Size	n = 2 ; % = 1.2	n = 0 ; % = 0
Medium Intermediate vocational training, higher general secondary education, pre-university education.		
Sample Size	n = 141 ; % = 87.6	n = 133 ; % = 93
High Higher vocational education, university education		
Sample Size	n = 18 ; % = 11.2	n = 8 ; % = 56.6

Outcomes

Study timepoints	Baseline 12 (month) 12 months after access to the intervention was provided
-------------------------	--

Employee outcomes

	Digital stress-prevention		Wait-list control	
	Baseline	12 (month)	Baseline	12 (month)
	N = 252	N = 252	N = 221	N = 221
Stress (0-21) Self-reported- stress sub-scale of the short version of the Depression Anxiety and Stress Scale (DASS-21)				

	Digital stress-prevention		Wait-list control	
	Baseline	12 (month)	Baseline	12 (month)
	N = 252	N = 252	N = 221	N = 221
<i>Polarity: Lower values are better</i>				
Sample Size	n = 161 ; % = 63.9	n = 70 ; % = 27.8	n = 143 ; % = 64.7	n = 68 ; % = 30.8
Mean/SD	4.59 (4.24)	4.16 (3.1)	4.05 (4.4)	4.39 (3.93)

Job stress - Digital stress-prevention vs Wait-list - 12-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (<i>Outcome measure was self-reported</i>)

Section	Question	Answer
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate (Self-reported outcome)

Study arms

Digital stress prevention (N = 252)	
Brief name	Digital stress-prevention intervention [page 1]
Rationale/theory/Goal	The main goal of the strategy was to promote the use of interventions aimed at prevention of work stress. The strategy aimed to raise awareness of work stress among stakeholders, and direct organisations to a proper (psychosocial) risk analysis. The intervention was conducted in a participative manner and identified organisational risk factors for work stress. In addition, the strategy helped to identify and select appropriate interventions and overcome implementation barriers. [page 2]
Materials used	<ul style="list-style-type: none"> Digital platform [page 2]
Procedures used	<ul style="list-style-type: none"> A digital platform provided information, screening and planning tools. It also contained a search engine with a broad selection of interventions relevant to work stress prevention. One member of each of the teams received training in the use of the digital platform. Shortly after the 6-month follow-up measurement, a meeting was held during which these team members could share their experiences with the use of the digital platform. <p>[page 3]</p>
Provider	<ul style="list-style-type: none"> The platform was developed in cooperation with organizations from different sectors, such as healthcare, education, transport, and ICT. [page 3]
Method of delivery	Digital platform [page 2]

Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Initially, a collaborative learning network, in which organizations could share and develop knowledge about stress prevention, was also part of the strategy. Several meetings of the collaborative learning network were organized before the start of the trial, for a wide range of organisations. After initial success, attendance rates deteriorated quickly to a point where the collaborative learning network was no longer considered feasible due to sustainability issues. Therefore, it was omitted from the strategy before the start of the trial. [page 2]
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None
Wait list control (N = 221)	
Brief name	Wait list control [page 2]
Rationale/theory/Goal	Not applicable
Materials used	Not reported
Procedures used	<ul style="list-style-type: none"> Participants were put on a waiting list [page 2]

Provider	Not reported
Method of delivery	Not reported
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None

D.21 Holman 2016

Bibliographic Reference Holman, D; Axtell, C; Can job redesign interventions influence a broad range of employee outcomes by changing multiple job characteristics? A quasi-experimental study.; Journal of occupational health psychology; 2016; vol. 21 (no. 3); 284-295

Study details

Study design	Cluster randomised controlled trial
---------------------	-------------------------------------

Trial registration number	Not reported
Aim	To determine whether a participatory job redesign intervention is effective in improving employee outcomes such as wellbeing, job satisfaction and job performance.
Country/geographical location	UK
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: Public • Industry: Services • Organisation size: Medium • Contract type: not reported. • Seniority: not reported • Income: not reported
Inclusion criteria	Not reported
Exclusion criteria	Not reported
Method of randomisation	Not reported
Method of allocation concealment	Not reported
Unit of allocation	Cluster (teams)
Unit of analysis	Individual

Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • Power calculation not reported. • Completer-only analysis • A level-1 moderation analysis was conducted. The model included dummy variables representing measurement time (i.e. pre- and post-intervention), group membership (i.e. experimental or control group), an interaction term representing the product of these two dummy variables, and paths from these variables to both job control and feedback. A significant interaction effect indicates that the level of change in the experimental group is significantly different from that of the control group.
Attrition	<ul style="list-style-type: none"> • At Time 1, the employee survey was completed by 96 of 120 agents (80% response). • The Time 2 employee survey was completed by 107 of 118 agents (82% response). • The longitudinal sample, those responding at Time 1 and 2, was 62 (23 in the experimental group; 39 in the control group). • The response rate for the longitudinal sample was 61%. • The response rate for the longitudinal experimental sample was 72% and for the longitudinal control sample it was 56%
Assessments and timepoints	<p>The following assessments were made at these timepoints:</p> <ul style="list-style-type: none"> • Baseline • 1 month after the intervention <p>Primary outcomes were:</p> <ul style="list-style-type: none"> • Wellbeing • Job performance • Job satisfaction • Job control
Study limitations (author)	<ul style="list-style-type: none"> • There was no long-term follow up
Study limitations (reviewer)	<ul style="list-style-type: none"> • Lack of clarity about randomisation

	<ul style="list-style-type: none"> No ITT analysis reported
Source of funding	Not reported

Study arms

Job crafting (N = 23)
No intervention (N = 39)

Characteristics

Study-level characteristics

	Study (N = 96)
Age	
Mean/SD	31.5 (<i>empty data</i>)
Gender	
Female	
Sample Size	n = 52 ; % = 54
Ethnicity Not reported	

Outcomes

Study timepoints	Baseline 1 (month) Outcomes measured at 1 month after intervention
-------------------------	---

Employee outcomes

	Job crafting		No intervention	
	Baseline	1 (month)	Baseline	1 (month)
	N = 23	N = 23	N = 39	N = 39
productivity Self-reported- reported as job performance. <i>Polarity: Higher values are better</i>				
Mean/SD	3.7 (0.71)	4.36 (0.63)	4 (0.68)	4.13 (0.76)
job satisfaction Reported as psychological contract fulfilment- 5 item. <i>Polarity: Higher values are better</i>				
Mean/SD	2.71 (0.69)	2.84 (0.68)	2.83 (0.67)	2.71 (0.63)
Mental wellbeing Self-reported- Warr (1990) 12-item measurement of wellbeing <i>Polarity: Higher values are better</i>				
Mean/SD	3.15 (0.67)	3.17 (0.76)	3.42 (0.65)	3.16 (0.63)

Wellbeing - Participatory vs No intervention - 1-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Some concerns <i>(Lack of clarity; baseline characteristics and statistical analysis not presented)</i>
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Outcome measure self-reported)</i>
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns <i>(Self-reported outcome)</i>

Job satisfaction - Participatory vs No intervention - 1-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Some concerns <i>(Lack of clarity; baseline characteristics and statistical analysis not presented)</i>

Section	Question	Answer
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Outcome measure self-reported)</i>
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns <i>(Self-reported outcome)</i>

Mental wellbeing - Job crafting vs No intervention - 1-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Some concerns <i>(Lack of clarity; baseline characteristics and statistical analysis not presented)</i>
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low

Section	Question	Answer
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (<i>Outcome measure self-reported</i>)
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Study arms

Job crafting (N = 23)	
Brief name	Job redesign [page 10]
Rationale/theory/Goal	To modify job characteristics as a means of enhancing employee outcomes. [page 5]
Materials used	None reported
Procedures used	<ul style="list-style-type: none"> • 2 main phases: assessment to define problems and identify solutions and implementation. • The assessment phase started with a two day workshop, in which employees worked in small groups to identify core job tasks and the obstacles that prevent effective working. • Employees then rated the current job design scenario and the effects of the job on employee well-being and performance, and the work plan was agreed. • The proposals were compiled into a report by the research team, which was then discussed at a joint meeting between employees, management and researchers. The outcome of this joint meeting was to agree which changes to job design would be implemented.

	<ul style="list-style-type: none"> • In the implementation phase, teams were tasked with implementing the proposed initiatives within four months and monitoring the effectiveness of the changes. The research team attended team meetings to discuss progress and raised questions with management if employees were experiencing difficulty in implementation. • At the last of these meetings, employee representatives, team leaders and managers confirmed that each initiative had been fully implemented. <p>[pages 16-17]</p>
Provider	Researchers- no other details provided [page 16]
Method of delivery	Workshop and team meetings [pages 15-16]
Setting/location of intervention	Not reported
Intensity/duration of the intervention	2 day workshop and weekly team meetings for 4 months [page 17]
Tailoring/adaptation	Not applicable
Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	None
No intervention (N = 39)	

Brief name	No intervention
Rationale/theory/Goal	Not applicable
Materials used	Not applicable
Procedures used	They received the intervention two months after the study completed [page 19]
Provider	Not applicable
Method of delivery	Not applicable
Setting/location of intervention	Not applicable
Intensity/duration of the intervention	Not applicable
Tailoring/adaptation	Not applicable
Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	Not applicable

D.22 Holman 2010

Bibliographic Reference Holman, David J; Axtell, Carolyn M; Sprigg, Christine; Totterdell, Peter; Wall, Toby D; The mediating role of job characteristics in job redesign interventions: A serendipitous quasi-experiment.; Journal of Organizational Behavior; 2010; vol. 31 (no. 1); 84-105

Study details

Study design	Non-randomised controlled trial (NRCT)
Trial registration number	Not reported
Aim	To determine whether a participatory job redesign intervention is effective in improving employee wellbeing.
Country/geographical location	UK
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: private • Industry: health insurance and healthcare (administrative) • Organisation size: large • Contract type: not reported. • Seniority: team members (not managers) • Income: not reported
Inclusion criteria	<ul style="list-style-type: none"> • Team members of all five sections of the department
Exclusion criteria	Not reported
Method of allocation concealment	Not reported

Unit of allocation	Cluster- department section
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • No power calculations were reported. • No ITT analysis was reported. • Hypotheses were tested using multilevel regression modelling. The data had two-levels, with measurement occasions (level-1) nested within individuals (level-2).
Attrition	<ul style="list-style-type: none"> • At Time 1, the survey was completed by 188 of 215 potential respondents, giving a response rate of 87%. • At Time 2, the survey was completed by 173 of 203 potential respondents, giving a response rate of 85%. • The longitudinal sample, comprising those who responded at both Time 1 and 2, was 119 (55% of potential respondents).
Assessments and timepoints	<p>The following outcomes were measured at the following timepoints:</p> <ul style="list-style-type: none"> • Baseline • 1 month after the intervention had been fully implemented. <p>Primary outcomes were:</p> <ul style="list-style-type: none"> • Job-related wellbeing • Job design variables
Study limitations (author)	<ul style="list-style-type: none"> • The confounding nature of the outsourcing initiative could have introduced bias. • The study was non-randomised, which could have resulted in bias. • The outcome measures were self-reported, which could have resulted in bias. • There was a relatively small sample size.
Study limitations (reviewer)	<ul style="list-style-type: none"> • No ITT analysis was reported. • There was a short follow-up time, and so the long-term effects of the intervention are unknown.

Source of funding	Economic and Social Research Council, UK.
--------------------------	---

Study arms

Participatory job redesign (N = 71)
Control (N = 48)

Characteristics

Study-level characteristics

	Study (N = 188)
Age	
Mean/SD	33.6 (<i>empty data</i>)
Gender	
Women	
Sample Size	n = 151 ; % = 80.3
Men	
Sample Size	n = 37 ; % = 19.7
Ethnicity Not reported	

Outcomes

Study timepoints	Baseline 1 (month) 1 month after the intervention had been fully implemented
-------------------------	---

Employee outcomes

	Participatory job redesign		Control	
	Baseline	1 (month)	Baseline	1 (month)
	N = 71	N = 71	N = 48	N = 48
Mental wellbeing Self-reported - 12 item measure on pleasant and unpleasant affect from Warr (1990). SD calculated from SE by reviewer. <i>Polarity: Higher values are better</i>				
Sample Size	n = 71 ; % = 100	n = 71 ; % = 100	n = 48 ; % = 100	n = 48 ; % = 100
Mean/SD	3.23 (0.76)	3.41 (0.67)	3.35 (0.76)	3.31 (0.76)

Wellbeing - Participatory job redesign vs Control - 1-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low

Section	Question	Answer
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Lack of detail around missing outcome data)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Lack of detail around missing outcome data and self-reported outcome)</i>

Study arms

Participatory job redesign (N = 71)	
Brief name	Participatory job redesign [87]
Rationale/theory/Goal	A participative job redesign intervention was implemented with the goal of enhancing job design characteristics, and consequently improving employee wellbeing. The job design approach was based on job demands–resources theory, as well as empirical evidence, and discussions with managers and employees. It was decided that the intervention would focus on trying to increase employees’ experience of key job resources and reduce their experience of one key job demands. It was expected that the job redesign intervention would enable employees to develop ideas about how to improve their job, and that these ideas would need to be enacted or implemented by employees if their experience of job characteristics were to be altered. [page 87]
Procedures used	<ul style="list-style-type: none"> • The job redesign intervention was based on the Scenarios Planning tool (Axtell et al, 2001). • The assessment and redesign phase were conducted in a one day off-site meeting.

	<ul style="list-style-type: none"> • Each team identifying core job tasks and the obstacles that prevent effective working. The current job design was then rated with regard to job characteristics and their effects on wellbeing and performance. • Teams were asked to suggest changes to the current job that would maximise performance and wellbeing. All suggestions were considered in terms of their effect on job characteristics and those rated most important by employees were adopted. • The implementation phase occurred in the following months, with teams given responsibility to implement the proposed job redesign changes. Two representatives per team agreed to monitor progress on job design changes, and to attend implementation meetings with the research team to discuss progress. • The research team raised questions with management if employees were experiencing difficulty in implementation. <p>[pages 88 and 89]</p>
Provider	Researchers [pages 88 and 89]
Method of delivery	<ul style="list-style-type: none"> • One-day assessment and redesign meeting • Implementation meeting <p>[pages 88 and 89]</p>
Setting/location of intervention	<ul style="list-style-type: none"> • One-day assessment and redesign meeting occurred off site. <p>[page 88]</p>
Intensity/duration of the intervention	<ul style="list-style-type: none"> • One-day meeting • 3 implementation meetings spread over 3 months. <p>[pages 88 and 89]</p>
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported

Actual treatment fidelity	Not reported
Other details	None
Control (N = 48)	
Brief name	Inert-treatment control group- no changes were implemented [page 90]
Rationale/theory/Goal	Not applicable
Materials used	Not reported
Procedures used	Not reported
Provider	Not reported
Method of delivery	Not reported
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported

Actual treatment fidelity	Not reported
Other details	None

D.23 Hulshof, 2020

Bibliographic Reference Hulshof, Inge L; Demerouti, Evangelia; Le Blanc, Pascale M; Providing Services During Times of Change: Can Employees Maintain Their Levels of Empowerment, Work Engagement and Service Quality Through a Job Crafting Intervention? *Frontiers in psychology*; 2020; vol. 11; 87

Study details

Trial registration number	Not reported
Aim	Explore the effects of a job crafting intervention during times of organizational change. The intervention focuses on increasing job crafting behavior, in order to prevent a decrease in work engagement, empowerment, and the provision of high quality services.
Country/geographical location	Netherlands
Setting	Dutch unemployment agency
Inclusion criteria	Not specified
Exclusion criteria	Not specified
Method of randomisation	Non-randomized study
Method of allocation concealment	Not specified
Unit of allocation	Group (Building)
Unit of analysis	Individual

Statistical method(s) used to analyse the data	General Linear Modelling; two-way repeated measure analyses of variance with a time (T1 and T2 measure) by group (intervention and control) design. Within group differences Afterward explored via paired sample t-tests; Customer satisfaction outcomes were analysed using t-tests.
Attrition	127/163 (78%) of participants allocated to intervention and control arms provided both pre and post data
Assessments and timepoints	Pre-measures collected 2 weeks prior to intervention commencement, data collected at 3 months. Data collected using: Job Crafting Scale, Utrecht Work Engagement Scale, Empowerment via Spreitzer (1995) 12-item scale, Service-oriented task performance was assessed using author developed scale; Empowering Service was collected via an adapted version of the Empowering Leadership Scale which was also adapted for customers to collect customer ratings.
Study limitations (author)	Self-report, lack of randomisation, confounding by other variables outside of the control of the intervention (authors refer to the lack of impact on 3 out of 4 job crafting dimensions), use of a single pre-intervention measure.
Study limitations (reviewer)	Self-report, lack of randomization, lack of blinding and allocation concealment - employees in the control arm had access to the newsletter recruiting and providing intervention details and potentially interacted with employees allocated to the intervention, confounding by unmeasured variables.
Source of funding	Not specified

Study arms

Job crafting (N = 74)

Wait-list (N = 89)

Characteristics

Arm-level characteristics

Characteristic	Job crafting (N = 74)	Wait-list (N = 89)
Age	46.1 (NR)	46.3 (NR)
Mean (SD)		

Characteristic	Job crafting (N = 74)	Wait-list (N = 89)
Gender (% Female) NICE calculated Nominal	66	67
Ethnicity Nominal	NR	NR

Outcomes

Study timepoints

12 month (After the intervention)

Employee outcomes

Outcome	Job crafting, 12 month, N = 74	Wait-list, 12 month, N = 89
Work engagement Using Utrecht Work Engagement Scale Sample size	n = 66 ; % = 89.2	n = 61 ; % = 68.5
Work engagement Using Utrecht Work Engagement Scale Mean (SD)	4.74 (0.93)	4.74 (0.94)
Empowerment using as scale by Spreitzer measuring competence, self-determination, impact and meaning.	n = 66 ; % = 89.2	n = 61 ; % = 68.5

Outcome	Job crafting, 12 month, N = 74	Wait-list, 12 month, N = 89
Sample size		
Empowerment using as scale by Spreitzer measuring competence, self-determination, impact and meaning.	5.11 (0.71)	5.06 (0.66)
Mean (SD)		

Work engagement - Polarity - Higher values are better.

Empowerment - Polarity - Higher values are better.

Critical appraisal - ROBINS-I: a tool for assessing risk of bias in non-randomised studies of interventions.

Work engagement - Job crafting vs Wait-list (12 months follow-up)

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Higher proportion of dropouts in control group)</i>

Section	Question	Answer
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Self-reported outcomes)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(high drop-out rate and self-reported outcome)</i>

Empowerment - Job crafting vs Wait-list (12 months follow-up)

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Higher proportion of dropouts in control group)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Self-reported outcomes)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low

Section	Question	Answer
Overall bias	Risk of bias judgement	Serious <i>(high drop-out rate and self-reported outcome)</i>

Study arms

Job crafting (N = 74)

Brief name	Job crafting
Rationale/theory/Goal	The study explores the effects of a job crafting intervention during times of organizational change. The intervention based on experiential learning theory focuses on increasing job crafting behavior, in order to prevent a decrease in work engagement, empowerment, and the provision of high quality services.
Materials used	Weekly newsletter used for recruitment followed up by detailed presentations during work meetings and also intervention results were shared via the weekly newsletter; workbook and copy of presentation; Interviews to understand employee needs; nine workshops delivered in an external training facility, with a maximum of 12 participants per group were given; debriefing session in which the results of the intervention were discussed. Weekly reminders sent in the weeks between workshop day 1 and day 2. Trainer checklists used to ensure all tasks were complete. Self-report measures: Job Crafting Scale, Utrecht Work Engagement Scale, Empowerment via Spreitzer (1995) 12-item scale, Service-oriented task performance was assessed using author developed scale; Empowering Service was collected via an adapted version of the Empowering Leadership Scale which was also adapted for customers to collect customer ratings.
Procedures used	2 day intervention - with a 6 week gap between days. Day one was a 5.5 hour workshop focused on theory and practicing with job crafting; Participants set four SMART goals which they worked on in the weeks between the first and second day; Participants received handouts of the presentation and a workbook in which they could take notes and formulate their job crafting goals. Day two focused on evaluation of the job crafting experience where participants reflected upon their experiences and thought about implementing job crafting in their work routines beyond the intervention. In the weeks between the first and second training day, a weekly reminder was sent to participants to help them work on their job crafting goals. A week before the second training day a reminder was sent to invite people to participate in the upcoming session.
Provider	Study author - experienced trainer.
Method of delivery	Group workshops delivered in an external training facility, with a maximum of 12 participants per group.

Setting/location of intervention	External training facility.
Intensity/duration of the intervention	2 day intervention - with a 6 week gap between days. Day one was a 5.5 hour workshop focused on theory and practicing with job crafting; Day two was 2 hours focused on evaluation of the job crafting experience where participants reflected upon their experiences and implementation of job crafting in their work routines beyond the intervention.
Tailoring/adaptation	The intervention workshops were extended by 90 minutes in order to train participants how job crafting could help them provide optimal services to their unemployed customers; Interviews conducted with 19 participants to make sure the intervention covered the needs of employees (themes: manageable workload, clear targets and more performance feedback, more role clarity and better communication with management and between the different departments).
Unforeseen modifications	Not reported
Planned treatment fidelity	A standardization process was conducted in order to actively maintain intervention fidelity. All training sessions and additional contact (via email) was standardized. Checklists were available for the trainer to check whether everything was discussed. A timetable was maintained during each training session.
Actual treatment fidelity	Not reported
Other details	Not specified

2 day intervention with 4 stages based on experiential learning theory.

Wait-list (N = 89)

Brief name	Waiting list control - after the study was completed, people in the control group were offered to participate in the job crafting training.
Rationale/theory/Goal	Waiting list control to facilitate the exploration of the effects of a job crafting intervention.
Materials used	Not reported
Procedures used	Not reported
Provider	Not reported
Method of delivery	Not reported

Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not specified

D.24 Im 2016

Bibliographic Reference

Im, Sook Bin; Cho, Mi-Kyoung; Kim, Se Young; Heo, Myoung Lyun; The Huddling Programme: effects on empowerment, organisational commitment and ego-resilience in clinical nurses - a randomised trial.; Journal of clinical nursing; 2016; vol. 25 (no. 910); 1377-87

Study details

Study design	Randomised controlled trial (RCT)
Trial registration number	EU 12–25
Study start date	24-Dec-2012
Study end date	28-Feb-2013

Aim	To determine whether a 'Huddling Programme' that provides peer support is effective in improving retention of nurses, as well as organisational commitment, empowerment and ego-resilience.
Country/geographical location	Seoul, Korea
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: not reported • Industry: Healthcare • Large organisation • Contract type: not reported. • Seniority: less than 5 years of experience • Income: Not reported
Inclusion criteria	<ul style="list-style-type: none"> • Nurses who had less than 5 years of experience
Exclusion criteria	<ul style="list-style-type: none"> • Nurses who had 5 or more years of experience
Method of randomisation	Numbers were randomly assigned to nurses on the roster.
Method of allocation concealment	Not reported
Unit of allocation	Individual
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • Data were analysed using SPSS (version 19.0, SPSS, Chicago, IL, USA). • Demographic and work-related characteristics of participants were analysed using frequency, percentage, mean and standard deviation (SD) values.

	<ul style="list-style-type: none"> • Demographic and work-related characteristics were compared between the experimental and control groups and the homogeneity test for outcome variables was implemented with the chi-square test, Fisher's exact test and independent t-test. • Differences in outcome variables between the intervention and control groups after were analysed with ANCOVA after controlling for age as a covariate. • The probability cut-off for statistical significance was 0.05.
Attrition	<ul style="list-style-type: none"> • Total withdrawal rate was 18.3%. • 25% attrition in the intervention group • 15.6% attrition in the control group.
Assessments and timepoints	Outcomes were measures at baseline and at 4 weeks after the completion of the programme. Outcomes for empowerment, job satisfaction and ego resilience were collected, and extracted as wellbeing, job satisfaction and stress for this review.
Study limitations (author)	<ul style="list-style-type: none"> • Issues with generalisability: <ul style="list-style-type: none"> ○ hospitals already had a high rate for turnover intentions. ○ participants were selected using a convenience sampling method. ○ information was collected with self-reported questionnaires. ○ young age of participants (age range 20-33 years) ○ age was treated and analysed as a covariate where statistically significant differences were found between the two groups. • Short follow-up time means that long-term effectiveness cannot be determined
Study limitations (reviewer)	<ul style="list-style-type: none"> • There was no blinding. • Small study populations
Source of funding	Eulji University

Study arms

Intervention (N = 30)

30 participants were in the huddling programme group

Control (N = 30)

30 participants did not receive the intervention

Characteristics

Study-level characteristics

	Study (N = 60)
Age Data for completers only	
Less than 25 years	
Sample Size	n = 19 ; % = 38.8
25 to 29 years	
Sample Size	n = 22 ; % = 44.9
30 years and above	
Sample Size	n = 8 ; % = 16.3
Gender Data for completers only	
Men	

	Study (N = 60)
Sample Size	n = 9 ; % = 18.4
Women	
Sample Size	n = 40 ; % = 81.6
Ethnicity Not reported	
Socioeconomic status Not reported	

Outcomes

Study timepoints	Baseline 4 (week) Outcomes were collected 4 weeks after completion of the programme.
-------------------------	---

Employee outcomes

	Intervention		Control	
	Baseline	4 (week)	Baseline	4 (week)
	N = 30	N = 30	N = 30	N = 30
Wellbeing (<i>Not reported</i>) Measured by empowerment- based on scale by Spreitzer (1995) <i>Polarity: Higher values are better</i>				

	Intervention		Control	
	Baseline	4 (week)	Baseline	4 (week)
	N = 30	N = 30	N = 30	N = 30
Sample Size	n = 24 ; % = 80	n = 24 ; % = 80	n = 25 ; % = 83.3	n = 25 ; % = 83.3
Mean/SD	41.5 (5.6)	41.3 (6.6)	39.04 (6.55)	37.4 (6.7)
job satisfaction <i>(Not reported)</i> Measured by organisational commitment- tool devised by Allen and Meyer (1990) <i>Polarity: Higher values are better</i>				
Sample Size	n = 24 ; % = 80	n = 24 ; % = 80	n = 25 ; % = 83.3	n = 25 ; % = 83.3
Mean/SD	33.5 (5.3)	35 (4.1)	33.2 (7.3)	32.3 (5.2)
Stress <i>(Not reported)</i> Measured by ego-resilience- 14 item tool. <i>Polarity: Higher values are better</i>				
Sample Size	n = 24 ; % = 80	n = 24 ; % = 80	n = 25 ; % = 83.3	n = 25 ; % = 83.3
Mean/SD	45 (6.8)	43.9 (6.6)	43.9 (6.6)	45 (6.8)

Employeeoutcomes-Wellbeing-MeanSD-Intervention-Control-t4

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low
Domain 2b: Risk of bias due to deviations from the intended interventions (effect of adhering to intervention)	Risk of bias judgement for deviations from the intended interventions (effect of adhering to intervention)	Low
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns <i>(Outcomes were self-reported)</i>
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns <i>(Self-reported outcomes)</i>

Employeeoutcomes-jobsatisfaction-MeanSD-Intervention-Control-t4

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low
Domain 2b: Risk of bias due to deviations from the intended interventions (effect of adhering to intervention)	Risk of bias judgement for deviations from the intended interventions (effect of adhering to intervention)	Low

Section	Question	Answer
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns <i>(Outcomes were self-reported)</i>
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns <i>(Self-reported outcomes)</i>

Employeeoutcomes-Stress-MeanSD-Intervention-Control-t4

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low
Domain 2b: Risk of bias due to deviations from the intended interventions (effect of adhering to intervention)	Risk of bias judgement for deviations from the intended interventions (effect of adhering to intervention)	Low
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns <i>(Outcomes were self-reported)</i>
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low

Section	Question	Answer
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcomes</i>)

Study arms

Huddling programme intervention (N = 30)	
Brief name	Huddling programme designed to provide new nurses with access to peer group activities to support them with job stress and job-related problem [page 1377]
Rationale/theory/Goal	The programme applies the concept of “huddling” (a method of mutual support that is used by groups of penguins to survive against extreme cold) to groups of nurses via an empowerment programme, in an attempt to decrease turnover. This method aims to allow new nurses to overcome adversity in the occupational environment by acquiring appropriate coping mechanisms to deal with job stress and job-related problems that are often caused by the lack of working experience. [pages 1377 and 1379]
Materials used	A social networking service- the Naver BAND application programme that runs on a smartphone [page 1380]
Procedures used	<ul style="list-style-type: none"> • There were three substructures of the huddling programme: full-day huddling programme, after-work huddling programme and social networking service huddling programme. • The purpose of the full-day huddling programme was to promote empowerment and self-determination through various activities. This took place outside of the hospital in order to provide a pleasant diversion. • An after-work huddling programme was designed to manage the workload and job performance of participants. Participants worked in chosen small groups, and shared their negative feelings associated with job stress and interpersonal relationships with each other and with a mentor, whose role was to listen and empower the nurses. In the fourth and fifth meetings, the sessions took place without the mentor to allow group autonomy and cohesion. • A social networking service huddling programme was utilised for those who experienced difficulty with real-time accessibility to emails due to their work schedule, such as among those nurses performing shift work. This substructure involved sending messages about mutual encouragement, inquiries about group members, and daily living.

	[pages 1380 and 1381]
Provider	<ul style="list-style-type: none"> • Researchers- no further information provided. • Mentors- no further information provided. <p>[page 1380]</p>
Method of delivery	Full day workshop, after work sessions and a social networking service platform [page 1380]
Setting/location of intervention	<ul style="list-style-type: none"> • Full day workshop- a site outside of the hospital workplace • After work sessions- not reported <p>[page 1380]</p>
Intensity/duration of the intervention	<ul style="list-style-type: none"> • The programme was conducted over 9 weeks. • 1 full-day huddling programme • 5 after work sessions • Social networking service was available until the end of the study period. <p>[page 1380]</p>
Tailoring/adaptation	A social networking service huddling programme was utilised for those who experienced difficulty with real-time accessibility to emails due to their work schedule [page 1380]
Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	None
Control (N = 30)	

Brief name	Participants did not receive the intervention [page 1380]
Rationale/theory/Goal	Not applicable
Materials used	Not applicable
Procedures used	Not applicable
Provider	Not applicable
Method of delivery	Not applicable
Setting/location of intervention	Not applicable
Intensity/duration of the intervention	Not applicable
Tailoring/adaptation	Not applicable
Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	None

D.25 Jorm 2010

Bibliographic Reference

Jorm, Anthony F; Kitchener, Betty A; Sawyer, Michael G; Scales, Helen; Cvetkovski, Stefan; Mental health first aid training for high school teachers: a cluster randomized trial.; BMC psychiatry; 2010; vol. 10; 51

Study details

Study design	Cluster randomised controlled trial
Trial registration number	ACTRN12608000561381
Study start date	2008
Study end date	2008
Aim	To improve the skills of high school teachers on mental health first aid to assist students who are developing mental health problems.
Country/geographical location	Australia
Setting	<p>Workplace</p> <ul style="list-style-type: none"> • Sector: Public • Industry: Education • Organisation size: Not reported. • Contract type: Not reported. • Seniority: range of roles from support officer to leadership roles • Income: Not reported
Inclusion criteria	Teachers of the middle years in school (i.e. Years 8-10, ages 12-15 years) at schools willing to participate in the study

Exclusion criteria	Not reported
Method of randomisation	not reported
Method of allocation concealment	Schools were told about the allocation before their teachers completed the pre-test questionnaire. This was necessary so that they could schedule the staff training days.
Unit of allocation	cluster
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<p>mixed-effects models for continuous and dichotomous outcome variables, with group by measurement occasion interactions.</p> <p>Required sample size was estimated using software for power analysis.</p> <p>No ITT reported</p>
Attrition	<p>100% participants completed 1st questionnaire.</p> <p>88% completed post-test questionnaire.</p> <p>72% completed follow up questionnaire.</p> <p>for the students: 76% did not complete the follow up questionnaire</p>
Assessments and timepoints	<p>The following assessments we made at these timepoints.</p> <ul style="list-style-type: none"> • Baseline • Endpoint (0 weeks) • follow-up (6 months) <p>The primary outcome was teacher mental health knowledge.</p> <p>Secondary outcomes included.</p>

	<ul style="list-style-type: none"> • Recognition of depression • Stigma • Psychological distress
Study limitations (author)	<p>The course content was modified to meet teacher expectations and duration of the training therefore the findings do not necessarily apply to the full 14 hour course.</p> <p>No randomisation of schools after baseline as this was not feasible (schools needed to know if they needed to schedule in staff training)</p> <p>2 schools withdrew from the project.</p> <p>There were significant effects on questionnaire items measuring stigma- possible participants were biased to given socially desirable responses</p>
Study limitations (reviewer)	<p>2/16 schools that were recruited were not randomised.</p> <p>No blinding of participants</p> <p>No systematic attempt to the blind the students from the teachers that received training or not.</p>
Source of funding	Australian Research Council Linkage grant and from a National Health and Medical Research Council Fellowship.

Study arms

Mental health first aid (N = 221)

7 clusters, 221 participants

Waitlist (N = 106)

7 clusters, 106 participants

Characteristics

Study-level characteristics

	Study (N = 423)
Age Not reported	
Gender	
Ethnicity not reported	

Arm-level characteristics

	Mental health first aid (N = 221)	Waitlist (N = 106)
Gender		
Female		
Sample Size	n = 143 ; % = 64.7	n = 70 ; % = 66
Male		
Sample Size	n = 78 ; % = 35.3	n = 36 ; % = 34
Role in school		
Leadership		
Sample Size	n = 38 ; % = 17.4	n = 28 ; % = 27.2

	Mental health first aid (N = 221)	Waitlist (N = 106)
Classroom teacher		
Sample Size	n = 146 ; % = 66.7	n = 58 ; % = 56.3
Student welfare/counsellor		
Sample Size	n = 15 ; % = 6.9	n = 6 ; % = 5.8
Support officer		
Sample Size	n = 14 ; % = 6.4	n = 7 ; % = 6.8
Other		
Sample Size	n = 6 ; % = 2.7	n = 4 ; % = 3.9
Time working in schools		
10 years or less		
Sample Size	n = 175 ; % = 79.2	n = 75 ; % = 72.1
11-20 years		
Sample Size	n = 46 ; % = 20.8	n = 29 ; % = 27.9

Outcomes

Study timepoints	Baseline 0 (month) Immediately after training 6 (month) 6 months after training
-------------------------	---

Employee outcomes

	Mental health first aid			Waitlist		
	Baseline	0 (month)	6 (month)	Baseline	0 (month)	6 (month)
	N = 221	N = 221	N = 221	N = 106	N = 106	N = 106
Mental health knowledge (0-21) 21 questions- score related to number of questions answered correctly. <i>Polarity: Higher values are better</i>						
Sample Size	n = 221 ; % = 100	<i>empty data</i>	n = 221 ; % = 100	n = 106 ; % = 100	<i>empty data</i>	n = 106 ; % = 100
Mean/SD	11.1 (3.6)	13.1 (3.3)	12.7 (3.4)	11.3 (3.1)	11.1 (3.6)	10.8 (3.9)
Mental health symptoms (0-24) Self-reported- using medium-high psychological stress K6. <i>Polarity: Lower values are better</i>						
No of events	n = 140 ; % = 63.5	<i>empty data</i>	n = 114 ; % = 58.9	n = 62 ; % = 58.8	<i>empty data</i>	n = 60 ; % = 59
Sample Size	n = 221 ; % = 100	<i>empty data</i>	n = 221 ; % = 100	n = 106 ; % = 100	<i>empty data</i>	n = 106 ; % = 100

Mental health knowledge - Mental health first aid vs Waitlist - 6-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	High <i>(Allocation of clusters was swapped after randomisation)</i>
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Some concerns <i>(Higher levels of attrition in intervention group)</i>
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Outcome measure was self-reported)</i>
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	High <i>(Allocation of clusters was swapped after randomisation; self-reported outcome)</i>

Mental health symptoms - Mental health first aid vs Waitlist - 6-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low

Section	Question	Answer
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	High (Allocation of clusters was swapped after randomisation)
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Some concerns (Higher levels of attrition in intervention group)
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (Outcome measure was self-reported)
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	High (Allocation of clusters was swapped after randomisation; self-reported outcome)

Study arms

Mental health first aid (N = 221)	
Brief name	A modified version of the Youth Mental Health First Aid course [p2]
Rationale/theory/Goal	Hypotheses tested were that mental health first aid training improves the following: mental health knowledge, stigmatizing attitudes, confidence in helping students, helping behaviours towards their students, knowledge of

	<p>school policies and procedures for dealing with student mental health problems, support given to colleagues with mental health problems, seeking information about mental health problems and their own mental health. [P2]</p> <p>For students, the hypotheses tested were that the mental health first aid training of their teachers would lead to an increase in the information they receive about mental health problems from their teachers, and that their mental health would improve.</p>
Materials used	<p>Youth Mental Health First Aid manual</p> <p>A set of mental health factsheets</p>
Procedures used	<p>Lesson plans were developed by two Mental Health First Aid trainers of instructors who had previously worked as teachers. Additional material was added by staff of the Department of Education and Children's Services. [P2]</p>
Provider	<p>Two instructors, one from the Department of Education and Children's Services and the other from the Child and Adolescent Mental Health Service.</p> <p>These instructors received a one-week training program in how to conduct this modified Youth Mental Health First Aid course. They were trained by two experienced trainers, including Betty Kitchener who devised the Mental Health First Aid course. [P2]</p>
Method of delivery	<p>Not reported</p>
Setting/location of intervention	<p>Participants schools [p2]</p>
Intensity/duration of the intervention	<p>2 days (one part each day)</p> <p>7 hours each day [p2]</p>
Tailoring/adaptation	<p>Teachers received a modified version of the Youth Mental Health First Aid course [p2]- The course content was modified to meet the role expectations of teachers and the duration of the training had to be abbreviated from 14 hours to 7 hours for the majority of staff to fit in with the scheduled staff training days available to schools.[p 11]</p>

Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	<p>Part 1 was designed for all education staff and covered departmental policy on mental health issues, common mental disorders in adolescents (depressive and anxiety disorders, suicidal thoughts and behaviours, and non-suicidal self-injury) and how to apply the mental health action plan to help a student with such a problem.</p> <p>Part 2 was for teachers who had a particular responsibility for student welfare. It provided information about first aid approaches for crises that require a more comprehensive response and information about responses for less common mental health problems. Topics included how to give initial help to students who are experiencing a psychotic or eating disorder or substance misuse.</p>
Waitlist (N = 106)	
Brief name	Not reported
Rationale/theory/Goal	Not reported
Materials used	Not reported
Procedures used	Not reported
Provider	Not reported
Method of delivery	Not reported

Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	To receive training once the trial had finished.

D.26 Karanika-Murray, 2018

Bibliographic Reference Karanika-Murray, Maria Gkiontsi, Dimitra Baguley, Thom; Engaging leaders at two hierarchical levels in organizational health interventions: Insights from the intervention team; INTERNATIONAL JOURNAL OF WORKPLACE HEALTH MANAGEMENT; 2018; vol. 11 (no. 4); 210-227

Study details

Trial registration number	Not reported
----------------------------------	--------------

Aim	The purpose of this paper is to explore leader engagement by drawing from the experiences of an intervention team who delivered an organization intervention
Country/geographical location	UK
Setting	Public sector. Two organizations: one hospital and one local government
Inclusion criteria	Not specified but study participants were actively involved in implementing the interventions in the two organizations, which comprised of: the intervention leads (one individual in each organization), the intervention champions (two individuals in one of the two organizations and one in the other) and the implementation team of external consultants (two individuals, each assigned to one of the two organizations). The group of interviewees were considered to fulfil the criteria of good informants (Morse, 1989).
Exclusion criteria	Not specified
Method of randomisation	Not reported/applicable
Method of allocation concealment	Not reported/applicable
Unit of allocation	Not reported/applicable
Unit of analysis	Individual
Statistical method(s) used to analyse the data	Thematic analysis was carried out on the data from the interviews (Braun and Clarke, 2006). Interviews were recorded listened to several times and notes were made throughout. Preliminary analysis was applied by one of the researchers to identify initial themes which were then cross-checked by another researcher and populated with evidence from the recordings and interview notes.
Attrition	Not reported
Assessments and timepoints	Semi-structured individual interviews, lasting approximately 60 min via phone with follow-up telephone interviews conducted, where it was deemed necessary to expand on some of the responses, gain more in-depth information, or clarify any responses - but it is unclear how many of these occurred.

Theme 1

Barriers to leader engagement in terms of their reactions to the intervention

Sub themes:

Perceptual and emotional barriers

lack of confidence in intervention sustainability,

lack of buy-in related to perceived lack of relevance or interest in the goals of the intervention.

Line managers: feeling that own authority was being undermined, structural changes and excessive workload.

[...] change in management resulted in ongoing “sell” of the benefits of the project and although the initiatives were driven, following the survey and group sessions, by staff, new managers in post wanted to be seen to be taking action and influence change from their own experiences (Interviewee A).

[...] they thought that the project was coming to help this and not give [them] extra work (Interviewee E).

Poor quality of communication

the lack of communication - due to weak or lack of people management skills necessary to support staff involvement in the broader intervention program and specific activities.

Line Managers: highly hierarchical structure and inconsistent messages due to loss of information cascaded down the hierarchy.

[...] inconsistency in the message around the initial launch being about the older worker and that was quite quickly lost (Interviewee A).

Underlying organizational factors explaining the leaders' disengagement and lack of support for the intervention

history of failed change,

Senior/Line Managers: too many layers in the hierarchy, bureaucracy, work planning considerations and priorities)

Historically in the healthcare sector the change implemented top down cannot be embedded and it is not sustainable (Interviewee F).

	<p><i>There have been similar initiatives done in the past around engagement and a couple of managers mentioned about sustainability and projects come and go and nothing seems to be sustainable (Interviewee C).</i></p>
<p>Theme 2</p>	<p>Dealing with barriers to leader engagement:</p> <p>Sub themes</p> <p>Formalized and targeted communication</p> <p>discussions and meetings with Senior (SM)/Line Managers (LM), aiming to generate quick intervention wins and to secure buy-in</p> <p><i>[...] going to the middle managers and speaking to SM and be fully aware of how this is (Interviewee G talking about an Line Managers negative behaviours).</i></p> <p>Perspective-taking</p> <p>initiating reactive ad hoc discussions, addressing concerns, perspective-taking, active listening, incorporating suggestions into intervention plans and recognizing the leader’s contribution to the intervention.</p> <p><i>[...] from “this is your project; it is not for us” to “this is your project and we want to work with you to achieve these results” (Interviewee C reporting on a leader’s position).</i></p>
<p>Theme 3</p>	<p>Factors facilitating leader engagement.</p> <p>Sub themes</p> <p>Regular and quality communication</p> <p>consistent messages and unambiguous language, encouraging follow-up discussions and face-to-face meetings, keeping communication lines open.</p> <p><i>It is understanding what would add value to them and it is sticking to the initial objective and being very clear what the objectives are, what the outcomes are gonna be and when they will be achieved by (Interviewee A).</i></p>

	<p>Showing consideration for the leader's role and needs</p> <p>getting acquainted with the leaders, genuine and personal approach, getting to know the leader's perspective, demonstrating how the intervention can add value to their daily work, showing respect by not acting without Senior Managers (SM) approval, professional and open relationship, especially relevant for SM)</p> <p><i>Learning and understanding their personalities [...] It was very important to always show respect to SM [...] show them their position and place (Interviewee E).</i></p> <p>Demonstrating impact on the business</p> <p>evidence that investment is worthwhile, value and benefits of the initiatives, supporting work culture and business priorities.</p> <p><i>[...] tell me what it aims to achieve [...] (Interviewee C reporting on a leader's position)</i></p>
Theme 4	<p>Factors accelerating leader engagement (building leader engagement takes time)</p> <p>Sub theme</p> <p>Cascading targeted messages</p> <p>regularly targeting specifically the Senior Managers (SM) and, in turn, cascading to the Line Managers (LM)</p> <p><i>Due to the regular updates they receive the SM know more what is going to happen [...] so therefore they come on board quite quickly (Interviewee E).</i></p> <p><i>[...] clearly the Director is supporting this and maybe I should get involved [...] (Interviewee C reflecting on the leaders' position).</i></p> <p>Allowing time and tuning the pace of engagement</p> <p>Engagement is first mental (allowing individuals to think through the implications, such as projected benefits, and plan ahead) and then behavioural; and the need to find the right time and pace for each leader when communicating or implementing the intervention, to facilitate easier integration into their normal workflow.</p>

	<p><i>[...] some people will think and be prepared to see through or understand that there are reasons why “things are not happening as quickly as I would like them to,” but some people say “actually I cannot afford any more time and this is not happening quickly enough” therefore, they drop out (Interviewee C).</i></p> <p>Projected benefits of change (for LM):</p> <p>appreciating the benefits of the anticipated change on daily work</p> <p><i>As soon as the LMs see direct effect on their work some LMs want to be left and some are more than happy to be involved (Interviewee E).</i></p>
<p>Theme 5</p>	<p>Factors linked to differences in engagement between leadership levels.</p> <p>Sub theme</p> <p>The leader’s position in the hierarchy</p> <p>different roles and accountability; for Senior Managers (SM): wider reach, overall control and decision making; for Line Managers (LM): decision-making over operational activities, influential at the team level; the two levels were interrelated, such that lack of SM involvement is a risk to LM engagement.</p> <p><i>The more senior they get the more sway they have over large number of things (Interviewee C).</i></p> <p>The leader’s authority</p> <p>whose opinion staff respected the most.</p> <p><i>People will look to a level above their line manager [...] and then depends on the relationship between these two managers (Interviewee C).</i></p> <p>The scope of change</p> <p>breadth and pervasiveness of change; for LM: more cautious, limited by their remit.</p> <p><i>It depends on the level of the change (Interviewee C)</i></p>
<p>Study limitations (author)</p>	<p>The perspectives of the seven members of the intervention team reflected their personal experiences, of the specific intervention, in the specific context; and the data collection was not reflective of the experiences of the intervention participants (the employees) or the leaders’ perspectives. There was an</p>

	identified need for a broader and more balanced examination of leader engagement in intervention implementation, allowing to juxtapose the perspectives of different intervention stakeholders.
Study limitations (reviewer)	There is a lack of detail regarding the organization from which participants were drawn. There is a lack of detail regarding the intervention content and some of the specifics regarding its delivery. Lack of demographic data regarding the selected participants. Study makes reference to follow-up interviews but it unclear when and if this was undertaken and with whom. The study does not account for or outline mitigation of the potential bias introduced by interviewer in data collection or their role in the intervention and the analysis.
Source of funding	Supported by the European Union Programme for Employment and Social Solidarity – PROGRESS (2007-2013), implemented by the European Commission (Grant No. VP/2012/007/0503, 2013-2016).

Study arms

Organizational intervention (N = 7)

The intervention sought to support work engagement and influence retirement intentions in one hospital and one local government organization. The specific intervention activities related to improving the work environment for all employees and included: developing mentoring, implementing multidisciplinary teams, developing resources and revising policies and procedures. Activities varied broadly in content and delivery mode, as they were tailored to the specific needs of the target groups or departments and the nature of their work.

Characteristics

Study-level characteristics

Characteristic	Study (N = 7)
Age	NR
Nominal	
Gender	NR

Characteristic	Study (N = 7)
Nominal	
Ethnicity	NR
Nominal	

Critical appraisal - CASP qualitative checklist V2 (updated version use now)

Section	Question	Answer
Aims of the research	Was there a clear statement of the aims of the research?	Yes <i>(The purpose of this paper is to explore leader engagement by drawing from the experiences of an intervention team who delivered an organization intervention)</i>
Appropriateness of methodology	Is a qualitative methodology appropriate?	Yes <i>(The paper explores leader engagement by drawing from the experiences of an intervention team who delivered an organization intervention via semi-structured interviews with a selected set of participants)</i>
Research Design	Was the research design appropriate to address the aims of the research?	Yes <i>(Participants were selected and actively involved in implementing the interventions in the two organizations. The group of interviewees were considered to fulfil the criteria of good informants (Morse, 1989) and semi-structured individual interviews, lasting approximately 60 min undertaken over the phone which were recorded, with follow-up</i>

Section	Question	Answer
		<i>telephone interviews conducted where necessary. Thematic analysis was carried out on the data from the interviews and justified.)</i>
Recruitment Strategy	Was the recruitment strategy appropriate to the aims of the research?	Yes <i>(Study participants were selected based on their involvement in implementing the interventions in the two organizations, which comprised of: the intervention leads (one individual in each organization), the intervention champions (two individuals in one of the two organizations and one in the other) and the implementation team of external consultants (two individuals, each assigned to one of the two organizations). The group of interviewees were considered to fulfil the criteria of good informants (Morse, 1989).)</i>
Data collection	Was the data collected in a way that addressed the research issue?	Yes <i>(The group of interviewees were considered to fulfil the criteria of good informants (Morse, 1989) and semi-structured individual interviews, lasting approximately 60 min undertaken over the phone which were recorded, with follow-up telephone interviews conducted where necessary. There was no modification to intervention outlined and data-saturation was not discussed)</i>
Researcher and participant relationship	Has the relationship between researcher and participants been adequately considered?	No <i>(The study does not make reference to critical examination of the researchers own influence on formulation of research questions, data collection or choice of location or the potential bias (and efforts to mitigate potential bias))</i>

Section	Question	Answer
Ethical Issues	Have ethical issues been taken into consideration?	Yes <i>(Before the interview, the purpose of the study and ethical considerations (i.e. voluntary participation, confidentiality, anonymity, use of data, and feedback) were discussed with the participants. It is unclear if ethical approval from an ethics committee was required or sought.)</i>
Data analysis	Was the data analysis sufficiently rigorous?	Yes <i>(Thematic analysis was carried out on the data from the interviews (Braun and Clarke, 2006). Interviews were recorded listened to several times and notes were made throughout. Preliminary analysis was applied by one of the researchers to identify initial themes which were then cross-checked by another researcher and populated with evidence from the recordings and interview notes.)</i>
Findings	Is there a clear statement of findings?	Yes <i>(Themes and sub-themes are presented with underpinning verbatim quotes. These findings were discussed in light of the wider evidence base)</i>
Research value	How valuable is the research?	The research has some value <i>(The 7 participant sample from two organizations in the public sector may not be generalizable to those organizations within the sector or more widely)</i>
Overall risk of bias and relevance	Overall risk of bias	Low

Section	Question	Answer
Overall risk of bias and relevance	Relevance	Highly relevant

Study details

Brief name	Organizational intervention
Rationale/theory/Goal	The purpose of this paper was to explore leader engagement by drawing from the experiences of the intervention team involved in the development and implementation of an organization intervention
Materials used	The study does not report the specific materials used in the intervention. The specific intervention activities related to improving the work environment for all employees and included: developing mentoring, implementing multidisciplinary teams, developing resources and revising policies and procedures. Activities varied broadly in content and delivery mode, as they were tailored to the specific needs of the target groups or departments and the nature of their work.
Procedures used	The study does not report the specific interventional procedures undertaken. The specific intervention activities related to improving the work environment for all employees and included: developing mentoring, implementing multidisciplinary teams, developing resources and revising policies and procedures. Activities varied broadly in content and delivery mode, as they were tailored to the specific needs of the target groups or departments and the nature of their work.
Provider	'Dedicated intervention team' but the study lacks details regarding this.
Method of delivery	Unclear - Activities included developing mentoring, implementing multidisciplinary teams, developing resources and revising policies and procedures. Activities varied broadly in content and delivery mode, as they were tailored to the specific needs of the target groups or departments and the nature of their work.
Setting/location of intervention	Unclear if the intervention took place in the place of work or externally - The study is part of a larger study (details not outlined) that sought to develop, implement, and evaluate intervention activities to support work engagement and influence retirement intentions, which were carried out in one hospital and one local government organization.

Intensity/duration of the intervention	Unclear - activities included developing mentoring, implementing multidisciplinary teams, developing resources and revising policies and procedures. Activities varied broadly in content and delivery mode, as they were tailored to the specific needs of the target groups or departments and the nature of their work
Tailoring/adaptation	Activities included developing mentoring, implementing multidisciplinary teams, developing resources and revising policies and procedures. Activities varied broadly in content and delivery mode, as they were tailored to the specific needs of the target groups or departments and the nature of their work. There is a lack of details regarding what was tailored, how it was tailored and for whom.
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

D.27 Kidger 2016

Bibliographic Reference Kidger, Judi; Stone, Tracey; Tilling, Kate; Brockman, Rowan; Campbell, Rona; Ford, Tamsin; Hollingworth, William; King, Michael; Araya, Ricardo; Gunnell, David; A pilot cluster randomised controlled trial of a support and training intervention to improve the mental health of secondary school teachers and students - the WISE (Wellbeing in Secondary Education) study.; BMC public health; 2016; vol. 16 (no. 1); 1060

Study details

Study design	Cluster randomised controlled trial
---------------------	-------------------------------------

Trial registration number	ISRCTN13255300
Study start date	Jun-2013
Study end date	Jul-2014
Aim	To determine whether a peer support and training intervention can improve mental health and wellbeing of secondary school teachers and students.
Country/geographical location	England
Setting	<p>Workplace</p> <ul style="list-style-type: none"> • Public sector • Education • Medium organisation • Contract type: not reported. • Seniority: not reported • Income: not reported
Inclusion criteria	Non-fee paying, mainstream secondary schools
Exclusion criteria	Not reported
Method of randomisation	Computerised programme
Method of allocation concealment	Reported that the statistician was blinded
Unit of allocation	Cluster (School)

Unit of analysis	Individual
Statistical method(s) used to analyse the data	Robust standard errors were used in analyses to take into account clustering by school. Linear regression models were performed to examine the mean outcome score at follow up by arm. These were adjusted for baseline outcome score and school free school meal eligibility, as the samples were originally stratified and then paired according to this variable.
Attrition	208 out of 472 (44.1%) in the intervention group and 141 out of 552 (25.4%) in the control group were included in the analysis.
Assessments and timepoints	Mental wellbeing and depression were assessed using the WEMWBS and PHQ-9 scales respectively; at baseline and 5 to 10 months after training had been delivered and peer support services had been established.
Study limitations (author)	<ul style="list-style-type: none"> • Less than 50% of staff and students had questionnaire data at both timepoints. • The control arm had a particularly low staff response rate compared with the intervention arm. • The short follow-up time did not allow sufficient time for the programme to become embedded within the workplace.
Study limitations (reviewer)	<ul style="list-style-type: none"> • There was a large range of time for the possible follow-up point
Source of funding	National Institute for Health Research's School for Public Health Research (NIHR SPHR).

Study arms

Intervention (N = 472)

3 clusters

Usual practice (N = 552)

3 clusters

Characteristics

Study-level characteristics

	Study (N =)
Age Not reported	
Gender Not reported	
Ethnicity Not reported	
Socioeconomic status	

Outcomes

Study timepoints	6 (month) 5-10 month follow up from when training and support services were provided and set up.
-------------------------	--

Employees outcomes

	Intervention	Usual practice
	6 (month)	6 (month)
	N = 208	N = 141
Mental wellbeing (14-70) Edinburgh Wellbeing Scale (WEMWBS) <i>Polarity: Higher values are better</i>		

	Intervention	Usual practice
	6 (month)	6 (month)
	N = 208	N = 141
Mean/SD	47.7 (8)	47.2 (8.9)
Depression (0-9) PHQ-9 <i>Polarity: Lower values are better</i>		
Mean/SD	5.4 (4.6)	5.3 (4.5)

Mental wellbeing - Intervention vs Usual practice - 10-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	<i>Low</i>
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Some concerns (<i>High attrition in intervention group</i>)

Section	Question	Answer
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Outcome measure was self-reported)</i>
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns <i>(Self-reported outcome; high attrition in intervention group)</i>

Depression - Intervention vs Usual practice - 10-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Some concerns <i>(High attrition in intervention group)</i>
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Outcome measure was self-reported)</i>

Section	Question	Answer
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome; high attrition in intervention group</i>)

Study details

Study design	Focus group study
Statistical method(s) used to analyse the data	<p>Qualitative data were collected to determine feasibility, acceptability, sustainability and perceived usefulness of the intervention. Although this focused on both mental health first aid (MHFA) for staff and MHFA for students, only the data relating to staff are within scope for this guidance and are extracted here.</p> <p>There were 3 elements relating to the qualitative aspects of this study:</p> <ul style="list-style-type: none"> • Observation of training sessions (at least two training sessions (one adult MHFA and one youth MHFA in each school) with note taking guided by an observation schedule. • Focus groups, supplemented by individual interviews where groups were difficult to arrange, conducted with peer supporters and randomly selected teachers and non-teaching staff who had not received the training. (This took place 4-6 months after the training was delivered and the peer support service set up). • Interviews with 1–2 senior leaders (who had supported setting up the intervention in their schools) to ascertain their views on participation in the study, and the ways in which staff wellbeing was addressed prior to the intervention being established in the school. This took place 2-4 months after the training was delivered and the peer support service set up. <p>Methods:</p> <ul style="list-style-type: none"> • Interviews and focus groups were conducted on the school premises and lasted 30-50 minutes. • All interviews and focus groups were audio-recorded and transcribed. • Initially, the different groups of data (observations, interviews with key staff, interviews/focus groups with peer supporters and with non-trained staff) were analysed separately using constant comparison techniques.

	<ul style="list-style-type: none"> • Transcripts were examined for emergent themes which were compiled into a coding frame. For each new transcript, those themes that did not fit the existing frame were either added as new themes to the coding frame, or were used to expand and modify existing themes, until all data was accounted for. • Themes were then compared across the different groups of data for similarities and differences. • Initial focus group and interview transcripts were analysed independently by 2 members of the research team, to check the coding frame's reliability. Subsequently analyses were carried out by one team member, and a random sample was checked by another team member to ensure an accurate summary of the data.
Theme 1	<p>Improving staff knowledge and attitudes towards mental health</p> <p>The MHFA training was found to be useful in terms of acquiring new knowledge and skills and providing reassurance about current practice. It was also useful for developing awareness of one's own mental health.</p> <p><i>"The way I listen I think is a bit different, because of the training you suddenly think oh there's something, she's not just talking to me about how her husband broke her favourite plate it's something below, there's something else there" Adult (staff) MHFA training attendee.</i></p> <p><i>"I believe that maintaining mental wellbeing is as important as maintaining physical wellbeing for ability to work and ability to function really well. Because as a teacher, you have to be functioning at your best at all times when you're in front of a class, and there's no, there's no leeway for that. Even more so now, because you're expected to, you know, create all these outstanding lessons, engagement with young people is supposed to be, you know, A1" Senior leader</i></p>
Theme 2	<p>Providing a spectrum of support</p> <p>Peer supporters described a range of ways in which they supported colleagues, from providing a sounding board, to preventing a problem escalating by intervening early, to arranging professional help for colleagues in a lot of distress:</p> <p><i>"Often people just really do need somebody to listen to them and spend a little bit of time and care over what's going on for them. You don't necessarily need a resolution".</i></p> <p><i>"I suggested to her to see a GP, and it's a long-term sort of process of recovery but we had a long, long chat on the phone and she could not cope anymore, she said "I cannot be in school anymore".</i></p>
Theme 3	<p>Informal and immediately available support</p>

	<p>The peer support service tended to be used informally, as opposed to through planned appointments and that seemed to work well in a busy school environment where staff may not have the same breaks or much free time.</p> <p><i>“People do just say informally in the corridor have you got 5 mins can we have a chat and you sort of work out whether it’s dire and they need that chat now, or you sort of say well could you come in half an hour and I can give you some time”.</i></p>
Theme 4	<p>Raising awareness and encouraging discussion about mental health</p> <p>Senior leaders and peer supporters reported that the peer support system encouraged more open discussion about mental health and highlighted the fact that staff mental wellbeing mattered.</p> <p><i>“I think it sends a really big message out to staff in general, they’re seeing posters saying a message which is we care about you, there is a network there for you if you need it”</i> Senior leader</p>
Theme 5	<p>Positive and negative impacts on peer supporters</p> <p>Peer supporters reported both positive aspects of their role, e.g. 'making a difference' and negative aspects e.g. the impact on their time and feeling upset by something colleagues have shared with them. However it was noted that the peer supporters tended to be the type of person, that people would go to for support so becoming a peer supporter formalised this role to some extent.</p>
Theme 6	<p>Value of the scheme</p> <p>Staff who had been recipients of peer support from colleagues who had received the MHFA training, discussed the value of being able to talk to someone outside of their usual working relationships.</p> <p><i>“Yeah, it was them effectively giving me a big hug, and protecting me from it until I was ready to go back in the classroom, ”</i></p>
Theme 7	<p>Barriers to using the service.</p> <p>Various barriers were identified to using the service, including lack of awareness about the service, not wanting to discuss problems at work, or put pressure on peer supporters who had their own work pressures, concerns about confidentiality and preferring to go to other pre-existing support networks.</p>

	<p>The likelihood of using the service depended on the type of problem, the combination of people who were peer supporters and whether someone had access to other forms of support. Time for the service to become embedded also was identified as an important factor:</p> <p><i>“I think you know, it’s maybe human nature to be a little suspicious of something new to start with, and you know, the kind of reactions like “well I’m not gonna speak to anybody” might change when you’re in a situation that you do need to speak to somebody, so I think you know, it’s still in its very early stages and it’s almost like people have got to have used it, say it was really good, you should go”</i></p>
Theme 8	<p>Facilitators to using the service.</p> <p>There were various suggestions about how the service could be improved. These included ensuring the peer supporters were properly supported, regularly promoting the service to all staff, and having a member of the senior leadership team to ‘champion’ the service, to help ensure it remained sustainable.</p> <p><i>“I think someone on the senior leadership team needs to be involved in the project not as a staff supporter because I think our school is like others that would immediately create a barrier to any sort of free chat or anything, but to oversee it to make sure it happens”</i></p>

Study arms

Mental health first aid training (N = 472)

Mental health first aid training to enable school staff to provide peer support to other staff

Usual practice (N = 552)

Usual practice

Characteristics

Study-level characteristics

	Study (N =)
Age	
Gender	
Ethnicity	

Section	Question	Answer
Aims of the research	Was there a clear statement of the aims of the research?	Yes
Appropriateness of methodology	Is a qualitative methodology appropriate?	Yes
Research Design	Was the research design appropriate to address the aims of the research?	Yes
Recruitment Strategy	Was the recruitment strategy appropriate to the aims of the research?	Yes
Data collection	Was the data collected in a way that addressed the research issue?	Yes
Researcher and participant relationship	Has the relationship between researcher and participants been adequately considered?	Can't tell <i>(The relationship between participant and researcher is not mentioned in the paper.)</i>

Section	Question	Answer
Ethical Issues	Have ethical issues been taken into consideration?	Yes
Data analysis	Was the data analysis sufficiently rigorous?	Yes
Findings	Is there a clear statement of findings?	Yes
Research value	How valuable is the research?	The research has some value <i>(The research was conducted with teaching and non-teaching staff in mainstream secondary schools in 3 adjacent local authority areas. The findings may not be transferable to other types of school or to employees in other workplace settings.)</i>
Overall risk of bias and relevance	Overall risk of bias	Moderate
	Relevance	Relevant

Study arms

Intervention (N = 472)	
Brief name	Mental health first aid (MHFA) training and peer support [page 1]
Rationale/theory/Goal	The aim of MHFA is to equip individuals to help to people in mental health crises and/or in the early stages of mental health problems. The peer support system is an intervention for staff to access as a 'first port of call'. It was hypothesised that this service, alongside the delivery of youth MHFA training, would not only increase the capacity to provide support to individual staff and students in need, but would create a more open school-wide culture with regard to discussion and awareness of mental health issues. [page 2]
Materials used	Not reported

Procedures used	<p>Peer support service for staff</p> <ul style="list-style-type: none"> • Staff nominated colleagues for MHFA training from those who consented to do the training, ensuring a mix of teaching/support staff, gender and seniority. • The standard MHFA course covers key facts, recognition and understanding of the most common mental disorders - depression, anxiety and psychosis – and provides attendees with a strategy for providing initial help to anyone appearing distressed or at risk of developing a mental health problem. • Once the training had been completed, guidance was provided by the research team regarding the purpose of the peer support service, confidentiality, and gaining support for themselves, but peer support teams were encouraged to develop the detail of the service themselves according to what was most appropriate for their particular school, for example how it was advertised, and how staff accessed the help. • A confidential peer support service was set up for colleagues. <p>Youth MHFA training</p> <ul style="list-style-type: none"> • Youth MHFA training was also delivered to up to 20 staff in each school. • The school's senior leadership team had control over how this opportunity was advertised, and which staff attended. • The content of the course is similar to the standard course, but focuses more specifically on facts, signs and symptoms of distress and mental disorders among teenagers. • After receiving the training, staff returned to their usual jobs and applied the training as required in their usual interactions with students. <p>[page 3]</p>
Provider	Adult MHFA and youth MHFA courses provided by a registered independent trainer [page 3]
Method of delivery	Full day courses [page 3]
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Adult and youth MHFA courses were both delivered over two full days.

	[page 3]
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None
Control (N = 552)	
Brief name	Schools continued with usual practice [page 3]
Rationale/theory/Goal	Not applicable
Materials used	Not applicable
Procedures used	Not applicable
Provider	Not applicable
Method of delivery	Not applicable
Setting/location of intervention	Not applicable

Intensity/duration of the intervention	Not applicable
Tailoring/adaptation	Not applicable
Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	Not applicable

D.28 Le Blanc 2007

Bibliographic Reference Le Blanc, Pascale M; Hox, Joop J; Schaufeli, Wilmar B; Taris, Toon W; Peeters, Maria C W; Take care! The evaluation of a team-based burnout intervention program for oncology care providers.; The Journal of applied psychology; 2007; vol. 92 (no. 1); 213-27

Study details

Study design	Cluster randomised controlled trial
Trial registration number	Not reported
Aim	To determine whether a programme that involves peer-support group and participatory approach is effective in reducing burnout in oncology care providers.

Country/geographical location	The Netherlands
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: Not reported • Industry: Healthcare • Organisation size: Large • Contract type: not reported. • Seniority: mixed (physicians, nurses, and radiotherapy assistants) • Income: mixed (physicians, nurses, and radiotherapy assistants)
Inclusion criteria	<ul style="list-style-type: none"> • Wards had to operate as a "functional team", where employees work together on common tasks and goals under the supervision of one or more common supervisors.
Exclusion criteria	None reported
Method of randomisation	Not reported
Method of allocation concealment	Not reported
Unit of allocation	Cluster
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • The dropout pattern was analysed by assigning a variable indicating whether an individual was missing at T2, but not at T1 or T3. • A multivariate analysis of variance was performed to check whether this specific group differed from the remaining participants in outcome measures at T1 or T3. • Multivariate analysis of variance was also used to test the relationship between the outcome variables and missingness at T2.

	<ul style="list-style-type: none"> • Chi-square was used in a cross-table to test whether membership in the experimental or control was related to whether participants were missing at T2 or T3. • Multilevel regression analysis was performed to address the large proportion of dropouts. • Sample characteristics were reported along with the effect size (f). • Internal validity was assessed by comparing outcome measures between study arms at T1.
Attrition	There were 664 participants at T1 (experimental group: 260; control group: 404), at T2 the number of participants had dropped to 376 (56.6%) (experimental group: 231 (88.8%); control group: 145 (35.9%)), and at T3 it had dropped to 304 (45.8%) (experimental group: 208 (80.0%); control group: 96 (23.8%).
Assessments and timepoints	Job stress (measured by emotional exhaustion, depersonalisation, and emotional job demands) was measured at baseline, immediately after the training ended, and 6 months after the training ended.
Study limitations (author)	<ul style="list-style-type: none"> • There was a high attrition rate. • Outcome measures were subjective. • Restriction of the intervention to ward level rather than hospital-wide level may have resulted in fewer changes. • Interaction between control and experimental groups was possible. • Participation in the study was voluntary, which could have resulted in selection bias.
Study limitations (reviewer)	<ul style="list-style-type: none"> • There was no blinding. • The longest follow-up timepoint was at 6 months, and it is not possible to assess the longer term effects of the intervention.
Source of funding	Dutch Cancer Society/Koningin Wilhelmina Fonds Grant

Study arms

Participatory approach intervention (N = 9)

9 wards, (260 individuals) were randomised to the intervention group.

Control (N = 20)

20 wards (404 individuals) were randomised to the care as usual control group.

Characteristics

Study-level characteristics

	Study (N = 664)
Age	
Mean/SD	36.2 (8.4)
Gender <i>(Not reported)</i>	
Mean/SD	0.72 (0.45)
Ethnicity Not reported	

Outcomes

Study timepoints	Baseline
	0 (month) Outcomes were measured immediately after the training ended (6 months from the start of the study).
	6 (month) Outcomes were measured 6 months after the training ended (12 months from the start of the study).

Employee outcomes

	Participatory approach intervention			Control		
	Baseline	0 (month)	6 (month)	Baseline	0 (month)	6 (month)
	N = 260	N = 260	N = 260	N = 440	N = 440	N = 440
<p>Burnout (emotional exhaustion) <i>(Not reported)</i> Based on responses to 8 items</p> <p><i>Polarity: Lower values are better</i></p>						
Sample Size	n = 260 ; % = 100	n = 231 ; % = 88.8	n = 208 ; % = 80	n = 440 ; % = 100	n = 145 ; % = 33	n = 96 ; % = 21.8
Mean/SD	1.54 (0.89)	1.49 (0.91)	1.53 (0.92)	1.46 (0.8)	1.68 (1)	1.65 (1)
<p>Burnout (depersonalisation) <i>(Not reported)</i> Based on responses to 5 items</p> <p><i>Polarity: Lower values are better</i></p>						
Sample Size	n = 260 ; % = 100	n = 231 ; % = 88.8	n = 208 ; % = 80	n = 440 ; % = 100	n = 145 ; % = 33	n = 96 ; % = 21.8
Mean/SD	0.96 (0.7)	0.94 (0.82)	0.98 (0.65)	0.86 (0.58)	1 (0.65)	0.93 (0.62)
<p>Stress (emotional job demands) <i>(Not reported)</i> 12 items relating to problems in interacting with patients, 6 items relating to confrontation with death and dying, 4 items relating to identification with patients.</p> <p><i>Polarity: Lower values are better</i></p>						

	Participatory approach intervention			Control		
	Baseline	0 (month)	6 (month)	Baseline	0 (month)	6 (month)
	N = 260	N = 260	N = 260	N = 440	N = 440	N = 440
Sample Size	n = 260 ; % = 100	n = 231 ; % = 88.8	n = 208 ; % = 80	n = 440 ; % = 100	n = 145 ; % = 33	n = 96 ; % = 21.8
Mean/SD	2.15 (0.71)	1.95 (0.63)	1.95 (0.67)	2.04 (0.67)	0.64 (0.64)	2 (0.69)

Burnout (emotional exhaustion) - Participatory vs Control - 6-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (<i>Outcome measure was self-reported</i>)
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low

Section	Question	Answer
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Burnout(depersonalisation) - Participatory vs Control - 6-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (<i>Outcome measure was self-reported</i>)
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Stress (emotional job demands) - Participatory vs Control - 6-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Outcome measure was self-reported)</i>
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns <i>(Self-reported outcome)</i>

Study arms

Participatory approach intervention (N = 260)	
Brief name	Team-based burnout intervention program combining a staff support group with a participatory action research approach. [page 213]
Rationale/theory/Goal	A team-based burnout intervention program for oncology care providers was developed that included support group meetings, during which care providers were able to share their work-related feelings and to discuss work-related

	problems and ways of solving them. The researchers hypothesised that that care providers participating in the intervention program would experience lower levels of burnout. [page 215]
Materials used	None reported
Procedures used	<ul style="list-style-type: none"> • Team counsellors held extensive intake interviews with the management of all wards at which the Take Care! program was to be implemented. The goal of these meetings was to increase the motivation of ward management for implementation of the organisational change processes. • Next, a kick-off meeting was organized for the entire team, where team counsellors presented the protocol of the intervention programme and the researcher explained the design of the evaluation study. • The training programme was delivered, which included an introduction to the programme, and education on the emergence and preservation of unwanted collective behavior, communication and feedback, building a social support network, and balancing job-related investments and outcomes. • During the action part of the programme, participants formed problem-solving teams that collectively designed, implemented, evaluated, and reformulated plans of action to cope with the most important stressors in their work situation. • On the basis of participants' own experiences during the past months, potential problems in dealing with processes of change (transition) and ways to overcome them were discussed, and outcomes were developed. <p>[page 216]</p>
Provider	Counsellors- registered behavior therapists [page 216]
Method of delivery	<ul style="list-style-type: none"> • The programme was delivered in group sessions that took place at the end of the day. • In between the training sessions, the topics that were discussed during the latest session and the plans and agreements that were made were put as items on the agenda of the weekly work meetings of the respective experimental wards. <p>page [216]</p>
Setting/location of intervention	Meeting rooms outside of the participants' wards [page 216]
Intensity/duration of the intervention	Six monthly sessions of 3 hr each [page 216]

Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Much attention was paid to principles of operant conditioning of behavior as applied to team functioning. [page 216]
Actual treatment fidelity	Not reported
Other details	Catering arrangements were made during the sessions. [page 216]
Control (N = 404)	
Brief name	Business as usual [page 216]
Rationale/theory/Goal	Not applicable
Materials used	Not reported
Procedures used	<ul style="list-style-type: none"> Wards signed a written agreement that they would refrain from participating in specialized training programs similar to the Take Care! program during the entire study period. [page 217]
Provider	Not reported
Method of delivery	Not reported
Setting/location of intervention	Not reported

Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None

D.29 Leiter 2011

Bibliographic Reference

Leiter, Michael P; Laschinger, Heather K Spence; Day, Arla; Oore, Debra Gilin; The impact of civility interventions on employee social behavior, distress, and attitudes.; *The Journal of applied psychology*; 2011; vol. 96 (no. 6); 1258-1274

Leiter, MP, Day, A, Oore, DG et al. (2012) Getting better and staying better: assessing civility, incivility, distress, and job attitudes one year after a civility intervention. *Journal of occupational health psychology* 17(4): 425-434

Gilin Oore, D, Leblanc, D, Day, A et al. (2010) When respect deteriorates: incivility as a moderator of the stressor-strain relationship among hospital workers. *Journal of nursing management* 18(8): 878-888

Study details

Study design	Non-randomised controlled trial (NRCT)
---------------------	--

Trial registration number	Not reported
Aim	To determine whether a 6 month Civility, Respect and Engagement at Work (CREW) intervention is effective in employee social behaviour, distress, and attitudes.
Country/geographical location	Canada
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: not reported • Industry: healthcare • Size of organisation: large • Contract type: mixed (full time, part time, casual and temporary employment) • Seniority: mixed (registered nurses, registered psychiatric nurses, ward clerks, physicians and licensed practical nurses) • Income:
Inclusion criteria	<ul style="list-style-type: none"> • Units that expressed an active interest in the study.
Exclusion criteria	<ul style="list-style-type: none"> • Units that were already committed to a major workplace initiative during the 6 month intervention process.
Method of allocation concealment	Not reported
Unit of allocation	Cluster (unit)
Unit of analysis	Individual

Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • No power calculations were reported. • No ITT analysis was reported. • Three-level hierarchical linear modelling (time within employee within work unit) was conducted using the hierarchical linear modelling (HLM) program (Raudenbush, Bryk, Cheong, Congdon, & du Toit, 2004). The 2 x 2 interaction between time (Time 1 vs. Time 2) and intervention (CREW vs. contrast group) was tested by including a cross-level effect between Time at Level 1 and intervention group at Level 3. The time and intervention slopes (and their interaction effect) were treated as fixed effects, whereas the intercepts for time, person, and unit were random effects in the models. • To test empirically whether these units had a pattern of data consistent with the phenomenon of regression to the mean, all variables were retested with a significant univariate Time X Intervention interaction (civility, supervisor incivility, respect, cynicism, job satisfaction, organizational commitment, trust in management, and absences) using a three-group version of intervention (labelled as Intervention/Severity, in which 0 = contrast groups, 1 = intervention groups without urgent need, 2 = intervention groups with urgent need).
Attrition	<ul style="list-style-type: none"> • At Time 1, 1,173 health care workers completed a survey (n = 262 in the intervention units and n = 911 in the contrast units). • At Time 2, 907 health care workers completed the survey (n = 181 in intervention units; n = 726 in contrast units), for a response rate of 28.6%. 472 participants completed surveys both at Time 1 and Time 2.
Assessments and timepoints	<p>The following outcomes were measured at the following timepoints:</p> <ul style="list-style-type: none"> • Baseline • Following the 6 month intervention, and 1 year after the baseline outcomes were measured. <p>Primary outcomes were:</p> <ul style="list-style-type: none"> • Familiarity with CREW • Civility • Experienced incivility (supervisor and co-worker) • Instigated incivility • Respect • Trust in management • Burnout • Turnover intentions

	<ul style="list-style-type: none"> • Professional efficacy • Organisational commitment • Job satisfaction • Absenteeism
Study limitations (author)	<ul style="list-style-type: none"> • The Time 1 differences between intervention and contrast units, followed by the similarity in means at Time 2, could possibly represent not a treatment effect but simply regression to the mean. • Many of the contrast units in the study participated to varying extents in other quality-of-work life programs. Therefore, the analyses do not examine the effectiveness of CREW to a formally defined comparison group, but to units that were making other sincere attempts to address employees' challenges in workplace health and fulfilment. • Reliance on a single source of data through questionnaire responses.
Study limitations (reviewer)	<ul style="list-style-type: none"> • There was a low response from participants. • Units were not randomly choosing but expressed an active interest in participating in the programme, therefore, there may be issues with generalisability. • Many of the outcomes measures were self-reported. • There was no ITT analysis.
Source of funding	<ul style="list-style-type: none"> • Partnerships in Health Services Improvement of the Canadian Institutes for Health Research • the Nova Scotia Health Research Foundation • the Ontario Ministry of Health • the Social Sciences and Humanities Research Council of Canada

Study arms

Civility intervention (N = 262)

262 participants (8 units) took part in the intervention group.

Control (N = 911)

911 participants (33 units) took part in the control group.

Characteristics

Study-level characteristics

	Study (N = 1173)
Age	
Mean/SD	42.5 (10.1)
Gender	
Women	
Sample Size	n = 1009 ; % = 86
Men	
Sample Size	n = 139 ; % = 11.8
Ethnicity Not reported	

Outcomes

Study timepoints	Baseline 1 (year) Outcomes measured following the 6 month intervention, and 1 year after the baseline outcomes were measured.
-------------------------	--

Employee outcomes

	Baseline		1 (year)	
	Civility intervention	Control	Civility intervention	Control
	N = 262	N = 911	N = 262	N = 911
Workplace climate - civility Self-reported - The CREW Civility Scale <i>Polarity: Higher values are better</i>				
Sample Size	n = 262 ; % = 100	n = 911 ; % = 100	n = 181 ; % = 69.1	n = 726 ; % = 79.7
Mean/SD	3.58 (0.73)	3.72 (0.7)	3.82 (0.52)	3.76 (0.58)
Job stress Self-reported as burnout using the Emotional Exhaustion and Cynicism subscales of the Maslach Burnout Inventory-General Survey <i>Polarity: Lower values are better</i>				
Sample Size	n = 262 ; % = 100	n = 911 ; % = 100	n = 181 ; % = 69.1	n = 726 ; % = 79.7
Mean/SD	3.21 (1.57)	2.73 (1.42)	2.76 (1.49)	2.65 (1.42)
job satisfaction Self-reported- measured using 5 items. <i>Polarity: Higher values are better</i>				
Sample Size	n = 262 ; % = 100	n = 911 ; % = 100	n = 181 ; % = 69.1	n = 726 ; % = 79.7

	Baseline		1 (year)	
	Civility intervention	Control	Civility intervention	Control
	N = 262	N = 911	N = 262	N = 911
Mean/SD	5.06 (1.07)	5.32 (0.97)	5.62 (0.89)	5.47 (0.93)
Absenteeism measured through self-reports and some aggregate institutional data. <i>Polarity: Lower values are better</i>				
Sample Size	n = 262 ; % = 100	n = 911 ; % = 100	n = 181 ; % = 69.1	n = 726 ; % = 79.7
Mean/SD	0.88 (2.31)	0.86 (2.04)	0.54 (1.07)	0.83 (2)
Wellbeing - professional efficacy Self-reported - Professional Efficacy scale of the MBIGS <i>Polarity: Higher values are better</i>				
Sample Size	n = 262 ; % = 100	n = 911 ; % = 100	n = 181 ; % = 69.1	n = 726 ; % = 79.7
Mean/SD	4.57 (0.98)	4.74 (0.89)	4.71 (0.95)	4.73 (0.94)

Workplace climate - Civility intervention vs Control - 1-year follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low

Section	Question	Answer
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Differing attrition rates for intervention and control group)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Differing attrition rates for intervention and control group and self-reported outcome)</i>

Job stress - Civility intervention vs Control - 1-year follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low

Section	Question	Answer
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Differing attrition rates for intervention and control group)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Differing attrition rates for intervention and control group and self-reported outcome)</i>

Job satisfaction - Civility intervention vs Control - 1-year follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low

Section	Question	Answer
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Differing attrition rates for intervention and control group)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Differing attrition rates for intervention and control group and self-reported outcome)</i>

Absenteeism - Civility intervention vs Control - 1-year follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low

Section	Question	Answer
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Differing attrition rates for intervention and control group)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Differing attrition rates for intervention and control group and self-reported outcome)</i>

Wellbeing - Civility intervention vs Control - 1-year follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Differing attrition rates for intervention and control group)</i>

Section	Question	Answer
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Differing attrition rates for intervention and control group and self-reported outcome)</i>

Study arms

Civility intervention (N = 262)	
Brief name	CREW training [page 1263]
Rationale/theory/Goal	<p>The theoretical basis of the approach builds on the proposition that people benefit psychologically from belonging to social groups that confirm self-worth, security, and trust of others. Additionally, negative peer relationships are illegitimate demands that may increase burnout and prompt various withdrawal behaviors, including effort reduction, absences, and turnover. Because of the fundamental role that social relationships at work have for individuals, workplace incivility has practical, day-to-day consequences that can be quite extensive. The defining principles of the CREW approach are the following: (a) building civility through required direct conversations on the issue guided by accurate assessments of the groups' social environment; (b) driving the process through exercises that help participants explore new ways of interacting; (c) moving participants out of established patterns of social behavior through leadership from facilitators; (d) receiving explicit support for the process from management as essential to the program's success; and (e) encouraging employee ownership of the process in order for it to be successful. The key aspects of CREW are that employees facilitate and own the change themselves, and the intervention is responsive to the participants' unique situations. [pages 1259 and 1260]</p>
Materials used	<ul style="list-style-type: none"> Articles in organisational publications and public statements promoting civility [page 1263]

Procedures used	<ul style="list-style-type: none"> • Preparation period: concepts of civility and incivility were introduced to participants and management. CREW was introduced as an inclusive intervention to improve these work group qualities. To support this process, management explicitly encouraged civility as a core value of the organization. This support may be made explicit by (a) making public statements regarding the importance of civility and respect in the organization's values, (b) writing articles in organizational publications about the importance of civility and respect at work, or (c) committing to displaying civility in their own interactions with individuals and groups. A signed commitment from a senior official is an initial step in a CREW process. • An initial survey was conducted to identify baselines of civility and organizational attitudes/behaviors for each work group. The research team provided all facilitators with a profile of their unit's survey responses, describing levels of civility, incivility, and other relevant constructs. • An initial gathering of facilitators and hospital leaders for CREW training and community building among participants. • Weekly group meeting occurred for a period of 6 months. Meetings involved 10-15 employees working on the same hospital unit and were led by trained facilitators. Groups use structured exercises from the CREW Toolkit with the aim of improving interpersonal interactions at work. • Throughout the CREW implementation, the training was available through weekly phone calls with facilitators to discuss challenges and successes that arise during the week. • A midpoint gathering of facilitators and hospital leaders occurred at the 3-month point for refresher and advanced CREW training, and community building among participants. • A final gathering of facilitators and hospital leaders occurred at the 6-month point for sustainability training and community building among participants. <p>[pages 1263 and 1264]</p> <p>[page 1263]</p>
Provider	<ul style="list-style-type: none"> • Research personnel had received training on group facilitation and effective communication strategies from experienced CREW leaders within Veterans Health. • Unit facilitators were trained by research personnel in the CREW process. <p>[page 1264]</p>
Method of delivery	<ul style="list-style-type: none"> • Gatherings of facilitators and hospital leaders • Group meetings

	<ul style="list-style-type: none"> • Phone calls <p>[pages 1263 and 1264]</p>
Setting/location of intervention	Not reported
Intensity/duration of the intervention	<ul style="list-style-type: none"> • Weekly group meeting occurred for a period of 6 months. • Weekly phone calls <p>[pages 1263 and 1264]</p>
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	CREW Toolkit [1263]
Actual treatment fidelity	Not reported
Other details	None
Control (N = 911)	
Brief name	Did not receive CREW training [page 1261]
Rationale/theory/Goal	Not reported
Materials used	Not reported
Procedures used	Not reported

Provider	Not reported
Method of delivery	Not reported
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None

D.30 Linzer 2015

Bibliographic Reference Linzer, Mark; Poplau, Sara; Grossman, Ellie; Varkey, Anita; Yale, Steven; Williams, Eric; Hicks, Lanis; Brown, Roger L; Wallock, Jill; Kohnhorst, Diane; Barbouche, Michael; A Cluster Randomized Trial of Interventions to Improve Work Conditions and Clinician Burnout in Primary Care: Results from the Healthy Workplace (HWP) Study.; Journal of general internal medicine; 2015; vol. 30 (no. 8); 1105-11

Linzer, Mark, Sinsky, Christine A, Poplau, Sara et al. (2017) Joy in Medical Practice: Clinician Satisfaction in The Healthy Workplace Trial. Health affairs (Project Hope) 36(10): 1808-1814

Study details

Study design	Cluster randomised controlled trial
Trial registration number	Not reported
Aim	Assess if improvements in work conditions improve clinician stress and burnout
Country/geographical location	USA
Setting	<p>Workplace</p> <ul style="list-style-type: none"> • Sector: Public • Industry: Healthcare • Organisation size: Not reported. • Contract type: Not reported. • Seniority: range of general internists, family physicians, nurse practitioners and physician assistants • Income: Not reported
Inclusion criteria	Clinicians who had been with the practice for at least 1 year at a minimum of 0.5 full time equivalent weekly.
Exclusion criteria	Not reported
Method of randomisation	Permuted block randomisation scheme using 1:1 allocation to treatment/control providing a balance of clinics per site
Method of allocation concealment	Not reported

Unit of allocation	Cluster (Clinic)
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<p>Multilevel regressions</p> <p>Sample size calculations prior to initiating recruitment of clinicians determined that 34 clinics would provide sufficient power to address the study questions.</p> <p>No ITT reported</p>
Attrition	<p>135/166 clinicians completed the project (32/34 clinics).</p> <p>Intervention group: 67/83 (81%) completed the project.</p> <p>Control group: 72/83 (87%) completed the project</p>
Assessments and timepoints	<p>The following outcomes were assessed at the following timepoints:</p> <ul style="list-style-type: none"> • Baseline • 12 - 18 months <p>Primary outcomes were work conditions and clinician reactions including:</p> <ul style="list-style-type: none"> • Clinic structures, finances, policies, and procedures • Clinician stress, burnout, intent to leave, and job satisfaction
Study limitations (author)	<p>Absence of an overall group treatment effect with receipt of OWL (office and worklife) worklife and work condition data followed by an undifferentiated series of quality improvement projects.</p> <p>Uncertainty as to how well or reproducibly the interventions might have been instituted, and whether a longer duration of follow-up might have provided a better sense of the impact of these workplace changes</p>
Study limitations (reviewer)	<p>Interventions chosen were customised at the individual clinic level so not everyone given the exact same intervention and we don't have the results at individual intervention level.</p>

Source of funding	The project was supported by a grant from the Agency for Healthcare Research and Quality (AHRQ), Grant # 5R18-HS018160-03.
--------------------------	--

Study arms

intervention (N = 83)
control (N = 83)

Characteristics

Arm-level characteristics

	intervention (N = 83)	control (N = 83)
Age		
Mean/SD	48.3 (8.9)	46.4 (9.4)
Gender		
Male		
Sample Size	n = 39 ; % = 46.9	n = 41 ; % = 49.4
Female		
Sample Size	n = 44 ; % = 53.1	n = 42 ; % = 50.6
Ethnicity		
Non-white ethnicity		

	intervention (N = 83)	control (N = 83)
Sample Size	n = 10 ; % = 12	n = 17 ; % = 20.7
Physicians %		
Sample Size	n = 83 ; % = 83.1	n = 83 ; % = 90.3

Outcomes

Study timepoints	Baseline 12 (month) Paper states 12-18 months
-------------------------	--

Employee outcomes

	intervention		control	
	Baseline	12 (month)	Baseline	12 (month)
	N = 83	N = 83	N = 83	N = 83
job satisfaction (5-point scale) <i>Polarity: Higher values are better</i>				
High satisfaction Score of 4 or greater				
No of events	n = 32 ; % = 38.5	n = 26 ; % = 40	n = 43 ; % = 51.8	n = 32 ; % = 45.7
Sample Size	n = 83 ; % = 100	n = 65 ; % = 78.3	n = 83 ; % = 100	n = 70 ; % = 84.3

	intervention		control	
	Baseline	12 (month)	Baseline	12 (month)
	N = 83	N = 83	N = 83	N = 83
Job stress (5-point scale) <i>Polarity: Lower values are better</i>				
High stress Score of 4 or greater				
No of events	n = 23 ; % = 27.7	n = 20 ; % = 30.8	n = 25 ; % = 30.1	n = 17 ; % = 24.3
Sample Size	n = 83 ; % = 100	n = 65 ; % = 78.3	n = 83 ; % = 100	n = 70 ; % = 84.3
burnout (5-point scale) A score of 3 means showing symptoms, and a score of 5 means complete burnout. <i>Polarity: Lower values are better</i>				
Showing burnout Score of 3 or greater				
No of events	n = 34 ; % = 37	n = 22 ; % = 33.8	n = 25 ; % = 30.1	n = 23 ; % = 32.9
Sample Size	n = 82 ; % = 98.8	n = 65 ; % = 78.3	n = 83 ; % = 100	n = 70 ; % = 84.3

Job satisfaction - Intervention vs control - 12-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Outcome measure was self-reported)</i>
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns <i>(Self-reported outcome)</i>

Job stress - Intervention vs control - 12-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low

Section	Question	Answer
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (<i>Outcome measure was self-reported</i>)
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Burnout - Intervention vs control - 12-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low

Section	Question	Answer
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (<i>Outcome measure was self-reported</i>)
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Study arms

intervention (N = 83)	
Brief name	Healthy Workplace study (HWP) [P1106]
Rationale/theory/Goal	Study is based upon the conceptual model highlighted in and refined after the MEMO (Minimising error, Maximising outcome) project, with work conditions affecting clinician and patient outcomes [p1106]
Materials used	Office and worklife (OWL) 2 page measure of worklife and work condition was created using. 1) clinician perceptions of work conditions, 2) clinician outcomes (stress, burnout, and intent to leave the practice), and 3) patient quality of care data. [p1106] This formed the basis for the interventions (no materials reported in the interventions).
Procedures used	Measures were performed at baseline in both intervention and control clinics across 3 sites. Clinical and research staff met at each intervention site to discuss the data and a list of topics/interventions was generated and used to address adverse clinician work conditions.(based on the OWL document)

	<p>Interventions chosen were customised at the individual clinic level and comprised a broad list of ways to address work conditions.</p> <p>Clinical teams worked off a relatively small menu of proven interventions (drawn from the literature), intervention(s) chosen were then customized at the individual clinic level and comprised a broad list of ways to address work conditions [p1106]</p>
Provider	Clinical and Research staff [p1106]
Method of delivery	<p>Not reported.</p> <p>However, interventions were classed into the following categories:</p> <ol style="list-style-type: none"> 1.Communications 2.Workflow 3.Targetted quality improvement 4.Other
Setting/location of intervention	Workplace
Intensity/duration of the intervention	Not reported, although it is stated that many clinics performed more than 1 type of intervention [p1107]
Tailoring/adaptation	Each clinic customised the intervention to suit their own needs
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported

Actual treatment fidelity	not reported
Other details	<p>Site 1 recruited 10 clinics.</p> <p>Site 2 recruited 14 clinics.</p> <p>Site 3 recruited 10 clinics.</p> <p>Some interventions included:</p> <ol style="list-style-type: none"> 1) scheduling standing monthly provider meetings focused on either a) worklife issues and personal challenges, or b) difficult patient care management issues 2) off-loading nonessential tasks to nonphysician staff including hiring additional staff, having medical assistants (MAs) enter patient data into the EMR, altering workflow between MAs and appointment coordinators, and consistently pairing MAs and clinicians 3) removing bottlenecks to care in patient rooms regarding medication reconciliation, vaccinations, and data entry 4) reduced time pressure with plans for a future increase in primary care visit time from 15 to 20 minutes 5) instituting a new prescription line to free up RN staff 6) clerks instead of clinicians tracking forms and sending faxes 7) presenting OWL data as a platform to discuss issues within the department.
control (N = 83)	
Brief name	Not reported
Rationale/theory/Goal	Not reported
Materials used	Not reported

Procedures used	Not reported
Provider	Not reported
Method of delivery	Not reported
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported

D.31 Lucas 2012

Bibliographic Reference Lucas, Brian P; Trick, William E; Evans, Arthur T; Mba, Benjamin; Smith, Jennifer; Das, Krishna; Clarke, Peter; Varkey, Anita; Mathew, Suja; Weinstein, Robert A; Effects of 2- vs 4-week attending physician inpatient rotations on unplanned patient revisits, evaluations by trainees, and attending physician burnout: a randomized trial.; JAMA; 2012; vol. 308 (no. 21); 2199-207

Study arms

2-week rotations (N = 129)

Brief name	2-week ward rotations for physicians [page 2199]
Rationale/theory/Goal	Both trainees and educational leaders have decried short rotations as disruptive because they truncate student teacher relationships. Shorter rotations may nonetheless benefit the psychological health of attending physicians, whose responsibilities are oversubscribed. In particular, if shorter rotations can lessen attending physician burnout, they may improve physicians' relationships with patients and the quality of care that patients receive. [page 2199]
Materials used	Not reported
Procedures used	Physicians were randomised to 2-week ward rotations. [page 2200]
Provider	Not reported
Method of delivery	Not reported
Setting/location of intervention	Workplace- ward [page 2200]
Intensity/duration of the intervention	2 weeks [page 2200]
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported

Other details	None
Control- 4 week rotations (N = 74)	
Brief name	Active control- 4-week ward rotations for physicians [page 2199]
Rationale/theory/Goal	Although the structures of these ward teams vary by local educational heritage and hospital policy, a prevailing trait is that attending physicians are assigned to them for only 2 continuous weeks—a duration that is half of the previous standard. Both trainees and educational leaders have decried short rotations as disruptive because they truncate student teacher relationships. Shorter rotations may nonetheless benefit the psychological health of attending physicians, whose responsibilities are oversubscribed. In particular, if shorter rotations can lessen attending physician burnout, they may improve physicians' relationships with patients and the quality of care that patients receive. [page 2199]
Materials used	Not reported
Procedures used	Participants were randomised to 4-week rotations [page 2200]
Provider	Not reported
Method of delivery	Not reported
Setting/location of intervention	Workplace- ward
Intensity/duration of the intervention	4 weeks [page 2200]
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported

Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	none

Study details

Study design	Cluster randomised controlled trial
Trial registration number	NCT00930111
Study start date	Jul-2009
Study end date	Jun-2010
Aim	To compare the effects of 2- vs 4-week physician rotations on patient outcomes, trainee satisfaction and physician burnout.
Country/geographical location	US
Setting	<p>Workplace</p> <ul style="list-style-type: none"> • Public sector • Industry: healthcare • Large organisation • Contract type: not reported. • Seniority: attending physicians

	<ul style="list-style-type: none"> Income: professional- high income
Inclusion criteria	Physicians scheduled for at least 6 weeks of service
Exclusion criteria	Physicians scheduled for less than 6 weeks of service
Method of randomisation	Stratified block randomization
Method of allocation concealment	Not reported
Unit of allocation	Cluster
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> Outcome variables were transformed to meet the assumptions of the statistical models and to improve interpretation of the estimates. For assessments of attending physician burnout, the ordinal score categories and severity assessments were transformed so that the direction of favourability was consistent across measurements. Mixed-effects regression was used to analyse the data. Fixed effects were used to control for ward team and crossover period, thereby adjusting for potential differences in outcomes due to rotation characteristics other than duration. Random effects were used to both incorporate repeated measurements (due to the crossover design) and account for correlations among members of groupings.
Attrition	Among 80 attending physicians, 62 individuals were eligible for participation (78%). 203 rotations were staffed, and burnout outcomes were reported for 202 rotations (99.5%)
Study limitations (author)	<ul style="list-style-type: none"> Study was conducted in a single centre, which reduces generalisability. Although there was a washout period, there could have still been carryover for attending physicians.

	<ul style="list-style-type: none"> Attending physicians' burnout assessments were not validated with a concurrent, objective measures. There is concern that because rotation length was not blinded, it would be possible for participants to alter their responses in favour of their preferred rotation length.
Source of funding	Foglia Family Foundation

Study arms

2-week rotations (N = 129)

Crossover trial in which 62 physicians were randomized to a total of 129 rotations of 2 weeks in length.

Control- 4-week rotations (N = 74)

Crossover trial in which 62 physicians were randomized to a total of 74 rotations of 4 weeks in length.

Characteristics

Study-level characteristics

	Study (N = 62)
Age median and range	
Custom value	38 (29-55)
Gender	
Women	
Sample Size	n = 30 ; % = 48

	Study (N = 62)
Ethnicity	
International medical graduates	
Sample Size	n = 33 ; % = 55

Outcomes

Study timepoints	0 (day) Outcomes measured at the end of each rotation
-------------------------	---

Employee outcomes

	2-week rotations	Control- 4-week rotations
	0 (day)	0 (day)
	N = 129	N = 74
Job stress <i>(Not reported)</i> Self-reported as High emotional exhaustion using Maslach Burnout Inventory Human Services Survey and 1 item from the National Job Burnout Survey <i>Polarity: Lower values are better</i>		
No of events	n = 24 ; % = 18.8	n = 27 ; % = 36.5
Sample Size	n = 128 ; % = 99.2	n = 74 ; % = 100

Job stress - 2-week rotations vs Control- 4-week rotations - Endpoint

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	1. 1. Was the allocation sequence random?	Yes
	1. 2. Was the allocation sequence concealed until participants were recruited and assigned to interventions?	Probably yes
	1.3 Were there baseline imbalances that suggest a problem with the randomisation process?	Probably no
	1.4 Is a roughly equal proportion of participants allocated to each of the two groups?	Probably no
	1.5 If N/PN/NI to 1.4: Are period effects included in the analysis?	Probably no
	Risk of bias judgement for the randomisation process	Some concerns <i>(Unequal allocation to interventions)</i>
Domain 2: Risk of bias due to deviations from intended interventions (effect of assignment to intervention)	2.1. Were participants aware of their assigned intervention during each period of the trial?	Yes
	2.2. Were carers and trial personnel aware of participants' assigned intervention during each period of the trial?	Probably yes
	2.3. If Y/PY/NI to 2.1 or 2.2: Were there deviations from the intended interventions beyond what would be expected in usual practice?	Probably no
	2.4. If Y/PY to 2.3: Were these deviations from intended interventions unbalanced between the two interventions and likely to have affected the outcome?	Probably no

Section	Question	Answer
	2.5 Was there sufficient time for any carry-over effects to have disappeared before outcome assessment in the second period?	Probably yes
	Risk of bias judgement for deviations from intended interventions (effect of assignment to intervention)	Low
Domain 2: Risk of bias due to deviations from the intended interventions (effect of adhering to intervention)	2.1. Were participants aware of their allocated intervention during each period of the trial?	Yes
	2.2. Were carers and trial personnel aware of participants' allocated intervention during each period of the trial?	Probably yes
	2.3. If Y/PY/NI to 2.1 or 2.2: Were important co-interventions balanced across the two interventions?	No information
	2.4. Was the intervention implemented successfully?	Probably yes
	2.5. Did study participants adhere to the assigned intervention regimen?	Probably Yes
	2.6. If N/PN/NI to 2.3, 2.4 or 2.5: Was an appropriate analysis used to estimate the effect of starting and adhering to the intervention?	Not applicable
	2.7 Was there sufficient time for any carry-over effects to have disappeared before outcome assessment in the second period?	Probably yes
	Risk of bias judgement for deviations from intended interventions (effect of adhering to intervention)	Low
Domain 3. Bias due to missing outcome data	3.1 Were outcome data available for all, or nearly all, participants randomised?	Yes

Section	Question	Answer
	3.2 If N/PN/NI to 3.1: Are the proportions of missing outcome data and reasons for missing outcome data similar across interventions?	Not applicable
	3.3. If N/PN/NI to 3.1: Is there evidence that results were robust to the presence of missing outcome data?	Not applicable
	Risk of bias judgement for missing outcome data	Low
Domain 4. Bias in measurement of the outcome	4.1 Were outcome assessors aware of the intervention received by study participants?	Yes
	4.2 If Y/PY/NI to 4.1: Was the assessment of the outcome likely to be influenced by knowledge of intervention received?	Probably yes
	Risk of bias judgement for measurement of the outcome	Some concerns (<i>Outcome measure was self-reported</i>)
Domain 5. Bias in selection of the reported result	5.1. Are the reported outcome data likely to have been selected, on the basis of the results, from multiple outcome measurements (e.g. scales, definitions, time points) within the outcome domain?	No/Probably no
	5.2. Are the reported outcome data likely to have been selected, on the basis of the results, from multiple analyses of the data?	No/Probably no
	5.3. Are the reported outcome data likely to have been selected, on the basis of the results, from the outcome of a statistical test for carry-over?	Probably no
	Risk of bias judgement for selection of the reported result	Low

Section	Question	Answer
Overall bias	Risk of bias judgement	High <i>(Unequal allocation to interventions and self-reported outcomes)</i>

D.32 Ludwigs, 2020

Bibliographic Reference Ludwigs, Kai Haese, Philipp Sivy, Kirill Weber, Soeren Schroemgens, Rolf; Trivago Flowlab - a Case Study on how to Improve Employees' Well-Being in a Corporate Environment; APPLIED RESEARCH IN QUALITY OF LIFE; 2020; vol. 15 (no. 5); 1353-1374

Study details

Trial registration number	Not reported
Study start date	Oct-2018
Study end date	Dec-2018
Aim	Flowlab aim to improving participants' sleep quality, mindfulness and ability to focus through the introduction of a series of synergistic habits, which are expected to lead to increased chances of experiencing flow states and ultimately higher well-being. Flowlab is a six-week program delivered through a combination of workshops, digital content and daily 'nudges' which facilitate habit formation.
Country/geographical location	Germany
Setting	Online travel company (trivago)
Inclusion criteria	Not specified - all participants were Trivago employees
Exclusion criteria	Not reported

Method of randomisation	Study outlined as a randomized control trial. An external research institute offered participants to pick a participation card with a random participation code out of a box which selected the participants either to the control group or the experimental group
Method of allocation concealment	Not reported
Unit of allocation	Individual
Unit of analysis	Individual
Statistical method(s) used to analyse the data	Repeated-measures MANOVAs; quantitative and qualitative survey feedback
Attrition	202/153 (80%) of people randomised provided pre-post data and were included in the analysis.
Assessments and timepoints	4 data collection points (dates or time periods not specified). Data was collected via Flow Short Scale (FKS; Engeser and Rheinberg 2008), Mindful Attention Awareness Scale (MAAS; Brown and Ryan 2003), Pittsburgh Sleep Quality Index (PSQI; Buysse et al. 1989), Subjective Well-Being at Work, Happiness (ESS 2013), Life Satisfaction (ESS 2013), Meaning in Life (From: Diener et al. 2010), Productivity How productive do you feel on a typical workday?, Work Engagement (From: Schaufeli et al. 2006), Work Atmosphere (From: Koys and DeCotiis 1991), Work Commitment (From: Mowday et al. 1979), Distance From Work (From: Sonnentag and Fritz 2007), Corporate Appreciation, Inter-department cooperation. Feedback collected via feedback cards and Survey App.
Study limitations (author)	The control group demonstrated improvements for some outcomes indicated the need to better control for other variables which may include colleagues randomized to the intervention arm and communication between the two groups; Representability of the sample is limited as not all employees could sign up by cut offs which may be a source of sampling bias; High attrition rates for certain outcomes (feedback workshops and the cortisol tests). Participants were not blinded to study arms and were aware of procedures for both intervention and trail arm. Rewards differed between control and intervention arms which may impact responses and engagement; High dropout rate
Study limitations (reviewer)	No demographic information: self-report measures used; procedures for allocation and blinding concealment unclear; No assessment of power or sample size calculation;
Source of funding	Not reported

Study arms

Flowlab (N = 130)

No intervention (N = 123)

Characteristics

Study-level characteristics

Characteristic	Study (N = 153)
Age	NR
Nominal	
Gender	NR
Nominal	
Ethnicity	NR
Nominal	

Outcomes

Study timepoints

- Baseline
- 0 week (Endpoint)

Employee outcomes

Outcome	Flowlab vs No intervention, 0 week vs Baseline, N1 = 96, N2 = 106
Mental wellbeing (1-7)	Eta ² = 0.066
Custom value	

Outcome	Flowlab vs No intervention, 0 week vs Baseline, N1 = 96, N2 = 106
Mental health symptoms Using Pittsburgh Sleep Quality Index (PSQI)	Eta ² = 0.074
Custom value	
Job satisfaction Using European Social Survey - Life satisfaction	Eta ² = 0.039
Custom value	
Work engagement	Eta ² = 0.012
Custom value	

Mental wellbeing - Polarity - Higher values are better.

Mental health symptoms - Polarity - Lower values are better.

job satisfaction - Polarity - Higher values are better.

Work engagement - Polarity - Higher values are better.

Employer outcomes

Outcome	Flowlab vs No intervention, 0 week vs Baseline, N1 = 96, N2 = 106
productivity	Eta ² = 0.006
Custom value	

Critical appraisal - Cochrane Risk of Bias tool (RoB 2.0) Normal RCT

Mental wellbeing - Flowlab vs No intervention (Endpoint)

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low
Domain 2b: Risk of bias due to deviations from the intended interventions (effect of adhering to intervention)	Risk of bias judgement for deviations from the intended interventions (effect of adhering to intervention)	Low
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns (<i>Self-reported outcome</i>)
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Mental health symptoms - Flowlab vs No intervention (Endpoint)

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low
Domain 2b: Risk of bias due to deviations from the intended interventions (effect of adhering to intervention)	Risk of bias judgement for deviations from the intended interventions (effect of adhering to intervention)	Low

Section	Question	Answer
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns (<i>Self-reported outcome</i>)
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Job satisfaction - Flowlab vs No intervention (Endpoint)

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low
Domain 2b: Risk of bias due to deviations from the intended interventions (effect of adhering to intervention)	Risk of bias judgement for deviations from the intended interventions (effect of adhering to intervention)	Low
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns (<i>Self-reported outcome</i>)
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low

Section	Question	Answer
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Work engagement - Flowlab vs No intervention (Endpoint)

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low
Domain 2b: Risk of bias due to deviations from the intended interventions (effect of adhering to intervention)	Risk of bias judgement for deviations from the intended interventions (effect of adhering to intervention)	Low
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns (<i>Self-reported outcome</i>)
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Productivity - Flowlab vs No intervention (Endpoint)

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low
Domain 2b: Risk of bias due to deviations from the intended interventions (effect of adhering to intervention)	Risk of bias judgement for deviations from the intended interventions (effect of adhering to intervention)	Low
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns (<i>Self-reported outcome</i>)
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Study arms

Flowlab (N = 130)

Brief name	Wellbeing program
Rationale/theory/Goal	Flowlab aim to improving participants' sleep quality, mindfulness and ability to focus through the introduction of a series of synergistic habits, which are expected to lead to increased chances of experiencing flow states and ultimately higher well-being. Flowlab is a six-week program delivered through a combination of workshops, digital content and daily 'nudges' which facilitate habit formation.
Materials used	Slides for the sampling workshop explaining the program and the evaluation study; Participation cards with randomized participation codes selecting participants to either the control or the experimental group; An app to survey participants anonymously once before, twice during and once after the program; The questionnaires; Sets to collect

	participants hair samples to measure participants stress indicated by their hair cortisol levels; Rewards; The trivago flowlab program; Feedback workshops.
Procedures used	Structure of the program and the method of the evaluation study was explained by an external research institute in 30-min workshops with each up to ten employees in each workshop; The Trivago flowlab program consisted of three different modules aiming to train six habits. The first module, 'sleep', one-hour workshop, ran by a trivago employee (Habits: block blue light 60 min before going to bed; go to bed every day at around the same time +/- 20mins); second module, 'mindfulness' one-hour workshop (Habits: meditate one time a day; try to have one mindful moment a day being present in the moment and describing the surrounding in detail); third module 'focus', one-hour workshop (Habits: reduce notifications for example from Slack or Outlook; plan one 'deep work session' per day focusing on a specific topic for at least 30 min).
Provider	Trivago employee who had become an expert on a particular topic module
Method of delivery	3 x 1 hour group workshops with additional support via recommended app and facilitated peer support
Setting/location of intervention	Workplace
Intensity/duration of the intervention	3 x 1 hour group workshops with additional support via recommended app and facilitated peer support
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

Six-week program delivered through a combination of workshops, digital content and daily 'nudges' which facilitate habit formation. Flowlab aim to improving participants' sleep quality, mindfulness and ability to focus through the introduction of a series of synergistic habits, which are expected to lead to increased chances of experiencing flow states and ultimately higher well-being.

No intervention (N = 123)

Brief name	Control
Rationale/theory/Goal	Control condition to allow examination of the effectiveness of Flowlab in improving participants' sleep quality, mindfulness and ability to focus.
Materials used	A survey app was built for the study; 50 Euro Amazon voucher code in the app for answering one survey before the start of the program, two surveys during the program and one survey after the end of the program.
Procedures used	Not specified for control; 50 Euro Amazon voucher code in the app for answering one survey before the start of the program, two surveys during the program and one survey after the end of the program.
Provider	Trivago employee who had become an expert on a particular topic module - no intervention was delivered for control
Method of delivery	No intervention delivered for control
Setting/location of intervention	Workplace
Intensity/duration of the intervention	Not applicable
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

D.33 Maes 1998

Bibliographic Reference

Maes, S; Verhoeven, C; Kittel, F; Scholten, H; Effects of a Dutch work-site wellness-health program: the Brabantia Project.; American journal of public health; 1998; vol. 88 (no. 7); 1037-1041

Study details

Study design	Cluster randomised controlled trial
Trial registration number	Not reported
Study start date	1990
Study end date	1993
Aim	To determine whether combined interventions (lifestyle and organisational) lead to a reduction in stress , improved health behaviour, improved quality of work and a reduction in absenteeism.
Country/geographical location	The Netherlands
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: Private • Industry: Manufacturing • Organisation size: Large • Contract type: not reported. • Seniority: mixed • Income: not reported
Inclusion criteria	Not reported
Exclusion criteria	Not reported
Method of randomisation	Not reported
Method of allocation concealment	Not reported

Unit of allocation	Cluster (worksite)
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • Power calculation not reported. • Completer-only analysis • Chi-square analyses and t tests were used to assess differences at pre-test between the experimental and control groups. • As a means of assessing the effects of the interventions, repeated measures analyses of covariance (ANCOVAs) were carried out; in these analyses, pre-test scores, educational level, gender (for all variables), and age (for health behaviors and health risks) were covariates.
Attrition	The total eligible population was 552, usable data was only available for 264 participants.
Assessments and timepoints	<p>The following assessments were made at these timepoints:</p> <ul style="list-style-type: none"> • Pre-test • 1 year follow up. • 2 year follow up. • 3 year follow up. <p>Primary outcome not specified. Outcomes included were:</p> <ul style="list-style-type: none"> • Work stress Questionnaire • Absenteeism • Clinical data
Study limitations (author)	None reported
Study limitations (reviewer)	<ul style="list-style-type: none"> • High dropout rate • Lack of detail on randomisation and concealment

	<ul style="list-style-type: none"> Second control group was not randomly assigned
Source of funding	Dutch government

Study arms

Participatory + lifestyle (N = 134)
No intervention (N = 130)

Characteristics

Arm-level characteristics

	Participatory + lifestyle (N = 134)	No intervention (N = 130)
Age		
Mean/SD	38.6 (10.48)	40.9 (10.44)
Gender N calculated by reviewer		
Female		
Sample Size	n = 35 ; % = 26.1	n = 16 ; % = 12.2
Ethnicity Not reported		
Socio economic status Reported as education level - N calculated by reviewer		

	Participatory + lifestyle (N = 134)	No intervention (N = 130)
Elementary education only		
Sample Size	n = 82 ; % = 61.2	n = 64 ; % = 49.2

Outcomes

Study timepoints	Baseline 3 (year) 3 years after intervention started
-------------------------	---

Employee outcomes

	Baseline		3 (year)	
	Participatory + lifestyle	No intervention	Participatory + lifestyle	No intervention
	N = 134	N = 130	N = 134	N = 130
Job stress Work stress Questionnaire (self-report) <i>Polarity: Not set</i>				
Sample Size	n = 113 ; % = 84.3	n = 113 ; % = 86.9	n = 113 ; % = 84.3	n = 113 ; % = 86.9
Mean/SD	0.1 (0.099)	0.1 (0.094)	0.09 (0.11)	0.1 (0.099)

Job stress - Participatory + lifestyle vs No intervention- 3-year follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	High <i>(The study population)</i>

Section	Question	Answer
		<i>was not fully randomised</i>
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Outcome measure was self-reported)</i>
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns <i>(Self-reported outcome)</i>

Study arms

Participatory and lifestyle (N = 134)	
Brief name	Work wellness programme including physical, lifestyle and social/leadership skills training, as well as a participatory approach to support wellness at work including work organisation and environment. [page 1038 and 1039]
Rationale/theory/Goal	In the Brabantia project, it was assumed that an improved working environment will enhance wellness and health. The demand-control-social support model was used as a corner-stone for the formulation of these conditions. As a means of operationalizing the text of the law, operational wellness conditions were defined: completeness of

	<p>the function, challenge, involvement in organizational tasks, autonomy, social contacts, cycle length, and information. Inspired by the Dutch working conditions law, the project is concerned with the following question: Do combined interventions, directed at both lifestyle and the content and organization of work, lead to improved health behavior, a reduction in health risks, a reduction in general stress reactions, improved quality of work, and a reduction in absenteeism? [page 1038]</p>
Materials used	<p>Materials used to support interventions at the individual level: on-site exercise facilities; advertising of the program by means of an information corner in the cafeteria, along with posters, videos, internal radio messages, and newsletter articles; and providing of healthy food (and information about nutrition) in the cafeteria. In addition, incentives to promote participation in the program were used (e.g., T-shirts, sweatshirts, sport bags, and the chance to win a weekend stay at a health and leisure resort). [Page 1039]</p>
Procedures used	<p>Individual level interventions:</p> <ul style="list-style-type: none"> • Employees had the opportunity to participate in lunchtime sessions, which were comprised of physical exercise and health education. • 40 hours of training was delivered on social and leadership skills. <p>Organisational level interventions:</p> <ul style="list-style-type: none"> • Measures were introduced to support the individual-level interventions. • Screening for wellness risks at work by means of the structured Wellness at Work interviews with each employee. The resulting information was used to construct wellness risk profiles for each function category and each of the 11 production units. These profiles were examined by a wellness committee. On the basis of this information, the committee developed proposals for modifying specific functions and/or aspects of the work organization and environment. After extensive consultation with the participating workers, the wellness committee guided the implementation and evaluation of the proposed changes. <p>[page 1038 and 1039].</p>
Provider	<ul style="list-style-type: none"> • lifestyle committee- a group of workers elected by employees. • wellness committee- management team and members of the project team <p>[page 1039]</p>

Method of delivery	<ul style="list-style-type: none"> • Individual level interventions (physical exercise and health education)- lunchtime sessions • Individual level interventions (training in social skills and leadership- mode of delivery not reported) <p>[pages 1038 and 1039]</p>
Setting/location of intervention	<ul style="list-style-type: none"> • Individual level interventions were held on the work site. • Individual level interventions (training in social skills and leadership- setting not reported) <p>[pages 1038 and 1039]</p>
Intensity/duration of the intervention	<ul style="list-style-type: none"> • Individual level intervention- half hour sessions three times per week. • Individual level interventions (training in social skills and leadership- 40 hours of training) • Organisational-level interventions were implements over the second and third years of the programme. <p>[pages 1038 and 1039]</p>
Tailoring/adaptation	<p>The health education sessions were discontinued after the first year of intervention because of low participation (10-20%). In the second year, the initiative for interventions directed at lifestyles was transferred to a special lifestyle committee. This resulted in fewer but more comprehensive activities, such as a health fair in the second year and a health exhibition in the third year, with high levels of participation (60-70%).</p> <p>[Page 1039]</p>
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Individual lunchtime sessions- half of the session was considered paid work time, while the other half was considered employees' free time. [page 1038]

No intervention (N = 130)	
Brief name	Received no interventions [page 1038]
Rationale/theory/Goal	Not applicable
Materials used	Not applicable
Procedures used	Not applicable
Provider	Not applicable
Method of delivery	Not applicable
Setting/location of intervention	Not applicable
Intensity/duration of the intervention	Not applicable
Tailoring/adaptation	Not applicable
Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	None

D.34 Mainsbridge, 2020

Bibliographic Reference Mainsbridge, Casey Peter; Cooley, Dean; Dawkins, Sarah; de Salas, Kristy; Tong, Jiajin; Schmidt, Matthew Wade; Pedersen, Scott J; Taking a Stand for Office-Based Workers' Mental Health: The Return of the Microbreak.; *Frontiers in public health*; 2020; vol. 8; 215

Study details

Trial registration number	Not reported
Aim	The objective of this study was to measure the effect of movement microbreaks during formal work time on mood states.
Country/geographical location	Australia
Setting	Tasmanian Department of Police and Emergency Management
Inclusion criteria	Full-time employee with primarily desk-based job responsibilities being available to complete the study requirements; used a personal computer with internet access to perform work; classified as a non-exerciser (<30min of exercise per week for a period of 3 months), were prepared to engage in behavior change; were deemed medically healthy via a PAR-Questionnaire (44) to perform the self-selected, movement microbreaks suggested by the software; and available for a 6-months study including baseline, post-test (after 13 weeks) and washout (after 26 weeks) data collection points.
Exclusion criteria	Not reported
Method of randomisation	Randomization software was used to select the experimental groups.
Method of allocation concealment	Not reported
Unit of allocation	Individual
Unit of analysis	Individual
Statistical method(s) used to analyse the data	One-way multivariate analysis of variance (MANOVA) was undertaken after controlling for baseline scores, age, and gender. Significant multivariate findings were followed up with univariate ANOVA procedures including simple main effects and independent sample t-tests for post hoc analysis.

Attrition	43/43 (100%) randomised participants provided pre and post data at baseline, at 13-weeks and at 26-weeks
Assessments and timepoints	Assessments were undertaken at baseline, 13-week and at 26-week; Police Stress Questionnaire; Two subscales of Profile of Mood States (POMS) Inventory (Vigour and Fatigue) were used.
Study limitations (author)	Use of a self-report; The lack of consideration of the influence of uncontrolled variables on outcomes under investigation for example when collecting data the time of day can impact mood thus confounding any intervention effect.
Study limitations (reviewer)	No accompanying objective measures; Absence of allocation and blinding protocol; Sample achieved (n=43) was below that calculated for the detection of a medium effect (n=76). Generalisability of findings may be limited due to small sample, sample make up (>70% female) and sector.
Source of funding	Tasmanian Government Healthy at Work grant

Study arms

Microbreak (N = 17)

Wait-list (N = 26)

Characteristics

Study-level characteristics

Characteristic	Study (N = 43)
Ethnicity	NR
Nominal	

Arm-level characteristics

Characteristic	Microbreak (N = 17)	Wait-list (N = 26)
Age	40.18 (12.94)	43.77 (9.44)

Characteristic	Microbreak (N = 17)	Wait-list (N = 26)
Mean (SD)		
Gender (% Female)	82	70
Nominal		

Outcomes

Study timepoints

- 13 week (After the intervention)

Employee outcomes

Outcome	Microbreak, 13 week, N = 17	Wait-list, 13 week, N = 26
Mental wellbeing Using Profile of Mood States	3.38 (0.7)	2.89 (0.91)
Mean (SD)		
Job stress Using Police Stress Questionnaire - Organisational stress	2.12 (1.06)	3.03 (1.23)
Mean (SD)		

Mental wellbeing - Polarity - Higher values are better.

Job stress - Polarity - Lower values are better.

Critical appraisal - Cochrane Risk of Bias tool (RoB 2.0) Normal RCT

Mental wellbeing - Microbreak vs Wait-list (13 weeks follow-up)

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low
Domain 2b: Risk of bias due to deviations from the intended interventions (effect of adhering to intervention)	Risk of bias judgement for deviations from the intended interventions (effect of adhering to intervention)	Low
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns (<i>self-reported outcome</i>)
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Job stress - Microbreak vs Wait-list (13 week follow-up)

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low
Domain 2b: Risk of bias due to deviations from the intended interventions (effect of adhering to intervention)	Risk of bias judgement for deviations from the intended interventions (effect of adhering to intervention)	Low

Section	Question	Answer
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns (<i>self-reported outcome</i>)
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Study arms

Microbreak (N = 17)

Brief name	Microbreak
Rationale/theory/Goal	The objective of this study was to measure the effect of movement microbreaks during formal work time on mood states.
Materials used	Prompting sequence (a small window that appeared in the lower right hand of the computer screen indicating that 60min of continual computer work had elapsed, and the microbreak screen was going to initiate); 65 different non-exercise physical activity (NEPA) choices with digital video coaching to facilitate a movement microbreak of the participants choice (e.g., chair squats); self-report questionnaires
Procedures used	The intervention involved a prompting sequence. The prompt was a small window that appeared in the lower right hand of the computer screen indicating that 60min of continual computer work had elapsed, and the microbreak screen was going to initiate. At this point, participants could immediately engage the microbreak selection sequence or postpone the sequence once for 15min. At the end of this 15-min interval, the microbreak selection sequence screen covers the employee's entire computer screen preventing continuance of computer work. This screen displays until participants complete a movement microbreak of their choice and record their progress.
Provider	The research team responsible for the study
Method of delivery	Face-to-face pre-intervention phase; Intervention was computer based;

Setting/location of intervention	Workplace - Tasmanian Department of Police and Emergency Management
Intensity/duration of the intervention	The intervention involved a prompting sequence that appeared in the lower right hand of the computer screen indicating that 60 min of continual computer work had elapsed, and the microbreak screen was going to initiate. At this point, participants could immediately engage the microbreak selection sequence or postpone the sequence once for 15min. At the end of this 15-min interval, the microbreak selection sequence screen covers the employee's entire computer screen preventing continuance of computer work. This screen displays until participants complete a movement microbreak of their choice and record their progress.
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

A prompting sequence to encourage participants to rethink their decision to remain seated after 60min of computer work.

Wait-list (N = 26)

Brief name	Waiting list
Rationale/theory/Goal	Waiting list control to facilitate assessment of the effect of movement microbreaks during formal work time on mood states.
Materials used	Not reported
Procedures used	Those participants randomly assigned to the control group were informed that they would receive the intervention once the six-month study period was over
Provider	The research team responsible for the study
Method of delivery	Those participants randomly assigned to the control group were informed that they would receive the intervention once the six-month study period was over

Setting/location of intervention	Workplace - Tasmanian Department of Police and Emergency Management
Intensity/duration of the intervention	Those participants randomly assigned to the control group were informed that they would receive the intervention once the six-month study period was over
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

D.35 Mattila 2006

Bibliographic Reference Mattila, Pauliina; Elo, Anna-Liisa; Kuosma, Eeva; Kyla-Setala, Eeva; Effect of a participative work conference on psychosocial work environment and well-being; European Journal of Work and Organizational Psychology; 2006; vol. 15 (no. 4); 459-476

Study details

Study design	Non-randomised controlled trial (NRCT)
Trial registration number	Not reported
Aim	To determine whether a participative work conference is effective in improving psychosocial work environment and wellbeing.

Country/geographical location	Finland
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: public • Industry: municipal public works (manual and office work) • Size of organisation: large • Contract type: not reported. • Seniority: not reported • Income: not reported
Inclusion criteria	<ul style="list-style-type: none"> • Two-day participation was set as the criterion for inclusion in the intervention group.
Exclusion criteria	Not reported
Method of allocation concealment	Not reported
Unit of allocation	Cluster (work department)
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • Two control groups were reported. Participants in control group 1 were based in the same department as the intervention, whereas participants in control group 2 were based in a different department with roughly the same function. Data were extracted from control group 2 to avoid contamination. • No power calculations were reported. • No ITT analysis was reported. • A coding system was developed collaboratively to match the pre- and post- measurements on the individual level. • In order to find out whether there had been any change in the intervention group compared with the control groups, a 3 (group) X 2 (time) analysis of variance (ANOVA) for repeated measures was conducted. • Each dependent variable (job control, work climate, clarity of work goals, support from the supervisor, flow of information, emotional exhaustion, and stress symptoms) was modelled separately.

	<ul style="list-style-type: none"> • If the change over time was different for the three groups (Group X Time interaction statistically significant: $p \leq .05$) a further analysis (ANCOVA) was carried out by controlling for age, gender, basic education, type of work, and the number of days participated in other interventions. • If the Time X Group interaction was significant ($p \leq .05$) after the controlling procedure, the groups were compared pairwise (contrast tests).
Attrition	The pre- and post- measurements were carried out in the context of two organization-wide questionnaires (response rates 90% and 87%, respectively) with a 2-year interval.
Assessments and timepoints	<p>The following outcomes were measured at the following timepoints:</p> <ul style="list-style-type: none"> • Baseline • 2 years after the pre-intervention outcomes were measured. There was variation in the measurement points in relation to the implementation of the intervention. <p>Primary outcomes were:</p> <ul style="list-style-type: none"> • Variables of the psychosocial work environment including work climate, job control, clarity of work goals, supervisor support and flow of information. • Variables of wellbeing such as work-related emotional exhaustion and perceived general stress symptoms.
Study limitations (author)	<ul style="list-style-type: none"> • Mandatory participation controlled the self-selection to some degree, but registered participation showed that the design did not fully succeed. • The organizational flexibilities could not be controlled for in this study. Although the intervention was planned at the work-unit level, the statistical analyses could only be carried out at the individual level because of the small size of several work units. • During the study period leadership training was organized within the organization, which may have confounded the results in an unsystematic way. • There were some differences between the study groups, for example, there were more women in the intervention group than in the control groups. • The stepwise organization of the work conferences caused a variation in the time spans of the measurements before and after the intervention.

Study limitations (reviewer)	<ul style="list-style-type: none"> • No ITT analysis was performed. • Outcome measures were self-reported.
Source of funding	Not reported

Study arms

<p>Participative conference (N = 253)</p> <p>253 individuals participated in the work conference.</p>
<p>Waiting list (N = 165)</p> <p>165 individuals were assigned to control group 2. This group were based in a separate department than the intervention group.</p>

Characteristics

Arm-level characteristics

	Participative conference (N = 253)	Waiting list (N = 165)
Age		
Mean/SD	44.2 (9.1)	45 (10.8)
Gender N calculated by reviewer		
Women		
Sample Size	n = 63 ; % = 25	n = 25 ; % = 15
Men		

	Participative conference (N = 253)	Waiting list (N = 165)
Sample Size	n = 190 ; % = 75	n = 140 ; % = 85
Ethnicity Not reported		
Socioeconomic status Reported as Years of basic education - N calculated by reviewer		
Less than 9 years		
Sample Size	n = 109 ; % = 43	n = 87 ; % = 53
9 to 11 years		
Sample Size	n = 116 ; % = 46	n = 71 ; % = 43
12 years/matriculation		
Sample Size	n = 28 ; % = 11	n = 7 ; % = 4

Outcomes

Study timepoints	Baseline 2 (year) 2 years after the pre-intervention outcomes were measured. There was variation in the measurement points in relation to the implementation of the intervention.
-------------------------	--

Employee outcomes

	Participative conference		Waiting list	
	Baseline	2 (year)	Baseline	2 (year)
	N = 253	N = 253	N = 165	N = 165
Work climate Self-reported- 5 items <i>Polarity: Higher values are better</i>				
Sample Size	n = 253 ; % = 100	n = 253 ; % = 100	n = 165 ; % = 100	n = 165 ; % = 100
Mean/SD	3.31 (0.79)	3.32 (0.81)	3.46 (0.76)	3.24 (0.75)
Stress- emotional exhaustion Self-reported - Maslach Burnout Inventory – General Survey (MBI-GS) <i>Polarity: Lower values are better</i>				
Sample Size	n = 253 ; % = 100	n = 253 ; % = 100	n = 165 ; % = 100	n = 165 ; % = 100
Mean/SD	1.83 (1.24)	1.73 (1.35)	2.05 (1.52)	1.99 (1.44)

Work climate - Participative conference vs Waiting list - 2-year follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low

Section	Question	Answer
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate <i>(Self-reported outcome)</i>

Job stress - Participative conference vs Waiting list - 2-year follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low

Section	Question	Answer
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate <i>(Self-reported outcome)</i>

Study arms

Participative conference (N = 253)	
Brief name	Participative work conference based on democratic dialogue [page 459]
Rationale/theory/Goal	The work conference method, also called “search conference”, is an intensive participative method for involving employees in organisational planning and decision making. It enables large groups to discuss and develop their work in seminars. As participation is a central means of increasing employees’ control over their jobs, the work conference method has also been applied in improving the psychosocial work environment. [page 461]
Procedures used	<ul style="list-style-type: none"> • The intervention consisted of two sessions, with 30 to 60 participants attending each conference. • Participants worked in a large group and in small groups of five or six people. Participants from the same work unit worked together whenever possible. • The phases of the conferencing were: (1) creating visions of well-being at the workplace; (2) recognizing the obstacles to fulfilling these visions; (3) setting goals for developing the psychosocial work environment and well-being; and (4) making a practical development plan for the work unit. • The intervention was implemented by external consultants, who guided the process, but did not act as experts in developing the psychosocial work environment or wellbeing. <p>[pages 462 and 463]</p>

Provider	Two experienced external consultants [page 463]
Method of delivery	Conferences [page 463]
Setting/location of intervention	Not reported
Intensity/duration of the intervention	<ul style="list-style-type: none"> • The first session lasted 2 workdays. • The second session lasted for half a day. <p>[page 463]</p>
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None
Waiting list control (N = 165)	
Brief name	Waiting list control [page 464]
Rationale/theory/Goal	Not applicable
Materials used	Not reported

Procedures used	<ul style="list-style-type: none"> Employees had the opportunity to participate in work conferences after the study period/ [page 464]
Provider	Not reported
Method of delivery	Not reported
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	NA

D.36 McElligott 2010

Bibliographic Reference McElligott, Deborah; Capitulo, Kathleen Leask; Morris, Diana Lynn; Click, Elizabeth R; The effect of a holistic program on health-promoting behaviors in hospital registered nurses.; Journal of holistic nursing : official journal of the American Holistic Nurses' Association; 2010; vol. 28 (no. 3); 175-185

Study details

Study design	Non-randomised controlled trial (NRCT)
Trial registration number	Not reported
Aim	To determine whether a holistic programme is effective in improving health-promoting behaviours in nurses.
Country/geographical location	US
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: not reported • Industry: healthcare • Size of organisation: large • Contract type: not reported. • Seniority: mixed (staff nurses, advanced practice nurses, management, and other positions) • Income: not reported
Inclusion criteria	<ul style="list-style-type: none"> • Participants were registered nurses. • Participants were currently working full time or part time on selected units. • Participants had agreed to participate in the study.
Exclusion criteria	<ul style="list-style-type: none"> • Participants with per diem and/or licensed practical nurse status.
Method of allocation concealment	Not reported
Unit of allocation	Cluster (unit)
Unit of analysis	Individual

Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • The sample size was determined by Cohen’s power analysis. Based on two groups using analysis of variance (ANOVA)-repeated measures within–between interactions, with a power of .80, an effect size of .2, and level of significance of .05, the appropriate sample size for each group was 50 with a total of 100 participants. • No ITT analysis was reported. • After the measures of central tendency were determined from the demographic data, analysis of variance was used to determine differences, if any, between the experimental and the control group. • HPLP II scores for multivariate analysis were analysed using repeated measures ANOVA. The reliability of the HPLP II was supported by the calculation of alpha coefficients for both the experimental and control groups.
Attrition	<ul style="list-style-type: none"> • The initial return rate for the baseline survey was 39.5% for the intervention group and 42.5% for the control group. • The final return rate for the follow up survey was 28% for the experimental group and 26% for the control group.
Assessments and timepoints	<p>The following outcomes were measured at the following timepoints:</p> <ul style="list-style-type: none"> • Baseline • 3 months following the baseline survey
Study limitations (author)	<ul style="list-style-type: none"> • The study was conducted in a hospital setting, necessitating a convenience sample, limiting the generalisability of findings. • Data were self-reported. • High attrition rate. • There was no long-term follow-up.
Study limitations (reviewer)	None
Source of funding	Not reported

Study arms

Holistic programme (N = 208)

Control (N = 200)

Characteristics

Study-level characteristics

	Study (N = 103)
Age	
Range	23 to 64
Mean/SD	39 (<i>empty data</i>)
Gender N calculated by reviewer	
Women	
Sample Size	n = 98 ; % = 95
Ethnicity N calculated by reviewer	
White	
Sample Size	n = 66 ; % = 64
Asian	

	Study (N = 103)
Sample Size	n = 19 ; % = 18
African American/Black	
Sample Size	n = 11 ; % = 11
Hispanic	
Sample Size	n = 3 ; % = 3
Socioeconomic - educational level	
Masters	
Sample Size	n = 7 ; % = 7
BSN	
Sample Size	n = 56 ; % = 58
Associate or diploma degree	
Sample Size	n = 33 ; % = 34

Outcomes

Study timepoints	Baseline 3 (month) 3 months after the intervention began

Employee outcomes

	Holistic programme		Control	
	Baseline	3 (month)	Baseline	3 (month)
	N = 208	N = 208	N = 200	N = 200
Quality of life Self-reported - HPLP II instrument <i>Polarity: Higher values are better</i>				
Sample Size	n = 52 ; % = 25	n = 52 ; % = 25	n = 51 ; % = 26	n = 51 ; % = 26
Mean/SD	2.62 (0.38)	2.81 (0.36)	2.67 (0.44)	2.72 (0.43)

Quality of life - Holistic programme vs Control - 3-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Low

Section	Question	Answer
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (<i>Outcome measure was self-reported</i>)
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate (<i>Self-reported outcome</i>)

Study arms

Holistic programme (N = 208)	
Brief name	The Collaborative Care Model (CCM) Program, and development of a self-care plan [page 175]
Rationale/theory/Goal	The conceptual framework for the study was the Health Promotion Model, which integrated perspectives from nursing and behavioural sciences into factors that may influence health behaviours. Health promotion, the key concept in the Health Promotion Model is described as “behavior motivated by the desire to increase well-being and actualise human health potential”. The Health Promotion Model and the core values of holistic nursing as defined by the AHNA were key concepts in the development and evaluation of the effect of the CCM. [page 177]
Materials used	<ul style="list-style-type: none"> A written statement describing selected goals to increase health and the activities that are needed to reach the goals. [page 177]
Procedures used	<ul style="list-style-type: none"> The Collaborative Care Model (CCM) programme involved an 8-hour program created to promote a culture of caring, focusing on relationships and patient-centred care, fostering and sustaining a healing environment and a culture of safety. The program components were adapted from the Holistic Nursing Handbook and best practice models. The programme included interactive lectures on the CCM program, AHNA values, formation of the collaborative care council, and a code of professionalism. Content also included completion of the HPLP II tool, option for study participation, and experiences with imagery, appreciative inquiry, and a sharing circle.

	<ul style="list-style-type: none"> Participants completed a self-care plan, which was a written statement describing selected goals to increase health and the activities that are needed to reach the goals. <p>[page 177]</p>
Provider	Instructors [page 178]
Method of delivery	Classes [178]
Setting/location of intervention	Classroom [page 178]
Intensity/duration of the intervention	<ul style="list-style-type: none"> 8-hour programme [page 177]
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None
Control (N = 200)	
Brief name	Did not participate in the collaborative care model and did not complete a self-care plan. [page 179]
Rationale/theory/Goal	Not applicable

Materials used	Not applicable
Procedures used	<ul style="list-style-type: none"> Control participants received the same information, coding, and announcement letter as the experimental group. [page 179]
Provider	Not applicable
Method of delivery	Not applicable
Setting/location of intervention	Not applicable
Intensity/duration of the intervention	Not applicable
Tailoring/adaptation	Not applicable
Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	None

D.37 Narayanasamy 2018

Bibliographic Reference Narayanasamy M, Geraghty J, Coole C, Nouri F, Thomson L, Callaghan P DA; Mental health first aid in the workplace: A feasibility study; 2018

Study details

Study design	Interview study
Trial registration number	Not reported
Aim	To explore the perceptions and experiences of the MHFA programme in relation to the workplace, including awareness, acceptability, delivery and impact.
Country/geographical location	England - Of the 6 participating organisations, 3 had lead contacts based in the North of England (one of these was from an organisation with multiple sites throughout England), 2 had lead contacts in Greater London (but had multiple sites throughout England) and 2 had lead contacts in the West Midlands.
Setting	2 private sector organisations (a construction and rail company and a finance and accountancy company) 2 public sector organisations (higher education, and a media/ broadcasting/ communications organisation) 2 third sector organisations (a research organisation and an organisation focusing on mental health).
Inclusion criteria	The interviews were part of a wider study on MHFA which investigated through a questionnaire survey, the extent to which MHFA training had been implemented in organisations. The participants were all drawn from organisations which had been involved in the earlier survey aspects of the study. Participants were drawn from 6 organisations in which mental health first aid training had been received either through Mental Health First Aid England's Client Experience Team or via an independent instructor. Purposive sampling was conducted to ensure that one organisation from each of the 3 sectors (public, private and third sector) had received MHFA England's training and one had received independent training. Participants consisted of:

	<ul style="list-style-type: none"> • Those who had received some form of training from MHFA England (see below) • Those who had not had MHFA training. • Those who were MHFA co-ordinators in their organisations. • Those who had received help from a trained MHFA from the workforce. <p>There were three levels of MHFA training that participants may have received: The standard 2 day Adult MHFA training, a one day Adult MHFA training, or a 3 hour MHFA Lite (Adult) training course.</p> <p>The aim was to include managers. line managers, health and safety representatives and others who wanted to talk about mental health at work.</p>
Exclusion criteria	None reported
Method of randomisation	Not applicable
Method of allocation concealment	Not applicable
Unit of allocation	Not applicable
Unit of analysis	Not applicable
Statistical method(s) used to analyse the data	<p>27 interviews lasting between 30-60 minutes were carried out. In 5 organisations these were conducted by telephone (n=22). In the 6th organisation, these were conducted face-to-face as all interviewees were available in the same location, on the same day.</p> <p>Interviews were transcribed and thematic analysis was carried out, consisting of coding data to identify recurring themes and categorising them. Further transcripts were then analysed using these themes.</p>
Attrition	Not applicable
Assessments and timepoints	Not applicable

Theme 1	<p>In the context of why organisations do /do not take up MHFA training, the following were identified:</p> <p>The importance of MHFA being part of a wider organisational approach to promoting mental wellbeing.</p> <p>One of the key reasons for MHFA training being introduced was that it formed part of an overall approach to staff mental health, with increased awareness of the importance of staff mental wellbeing, and concerns about sickness absences due to poor mental health.</p> <p><i>' ... everybody thought it was fantastic and felt really equipped to support colleagues going forward. So it just seemed like it was the right time in terms of just starting this role and wanting to bring new initiatives in because we didn't really have enough going on already.'</i></p> <p>In some cases MHFA was being offered alongside other interventions around general mental health and was seen as something that could specifically address crisis situations:</p> <p><i>'We also have mental health awareness courses as well, specifically for managers, and looking at how they can develop a culture of mental health and wellbeing within their teams and support mental health and wellbeing on a day-to-day basis rather than just the emergency end of the spectrum.'</i></p> <p>However some participants felt that MHFA was being offered in order to 'be seen to be doing something' or to respond to colleagues in crisis, rather than as part of a series of measures addressing any potential underlying causes of the crisis.</p> <p><i>'So we end up needing a sticking plaster, as in 'I need a time out, I need some help' and going to someone. Whereas really, we should be understanding more how people like bosses and colleagues and so on, how they behave and all this sort of thing, how that has an impact'.</i></p> <p>And there were some concerns that organisational culture may sometimes not be addressed until it was too late.</p> <p><i>'I think because of the area of the business that people work within, I think it can be very highly pressured and stressful. So just as I started [working at the organisation], there was an email communication that had been sent around with regards to somebody from the X office who had gone on secondment to the [international] office and actually committed suicide on his first weekend there. And this guy had been dealing with depression and stress that no one was aware of'</i></p>
Theme 2	<p>In the context of why people do/do not attend MHFA training, the following were identified:</p> <p>Altruism</p>

Some participants reported becoming a MHFA for altruistic reasons. In some cases this was because they had experienced poor mental health themselves, or they felt they had the personality traits that suited them to this role.

'I'd suffered from problems myself, and so I always thought if I can, and I like to think I'm a caring person, so if I can help somebody in any way possible, I'll probably go out of my way to try and help them. And I thought I wouldn't want anybody to go through whatever I went through.'

'I've not really got any past experience in mental health; I am a professional coach. I've had training in coaching, and I think it's just my nature really. And probably because of the jobs I've had – I've been frontline – you develop a way of talking and listening to people. And it just appealed to me.'

Improving knowledge and confidence to help

Others undertook the training to develop the confidence to help others and to improve their knowledge about mental health.

'I think my hopes for the training course were, like I said, to feel more confident in a situation where I would want to help someone but maybe didn't know what should be done. And I think I just was interested to find out more about things like psychosis and, you know, what to do if in sort of like more towards the extreme side of things.'

Willingness to do the training and put it into practice.

In some organisations the training was open to anyone who was interested, in others it was mandatory for people in certain roles.

'I would say there wouldn't be resistance from the individuals because they volunteer. And they say they want to do it...'

However, some participants noted that some people had the training but were then reluctant to put it into practice.

'There are people who have done the course who aren't happy for somebody just to rock up to their desk and say, 'Hi, my name's so-and-so; I'd really like to have a chat and a coffee about something which is on my mind', so some of those people are taking up the slots that have been allocated for the training and they're not willing to put the training into practice.'

Despite this many participants felt MHFA should be mandatory and likened it to general first aid training.

'I think it should be compulsory, yeah. It's like first aid, you know, you could save somebody's life, couldn't you, if you know what to do. Or you could do harm. And I don't think it should be any different really.'

	<p>But some noted that there may be reluctance to take on the perceived responsibilities of a MHFA.</p> <p><i>'But it's coming out at the other end and saying, you know, I've been given a responsibility here and I actually need to in fact walk away with notes, work through them, understand them, there has to be, it's almost like doing revision ... Because people will know X is qualified, oh, X has been on this, actually I'm kind of more of a danger at that point unless I feel happy with what I've learnt'.</i></p>
<p>Theme 3</p>	<p>Barriers to attending the training and becoming a MHFA.</p> <p>Time and concerns about workload</p> <p>Participants noted various barriers to taking up the offer of training. These included time pressures, workloads and managers perceptions of the amount of time being a MHFA might involve.</p> <p><i>'...but I think also everybody we talk to is always so busy, you know? I haven't got time for this, I haven't got time for that, offering them a Lite course. You might get more people to sign up for it because they're not having to give up two full days'.</i></p> <p><i>'I think probably the only resistance I'm aware of, and I suppose it wasn't really resistance, but just more concern that my boss had about what the effects would be and whether that would take away from what I'm meant to be here doing type thing. But I think that was more just a lack of understanding on that account, and I think once she understood that she was fine about it'.</i></p> <p>Attitudes towards mental health</p> <p>Managers may also have some concerns about people who have a history of poor mental health attending the training.</p> <p><i>'And of course you had to fill in a form if you wanted to go on the network after you'd done the training, and it obviously flagged up that I'd had quite a serious condition. So they did call me back and have a chat and say, you know, 'Do you think this might be too much for you?' And we just had a chat. And I said, 'Oh no, it's fine.' And they said, 'Oh well, yeah, if you're happy to go ahead'.</i></p> <p>Some participants noted that certain attitudes among some members of the workforce might prevent them taking up the training and becoming a MHFA.</p> <p><i>'... the ones who talk about snowflake generations and all of that kind of stuff – in my day we just got on with it, you know, that whole thing. So they're the kind of quite classic, I suppose...people who don't see anything wrong with</i></p>

	<p><i>using derogatory terms, they think people should man up, they think people should just get on with and pull themselves together kind of thing’.</i></p> <p>Though others noted attending the training might help change attitudes</p> <p><i>‘[It’s] very like we’re men and mental health is just not a thing: stiff upper lip and all that. There are people in the business that do think like that. And I think if you asked, if they were told that they had to attend the course, it might be different’.</i></p> <p>Facilitators for attending the training and becoming a MHFA.</p> <p>Support and involvement of senior leadership</p> <p>Participants noted the importance of senior managers promoting or attending the training.</p> <p><i>... if leadership push the message, people start doing it. If leadership don’t attend these [MHFA] sessions, it’s all just word of mouth, and the only way that this will become a prominent thing is when people like myself, God forbid if I’m still there and I am at the top of the chain and can start making these changes myself.</i></p> <p>Having a balance of MHFAs according to gender, seniority and job role</p> <p>Some participants also noted the importance of there being a balance of MHFA’s according to gender, seniority and job role.</p> <p><i>‘they’re all office based, either administrative roles or one of the safety advisers, QS, quantity surveyor. So they’re office based, which is why I say what we really want is a spread across. It would have been great to have had a couple of site supervisors as well, or even some lads who are on the tools, you know, chippies or something’.</i></p> <p><i>‘There were some people who were very senior. There was definitely what we would call a level four, so that’s one off the top level. But most of them were level ones, twos and threes ... There was about 20 people there, mainly female; in fact, I think I was one of only two men in the room’</i></p>
Theme 4	<p>Experiences and perceptions of the MHFA training</p> <p>Participants commented on the intensity and duration of the course with some commenting that the 2 day course ensured they were given comprehensive training and that it ensured consistency across the workforce if everyone attended the same course. Where there were concerns about taking time off work however, the 'Lite' course (3 hours) was seen as a useful first step.</p>

	<p><i>'I think the time commitment might have a bearing on some people, so get them into the Lite course first. And there will be some, I'm sure, from that who would want to do more, and other people might feel that that was sufficient for them'.</i></p> <p>Participants noted that the amount of knowledge they gained exceeded their expectations and that they valued the practical aspects of the course and the supportive approach.</p> <p><i>'I thought it was really good training. I thought it was practical. I thought it took the fear out of stuff. Because to me something like psychosis or self-harm or talking about suicide, it's quite scary in some ways. And it was a safe place to do it and it was done in a supportive manner'.</i></p> <p>Participants also noted that they'd like to do a refresher course periodically.</p> <p><i>'The only thing that I'd quite like is for there to be a process for refreshing, in the same way there is for being a physical. So I'm a physical first aider and it's on the system, then every three years you have to do a refresher. And it just gives you that confidence that you're still, you haven't gone rusty, especially if maybe you haven't encountered many situations'.</i></p>
<p>Theme 5</p>	<p>The impact of training</p> <p>Some participants reflected on the impact of training with some commenting how it had impacted on them personally e.g. through improving their confidence to support colleagues and others noting changes at organisational level.</p> <p><i>'I feel a lot more confident in [signposting] now. When I encountered the first one, it was actually prior to my training, so it was a little bit, yeah, I was upset actually because I didn't know. I couldn't do it'.</i></p> <p><i>'And I think the biggest impact was seeing how it was dealt with this time, which must be I think five years after that initial, the awful one basically, But the difference this time, their manager had completed the two-day training. And they're now back in work in a way that I would never have expected them, and to be able to come back, they've been supportive, they've been supported, plans have been put in place at the level of understanding about what the person is managing and, you know, it's just remarkable'.</i></p> <p>Others noted a change in the organisational culture around mental health.</p> <p><i>... having that group of people ... who basically put their hands up and said I'm interested in mental health and I'm interested in helping people who might have an issue of whatever magnitude, suddenly means it's a bit more in the open'</i></p>
<p>Theme 6</p>	<p>Promoting MHFA in the workplace</p>

	<p>Participants described how MHFAs were made known to colleagues in the workplace. Often this was by displaying lists in communal areas, on websites and the intranet. Some noted that for those with concerns about stigma and confidentiality, it would be helpful to display contact details in more private locations.</p> <p><i>'They're in the toilets in our office. I think it's a bit more subtle. If you're going to jot the number down, no one has to see you do it'.</i></p> <p>Though others felt that MHFAs should be treated in the same way as general first aid and that this would help foster a more open approach to mental health.</p> <p><i>... basically you have a list of 'normal' first aiders – you know, physical first aiders – and that's stuck to the wall in the staff tearoom. Next to it is the one from the Mental Health First Aiders ... that's what the culture is that we're looking for that people have an awareness of; obviously it's just very much normalised in the workplace'.</i></p> <p>Some felt the MHFAs should be identifiable by badges or certain lanyards, but others noted that people may not feel comfortable approaching MHFAs if they were identifiable in this way.</p> <p><i>'....but also people who might shy away from it: if they walk up to someone with this lanyard on and then start talking in a hushed tone and then maybe they disappear off somewhere else. I'm guilty of it myself.</i></p> <p>Participants noted the importance of keeping contact details and lists of trained MHFAs up to date and of using more than one strategy to promote the MHFA , as several noted a lack of awareness of MHFAs in their organisation.</p> <p><i>'In our department, we have a lot of things on our webpages for staff. We have a lot of publicity material around the building. There's two of us in the department, coincidentally, who are part of the mental health network. And we have our information up, our photographs, our profiles, etc., so that people can see that. But it still surprises me when talking to people from around the campus that not everybody is aware that it's available'.</i></p> <p><i>'I honestly haven't really heard of it. It's something that I've not really come across before; certainly not from just kind of passively being here ... I'm getting to hear of different things, like mentoring, but not the first aid thing, I haven't. I didn't know it existed'.</i></p>
Theme 7	<p>Accessing MHFA in the workplace</p> <p>Participants reported different ways in which MHFAs could be accessed in their workplace. In some cases, access was through a formal system.</p>

'So on the mental health pages on X there is access to this one particular person who deals with it, so they would then contact that person and they will have a list of first aid(ers) to kind of match up people. Kind of like a really weird dating [service]'

In others MHFAs could be accessed more informally

'The person that approached me first of all ... asked to speak to me about something completely unrelated, and then when we sat down to talk about it, he just immediately said, 'Is anything I say to you in confidence?' And I said, 'Yeah, absolutely.' ... He made sure he was happy that it was, and then started to talk to me about what his problem was'.

While some people preferred to speak to someone they already knew, others preferred not to and it was thought beneficial to have MHFAs distributed throughout the organisation to facilitate this.

'We put them on a list, which means that their contact details and their location is listed. So if anybody wants to find one, they just pull them off the list and they don't have to talk to somebody that they already know; they can pick somebody at random in their building or a different building, for instance'.

Though some participants indicated that they would be reluctant to use MHFAs at all, due to concerns about being too close to them and around confidentiality.

'I think the fact that we've got within the organisation an occupational nurse that comes in, I would probably, if I ended up in a situation that I couldn't speak to a colleague, I would probably go and see them as a starter for 10, probably more so than some of the people who've identified as a Mental Health First Aider ... I know like for instance the Samaritans have got a phone number you can talk to and things like that. Those sort of things where it's – you're not looking in someone's eyes sort of thing, but you can speak to them.'

There was some discussion around MHFAs proactively approaching colleagues who appeared in need of support, though this was less common than colleagues approaching the MHFA.

'So we ask people to do it in both directions. So to be on the lookout for anybody that might seem like they're particularly stressed, distressed or in some kind of crisis or having a difficult time. I think more often than not it's the individual that would approach the Mental Health First Aiders'

Barriers to accessing MHFA.

Pressure of work, concerns about distracting the MHFA from their work and lack of a private space were some of the barriers mentioned by participants.

	<p><i>'I wouldn't want to during working hours go to somebody else who was working because I'd know that ... they'll then be half an hour behind on everything they're trying to do. So I think the work pressure side of it comes in .'</i></p> <p><i>'I also find it difficult because sometimes people will just come and talk to me, but reception's still happening. And there is always an opportunity to say to them, 'Would you like to go somewhere a little bit quieter and talk to me?' But it's too public a place really, I think'.</i></p>
Theme 8	<p>Delivering MHFA in the workplace</p> <p>Responsibilities and roles</p> <p>Participants who were trained as MHFAs discussed the role and their responsibilities. They were clear that having undertaken the training did not make them a professional in mental health and that their role was to listen and signpost people to other sources of support.</p> <p><i>'... because it was made very clear that you're not supposed to be a counsellor, you're just supposed to be a middle person to redirect and let people know the available facilities' .</i></p> <p>One noted the training had highlighted the importance of knowing when the discussion needed to become more formal and they would need to direct the person to the organisation's policies.</p> <p><i>'.....she said, 'Oh, there's a point where you just know that it's more serious, and things are not going to be sorted just by a little chat', and that's when you would start saying, 'Well, this is what the university offers and there's this, there's the phone line that you can ring, and I assume it would be quite an obvious point, you would just know.'</i></p> <p>For some, the role was also about being an advocate for mental health promotion generally as opposed to providing support alone.</p> <p><i>'I think a significant part of the role is about just keeping the profile of the mental health agenda reasonably high and normalising discussions about it. I don't think all the time for me it's necessarily about having those one-to-ones, though it can be.'</i></p> <p>Some talked about the need to balance their MHFA role against their substantive role and duties.</p> <p><i>'It's just finding the time alongside my real job.'</i></p> <p><i>'I find it difficult because I know people are reluctant to cover ... it's too public a place really, I think. But, equally, trying to get someone to cover at a moment's notice is just so hard.'</i></p>

	<p>Some talked about the need to set boundaries, such as not giving personal contact details and offering support in working hours only. Others talked about their need to balance their personal safety while maintaining privacy and confidentiality.</p> <p><i>'He'd asked me to go to his office. He had quite a few sort of personal issues. However, the girls were worried because they didn't know where I was. And I said I was on mental health work and that was enough for me, but they were concerned because if anything had happened, they didn't know where I was. And I said I can't tell you where I am because it's confidential '</i></p>
Theme 9	<p>Type of help and support provided.</p> <p>Participants who had undergone the training discussed how they had put it into practice. Some recounted specific incidents.</p> <p><i>'I had a colleague in a different department who was talking at the meeting the other day about how she'd approached somebody who came into her office having a fullblown panic attack and who'd then started also self-harming. And she'd been called because she was the Mental Health First Aider in the department and over a 40- minute period she managed to get him to calm down and resolve the situation.'</i></p> <p>Sometimes they may be approached on behalf of another person.</p> <p><i>'... I've also had managers flag up when some people are struggling with various things and they've said is it OK to suggest that they maybe go for a coffee with you at some point. And you say, 'Yeah, absolutely, no problem'.</i></p> <p>Others noted that they may not always be formally approached by colleagues for help.</p> <p><i>'Sometimes it just develops from an ordinary conversation that you suddenly find yourself listening to things – you know, a different kind of conversation takes a different turn.'</i></p> <p>And the informality of some approaches made it harder to say with certainty that the way the MHFA had intervened had been due to their MHFA training.</p> <p><i>'I mean, it's someone that I would have probably had a similar conversation with anyway. And actually he was nowhere near approaching crisis or anything like that ... So it was after a bereavement. It was probably a very similar conversation to what I'd have had anyway with him'</i></p>
Theme 10	MHFA networks

Most organisations had networks of MHFAs, both to create a formal system to allow people to identify and access the support of MHFAs and also to provide mutual support and information sharing among the MHFAs and to promote the MHFA service.

... So I wouldn't say it's further training, it's just recapping, and we discuss certain specific areas – like, I mean, next week I think it's people who have had some sort of abuse ... And they did offer a meeting on suicide and how to deal with it in the workplace. So it's just like extra bits of information, and people discuss what cases, not specifically, but what's happened that month, and if there's anything, any other business really.

Recording and monitoring

In some organisations there were systems of recording MHFA interactions, either formally or informally

'We ask our Mental Health First Aiders just about an e-form, which is essentially just the Mental Health First Aider's name, the department that the person comes from and the nature of why they were having the conversation and any signposting advice they gave. There's an option for them to give a name if they think that's appropriate and if they think it might be an ongoing thing, but it remains completely confidential and accessible only by the Mental Health First Aider'.

'... but we also have an informal recording kind of form, which is for when you might notice someone in distress and just have a chat with them or you're having coffee and things come up and you just start using your skills a bit more informally.'

However this wasn't felt to be appropriate by some, as the informal nature of some of their interactions meant it wasn't always easy to determine when they were using their MHFA skills or were acting in the capacity of a MHFA.

'We are asked that if we have to use our training within the business that we provide some sort of information about where we've used that and how we've used it back to X team. So that is captured. But I think some people will probably use it and not realise they've used it. I've used it but not for people in the business'.

Others raised concerns about maintaining confidentiality and whether the requirement to complete a form may deter colleagues in need of support from approaching a MHFA.

'I wasn't going to go and put it down anywhere, because of the risk of it leaking, as it were. And we don't have a system, we don't have any system – well, we've got a database where if somebody has an accident or an injury, all that information goes on there, and any investigation goes on there. But we don't have the same thing for anybody who's raised a mental health issue ... If we did that and we did start recording things, I think that would discourage people from actually coming forward'.

Other concerns were around the time required to complete forms.

Some participants noted potential benefits to recording and monitoring of selected information. These included monitoring how the service was being used, evaluating it and sharing best practice. Some felt that MHFA should be treated in the same way as physical first aid in this respect, though others disagreed, feeling it would be intrusive to follow-up on the outcomes.

'...So given that we are supposed to be combating stigma, you could argue that you should have the exact same requirements around Mental Health First Aid.'

'I didn't ask him for any details, and he didn't say, 'Yes, I'm OK because I've been having counselling or CBT', or taking whatever antidepressant or whatever, or been to the doctors or whatever. I didn't enquire about that, just asked him was he OK? He said yeah, so OK. He's a big boy; he'll tell me if he's not or if he needs anything.'

Measuring success

Measuring the success and effectiveness of MHFA in an organisation was seen as challenging and there were few objective methods of doing so.

'You need real-time feedback from people who've actually had that interaction with a Mental Health First Aider, which I actually don't know myself who has. So I suppose it's getting feedback ... And I suppose it would be looking at that data and seeing if there's been any positive changes since Mental Health First Aiders have come in.'

Evaluation was mainly based on anecdotal evidence of individual cases, general indicators such as staff wellbeing, or on sickness absence data.

'You could look at actually how many people are off sick with mental health – because you could argue that were my department to have been much better, they might have recognised the signs that I was struggling long before it became at the point where actually I couldn't work anymore.'

Though it was noted that this may not be a reliable indicator if some people had been given time off to take up support relating to their mental health.

Some participants suggested surveys to generate feedback on the use of MHFAs, though others warned against merely focusing on numbers as a measure of success and highlighted the need to determine if the interaction had been helpful. Concerns about confidentiality were noted and others noted that the open-ended nature of the interaction meant that the MHFA wasn't always aware of the outcome. In addition, it is not always possible to attribute improvements to the MHFA specifically.

	<i>'I think it's a difficult one as well, because like I said to you, I think [for] some people, being a Mental Health First Aider and just being a friend and someone that's able to listen sort of starts merging in some respects '</i>
Study limitations (author)	<ul style="list-style-type: none"> • It initially appeared that not many individuals who had used the services of a MHFA had been recruited for the interviews, but later transpired that some of the MHFAs themselves had sought support from other MHFAs and so these two groups were not mutually exclusive. However authors state that in retrospect, they would have changed the recruitment strategy to increase participation of individuals who had received MHFA. • Authors also noted that individuals with little or no knowledge of mental health issues may be more satisfied with, and less critical of, MHFA training than experienced professionals. • In one organisation, the lead contact circulated information about the study to all members of the workforce, whereas in the other 5 organisations, the lead contact circulated the information to staff they thought may be interested, e.g. because they had had MHFA training or because they were part of a mental health network. This may have introduced sample bias.
Study limitations (reviewer)	None to add
Source of funding	Institute of Occupational Safety and Health (IOSH) Research and Development Fund.

Study arms

Mental Health First Aid Training (N = 27)

The MENTOR study - Mental health First aid in the workplace

Characteristics

Study-level characteristics

	Study (N =)
Age	

	Study (N =)
Gender	
Ethnicity	

Section	Question	Answer
Aims of the research	Was there a clear statement of the aims of the research?	Yes
Appropriateness of methodology	Is a qualitative methodology appropriate?	Yes
Research Design	Was the research design appropriate to address the aims of the research?	Yes
Recruitment Strategy	Was the recruitment strategy appropriate to the aims of the research?	Can't tell <i>(In one organisation, the lead contact circulated information about the study to all staff. In the other 5 information was circulated to staff they thought may be interested, e.g. because they had had MHFA training or because they were part of a mental health network. This may have introduced sample bias. Authors state that in retrospect, they would have changed the recruitment strategy to increase participation of individuals who had received MHFA, though it is noted that some MHFAs had received support from other MHFAs and that these 2 groups are not mutually exclusive.)</i>
Data collection	Was the data collected in a way that addressed the research issue?	Yes

Section	Question	Answer
Researcher and participant relationship	Has the relationship between researcher and participants been adequately considered?	Can't tell <i>(The relationship between researcher and participants is not described)</i>
Ethical Issues	Have ethical issues been taken into consideration?	Yes
Data analysis	Was the data analysis sufficiently rigorous?	Can't tell <i>(It is not clear how many researchers were involved in the thematic analysis or coding of themes, e.g. whether a second author checked coding of themes or how any disagreements were resolved.)</i>
Findings	Is there a clear statement of findings?	Yes
Research value	How valuable is the research?	The research is valuable
Overall risk of bias and relevance	Overall risk of bias	Moderate
	Relevance	Highly relevant

D.38 Olson 2015

Bibliographic Reference

Olson, Ryan; Crain, Tori L; Bodner, Todd E; King, Rosalind; Hammer, Leslie B; Klein, Laura Cousino; Erickson, Leslie; Moen, Phyllis; Berkman, Lisa F; Buxton, Orfeu M; A workplace intervention improves sleep: results from the randomized controlled Work, Family, and Health Study.; *Sleep health*; 2015; vol. 1 (no. 1); 55-65

Moen, Phyllis, Kelly, Erin L, Fan, Wen et al. (2016) Does a flexibility/support organizational initiative improve high-tech employees' well-being? Evidence from the work, family, and health network. *American Sociological Review* 81(1): 134-164

Moen, Phyllis, Kelly, Erin L, Lee, Shi-Rong et al. (2017) Can a flexibility/support initiative reduce turnover intentions and exits? Results from the work, family, and health network. *Social Problems* 64(1): 53-85

Study details

Study design	Cluster randomised controlled trial
Trial registration number	Not reported
Study start date	Sep-2009
Study end date	Sep-2011
Aim	To evaluate the effects of a theoretically informed workplace intervention on employee sleep
Country/geographical location	US
Setting	<p>Workplace</p> <ul style="list-style-type: none"> • Sector: Private • Industry: IT sector • Organisation size: Large • Contract type: Not specified. • Seniority: Not specified • Income: Not specified
Inclusion criteria	Not reported
Exclusion criteria	Not reported

Method of randomisation	Not reported
Method of allocation concealment	Not reported
Unit of allocation	Cluster (study groups of managers and employees)
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<p>Power calculation: Not reported.</p> <p>Intention to treat: Not reported.</p> <p>A general linear mixed modelling approach for cluster-randomized designs with restricted maximum likelihood estimation was used to deal with nonindependence of measures due to nesting of individual in the study groups while taking into account baseline values of the outcome variable.</p>
Attrition	<p>233/234 out of 609 individuals in the intervention group were included in analyses.</p> <p>240 out of 562 individual in the control group were included in the analyses</p>
Assessments and timepoints	<p>The following assessments were made at these timepoints.</p> <ul style="list-style-type: none"> • Baseline • 6 month follow-up • 12 month follow-up <p>The primary outcome was total sleep time.</p> <p>Secondary outcomes included.</p> <ul style="list-style-type: none"> • sleep insufficiency • Pittsburgh Sleep Quality Index

	<ul style="list-style-type: none"> actigraph
Study limitations (author)	<ul style="list-style-type: none"> IT worker sample not representative of all workforces. 2 weeks of actigraphy per participant (minimum 3 valid days for each week-long recording)
Study limitations (reviewer)	None to add
Source of funding	<p>WFHN (www.WorkFamilyHealthNetwork.org), which is funded by a cooperative agreement through the</p> <ul style="list-style-type: none"> National Institutes of Health Centers for Disease Control and Prevention: Eunice Kennedy Shriver National Institute of Child Health and Human Development National Institute on Aging Office of Behavioral and Social Sciences Research National Institute for Occupational Safety and Health <p>Grants from</p> <ul style="list-style-type: none"> National Heart, Lung and Blood Institute William T. Grant Foundation, Alfred P Sloan Foundation Administration for Children and Families

Study arms

STAR (N = 609)

27 study groups randomised to STAR (Support. Transform. Achieve. Results.)

Usual practice (N = 562)

29 study groups randomised to usual practice

Characteristics

Arm-level characteristics

	STAR (N = 609)	Usual practice (N = 562)
Age (years) Completer characteristics only		
Mean/SD	46.8 (8.8)	46.6 (8.4)
Gender Completer characteristics only		
Female		
Sample Size	n = 112 ; % = 42.7	n = 100 ; % = 37.9
Ethnicity Completer characteristics only, N calculated by reviewer		
White, Non-Hispanic		
Sample Size	n = 169 ; % = 70.5	n = 169 ; % = 72.1
Black . African-American, non-Hispanic		
Sample Size	n = 4 ; % = 1.7	n = 3 ; % = 1.3

	STAR (N = 609)	Usual practice (N = 562)
Asian Indian		
Sample Size	n = 30 ; % = 12.4	n = 32 ; % = 13.8
Other Asian		
Sample Size	n = 12 ; % = 5.1	n = 10 ; % = 4.2
Other Pacific Islander		
Sample Size	n = 3 ; % = 1.3	n = 2 ; % = 0.8
Hispanic		
Sample Size	n = 19 ; % = 8.1	n = 16 ; % = 6.7
More than 1 race		
Sample Size	n = 2 ; % = 0.9	n = 2 ; % = 0.9
Socioeconomic status reported as educational level, completer characteristics only		
High school graduate		
Sample Size	n = 7 ; % = 3	n = 6 ; % = 2.5
Some college or technical school		
Sample Size	n = 54 ; % = 22.7	n = 42 ; % = 17.9

	STAR (N = 609)	Usual practice (N = 562)
College graduate		
Sample Size	n = 179 ; % = 74.4	n = 186 ; % = 79.6

Outcomes

Study timepoints	Baseline 12 (month) After intervention implementation

Employee outcomes

	STAR		Usual practice	
	Baseline	12 (month)	Baseline	12 (month)
	N = 423	N = 423	N = 562	N = 562
Mental health symptoms (1 to 4) Reported using Pittsburgh Sleep Quality Index question related to insomnia (self-reported) <i>Polarity: Lower values are better</i>				
Mean/SD	2.7 (0.8)	2.7 (0.7)	2.8 (0.8)	2.7 (0.8)

Job stress - STAR vs Usual practice - 12-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low

Section	Question	Answer
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Some concerns <i>(High attrition in intervention group)</i>
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns <i>(Outcome measure was self-reported)</i>
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns <i>(Self-reported outcome; high attrition in intervention group)</i>

Study arms

STAR (N = 609)

27 groups randomised to STAR (Support. Transform. Achieve. Results.)

Brief name

STAR (Support. Transform. Achieve. Results- a workplace intervention designed to increase family-supportive supervision and employee control over work time. [pages 55 and 58]

Rationale/theory/Goal	The intervention was a social change process designed to increase employee control over work time and family supportive supervisory behaviors. The change process was an integration of 2 interventions that, in prior evaluations, had independently addressed family supportive supervisor behaviors and employee control, respectively. [page 58]
Materials used	<ul style="list-style-type: none"> • Daily web polls • Computer-based training- cTRAIN;NWeta, Lake Oswego,OR • Enterprise application for iPhone/iPod touch- HabiTrack; Oregon Health & Science University, Portland, OR <p>[page 58]</p>
Procedures used	<p>Intervention period:</p> <ul style="list-style-type: none"> • a facilitator led employees and managers through 8 hours of participatory sessions to transition them from a time-based to a result-based work culture. • During this process, leaders and employees were asked to make structural changes and exercise greater freedom to work at whatever time and whatever place they wanted, as long as they produced their expected work results. • Work groups participated in daily Web polls where they self-monitored and viewed feedback about their collective actions. • Managers/supervisors participated in all change activities plus 4 hours of training in family supportive supervisor behaviors and meetings to discuss the change process. • The training in supportive supervision, which was named “weSupport for Supervisors” for implementation, began early in the overall intervention process by having managers meet with a facilitator individually to complete a 1-hour self-paced computer-based training, set goals, and start a self-monitoring activity. • Each supervisor completed 2 rounds of self-monitoring. <p>[pages 58 and 59]</p>
Provider	Facilitator- not reported. [page 58]
Method of delivery	<ul style="list-style-type: none"> • Group sessions • Training

	<ul style="list-style-type: none"> • Meetings • Individual meetings with facilitator • Computer and iPhone/iPod touch-based <p>[page 58]</p>
Setting/location of intervention	Not reported
Intensity/duration of the intervention	<ul style="list-style-type: none"> • Intervention took place over 3 months. • 8 hours of participatory sessions • Managers/supervisors undertook 4 hours of training and meetings. • 1-hour computer-based training <p>[page 58]</p>
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported
Usual practice (N = 562)	
29 study groups randomised to usual practice.	
Brief name	Usual practice [page 56]

Rationale/theory/Goal	Not applicable
Materials used	Not applicable
Procedures used	Not applicable
Provider	Not applicable
Method of delivery	Not applicable
Setting/location of intervention	Not applicable
Intensity/duration of the intervention	Not applicable
Tailoring/adaptation	Not applicable
Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	None

D.39 Richmond, 2017

Bibliographic Reference Richmond, Melissa K; Pampel, Fred C; Wood, Randi C; Nunes, Ana P; The impact of employee assistance services on workplace outcomes: Results of a prospective, quasi-experimental study.; Journal of occupational health psychology; 2017; vol. 22 (no. 2); 170-179

Study details

Trial registration number	Non-randomised controlled trial based on propensity score matching
Study start date	Oct-2013
Study end date	Mar-2015
Aim	Prospective test of EAP impact on workplace outcomes. The study assesses the impact of EAP on (1) absenteeism, (2) presenteeism (inability to be productive while at work), and (3) workplace distress at follow-up compared to a matched group of similar employees who do not receive EAP.
Country/geographical location	USA
Setting	Colorado state government
Inclusion criteria	Employees had to indicate consent, provide contact information to be reached for a follow-up interview, and provide sufficient baseline data so that information from the online survey could be used to match to intervention employees.
Exclusion criteria	Not reported
Method of randomisation	Not a randomised study
Method of allocation concealment	Not reported - not described as a randomised or blinded study
Unit of allocation	Individual
Unit of analysis	Individual
Statistical method(s) used to analyse the data	Balance between study arms was assessed via comparison of within-group means and standard deviations for pretest variables, and t-tests to identify statistically significant differences. Cohen's d is calculated for each variable to show the size of the difference in standard units. To test intervention effect linear regression models for were used for the

	scaled outcome variables of presenteeism and workplace distress and negative binomial regression for the count outcome of absenteeism. Cohen's d values for linear regressions and incident rate ratios for negative binomial regression indicate the size of the treatment effect.
Attrition	156/239 (65%) in the intervention arm and 188/340 (55%) in the control arm provided pre-post data and were included in the analysis.
Assessments and timepoints	Assessments via phone or online; Self-report undertaken were: Workplace outcomes three 5-item scales from the Chestnut Global Partners Workplace Outcome Suite: Absenteeism, Presenteeism, and Workplace Distress; Preintervention demographic and behavioural health characteristics; A variant of the depression scale of the Patient Health Questionnaire (PHQ-8); Symptoms of generalized anxiety disorder (GAD) were assessed using GAD-2; The Seeking Social Support scale from the Revised Ways of Coping measure. Recruitment was in waves (3 waves over a 10 month period) with the approximate duration between enrolment follow-up between 5 to 8 months and the final data collection occurring February/March 2015.
Study limitations (author)	A quasi-experimental design so any unmeasured differences between the groups are not controlled for and may introduce bias; Approximately 22% of clients seeking EAP agreed to participate in the study with EAP in this study not offered to those in significant distress and only 10% of state employees completing the initial survey introducing potential bias and limiting the generalizability of the study; Self-report used. Sample and setting may limit study findings generalizability.
Study limitations (reviewer)	No randomisation; No allocation concealment or blinding; Use of self-report and no objective measures
Source of funding	Employee Assistance Research Foundation

Study arms

Employee Assistance Program (N = 156)

Colorado State Employee Assistance Program (C-SEAP); Services provided are designed to maintain and strengthen mental health and productivity through assessment, short-term counselling, and referral. C-SEAP counsellors are trained in administering substance use and mental health screening tools, and in using motivational interviewing techniques to raise employee awareness and motivate toward positive change.

Control (N = 188)

Non-EAP matched controls based on propensity score matching to select the comparison group cases for follow-up.

Characteristics

Study-level characteristics

Characteristic	Study (N = 344)
Gender	71
Nominal	
Ethnicity	NR
Nominal	
% non-Hispanic	81
Nominal	
% White	87
Nominal	
Education (Average years of education)	16 (1.74)
Mean (SD)	

Arm-level characteristics

Characteristic	Employee Assistance Program (N = 156)	Control (N = 188)
Age	n = 155 ; % = 99	n = NA ; % = NA
Sample size		
Age	44.12 (10.5)	45.06 (9.8)

Characteristic	Employee Assistance Program (N = 156)	Control (N = 188)
Mean (SD)		

Outcomes

Study timepoints

- Baseline
- 12 month (Time varied based on wave of enrolment, date within the wave of enrolment and when followed up. The range of follow-up was outlined as <2 months to >12 months.)

Employee Outcomes - Presenteeism

Outcome	Employee Assistance Program , Baseline, N = 152	Employee Assistance Program , 12 month, N = 152	Control, Baseline, N = 188	Control, 12 month, N = 188
Presenteeism	2.9 (1.2)	2.3 (1.2)	2.8 (1.2)	2.5 (1.1)
Mean (SD)				

Presenteeism - Polarity - Lower values are better.

Chestnut Global Partners Workplace Outcome Suite: Absenteeism, Presenteeism, and Workplace Distress. The Absenteeism scale assesses the number of hours employees were taken away from work due to their personal/work problems.

Employee Outcomes - Absenteeism

Outcome	Employee Assistance Program , Baseline, N = 155	Employee Assistance Program , 12 month, N = 155	Control, Baseline, N = 188	Control, 12 month, N = 188
Absenteeism	15.2 (28.4)	10.7 (20.9)	13 (23.3)	16.9 (31.4)
Mean (SD)				

Absenteeism - Polarity - Lower values are better.

Chestnut Global Partners Workplace Outcome Suite: Absenteeism, Presenteeism, and Workplace Distress. The Absenteeism scale assesses the number of hours employees were taken away from work due to their personal/work problems.

Employee Outcomes - Workplace distress

Outcome	Employee Assistance Program , Baseline, N = 150	Employee Assistance Program , 12 month, N = 150	Control, Baseline, N = 188	Control, 12 month, N = 188
Workplace distress	2.7 (1.1)	2.4 (1.2)	2.7 (1.2)	2.5 (1.2)
Mean (SD)				

Workplace distress - Polarity - Lower values are better.

Chestnut Global Partners Workplace Outcome Suite: Absenteeism, Presenteeism, and Workplace Distress. The Absenteeism scale assesses the number of hours employees were taken away from work due to their personal/work problems.

Critical appraisal - ROBINS-I: a tool for assessing risk of bias in non-randomised studies of interventions.

Employee Outcomes-Presenteeism-Presenteeism-Mean SD-Employee Assistance Program -Control-t12

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Moderate <i>(Authors highlight that approximately 22% of clients seeking EAP agreed to participate in the study. Anecdotally, C-SEAP staff indicated that they did not present the study to employees who were in significant distress at the initial phone call. Only an estimated 10%</i>

Section	Question	Answer
		<i>of state employees from participating departments completed the initial survey used in the matching.)</i>
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Between 35% to 45% of participants did not provide pre-post data and this is not accounted for in analysis undertaken)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Self report measures utilised and no blinding)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate <i>(Authors highlight that approximately 22% of clients seeking EAP agreed to participate in the study. Anecdotally, C-SEAP staff indicated that they did not present the study to employees who were in significant distress at the initial phone call. Only an estimated 10% of state employees from participating departments completed the initial survey used in the matching; Between 35% to 45% of participants did not provide pre-post data and this is not accounted for in analysis undertaken; Self report measures utilised and no blinding)</i>

Employee Outcomes-Absenteeism-Absenteeism-Mean SD-Employee Assistance Program -Control-t12

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low

Section	Question	Answer
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Moderate <i>(Authors highlight that approximately 22% of clients seeking EAP agreed to participate in the study. Anecdotally, C-SEAP staff indicated that they did not present the study to employees who were in significant distress at the initial phone call. Only an estimated 10% of state employees from participating departments completed the initial survey used in the matching.)</i>
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Between 35% to 45% of participants did not provide pre-post data and this is not accounted for in analysis undertaken)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Self report measures utilised and no blinding)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate <i>(Authors highlight that approximately 22% of clients seeking EAP agreed to participate in the study. Anecdotally, C-SEAP staff indicated that they did not present the study to employees who were in significant distress at the initial phone call. Only an estimated 10% of state employees from participating departments completed the initial survey used in the matching; Between 35% to 45% of participants did not provide pre-post data and this is not accounted for in analysis undertaken; Self report measures utilised and no blinding)</i>

EmployeeOutcomes-Workplacedistress-Workplacedistress-MeanSD-Employee Assistance Program -Control-t12

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Moderate <i>(Authors highlight that approximately 22% of clients seeking EAP agreed to participate in the study. Anecdotally, C-SEAP staff indicated that they did not present the study to employees who were in significant distress at the initial phone call. Only an estimated 10% of state employees from participating departments completed the initial survey used in the matching.)</i>
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Between 35% to 45% of participants did not provide pre-post data and this is not accounted for in analysis undertaken)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Self report measures utilised and no blinding)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate <i>(Authors highlight that approximately 22% of clients seeking EAP agreed to participate in</i>

Section	Question	Answer
		<i>the study. Anecdotally, C-SEAP staff indicated that they did not present the study to employees who were in significant distress at the initial phone call. Only an estimated 10% of state employees from participating departments completed the initial survey used in the matching; Between 35% to 45% of participants did not provide pre-post data and this is not accounted for in analysis undertaken; Self report measures utilised and no blinding)</i>

Study arms

Employee Assistance Program (N = 156)

Brief name	Employee Assistance Program
Rationale/theory/Goal	Prospective test of EAP impact on absenteeism, presenteeism and workplace distress. EAPs are widely used to help employees experiencing personal or work-related difficulties that impact work productivity but there is a lack of rigorous research on the effectiveness of EAP to improve work-related outcomes.
Materials used	Colorado State Employee Assistance Program (C-SEAP); C-SEAP counsellors; Incentives for completion of online survey at baseline (raffle for \$100 gift card) and \$20 gift card for completion of the intake survey, and \$20 gift card for completion of the follow-up survey.
Procedures used	Majority of those in the EAP arm self-referred; Those selected and matched undertook the EAP (specific intervention content not outlined) and those in the control arm completed survey only.
Provider	Colorado State Employee Assistance Program (C-SEAP) counsellors - approximately 11 licensed staff members and 5–7 graduate student interns provide services
Method of delivery	The staff as a group engage in biweekly peer supervision; and staff receive continuing professional education on a variety of relevant topics.
Setting/location of intervention	The program operates out of nine offices across the state of Colorado.
Intensity/duration of the intervention	Not specified by activity. Authors highlight that employees engage as a group in biweekly peer supervision
Tailoring/adaptation	Not specified

Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

Colorado State Employee Assistance Program (C-SEAP); Services provided are designed to maintain and strengthen mental health and productivity through assessment, short-term counselling, and referral. C-SEAP counsellors are trained in administering substance use and mental health screening tools, and in using motivational interviewing techniques to raise employee awareness and motivate toward positive change.

Control (N = 188)

Brief name	Control
Rationale/theory/Goal	Control arm to allow the prospective test of EAP impact on absenteeism, presenteeism and workplace distress.
Materials used	Colorado State Employee Assistance Program (C-SEAP); C-SEAP counsellors; Incentives for completion of online survey at baseline (raffle for \$100 gift card) and \$20 gift card for completion of the intake survey, and \$20 gift card for completion of the follow-up survey.
Procedures used	Not specified
Provider	Not specified
Method of delivery	Not specified
Setting/location of intervention	Not specified
Intensity/duration of the intervention	Not specified
Tailoring/adaptation	Not specified
Unforeseen modifications	Not reported

Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

Non-EAP matched controls based on propensity score matching to select the comparison group cases for follow-up.

D.40 Sakuraya 2020

Bibliographic Reference Sakuraya, Asuka; Shimazu, Akihito; Imamura, Kotaro; Kawakami, Norito; Effects of a Job Crafting Intervention Program on Work Engagement Among Japanese Employees: A Randomized Controlled Trial.; *Frontiers in psychology*; 2020; vol. 11; 235

Study details

Trial registration number	UMIN Clinical Trials Registry (www.umin.ac.jp/ctr/) identifier UMIN000026668.
Study start date	Apr-2017
Study end date	Nov-2017
Aim	The study sought to investigate the effectiveness of a job crafting intervention program on work engagement and job crafting among Japanese employees.
Country/geographical location	Japan
Setting	Six workplaces (five private companies [2 in service industry and 3 in manufacturing industry] and one public elementary school).
Inclusion criteria	Inclusion criteria: currently employed and could participate in the intervention (two workshops).
Exclusion criteria	Not specified
Method of randomisation	Using stratified permuted-block randomization participants were stratified into eight strata according to the workplace to which they belonged.

Method of allocation concealment	An independent researcher generated the stratified permuted-block random table. An independent research assistant conducted enrolment and assignment. The stratified permuted-block random table, was password-protected, was blinded to the authors. Only the research assistant had access to it during the process of random allocation of participants.
Unit of allocation	By workplace (group)
Unit of analysis	Individual
Statistical method(s) used to analyse the data	Mixed-model for repeated measures conditional growth model analysis was conducted using a group (intervention and control) by time (baseline, 3-month, and 6-month follow-up) interaction as an indicator of intervention effect. Intention-to-treat analysis (ITT) was used. If these mixed models did not converge, a fixed model was used. As a sensitivity analysis, a mixed model for repeated measures analysis of variance model analysis was conducted. Effect sizes (95% CIs) were calculated using Cohen's d only among those who completed the questionnaire at 3- and 6-month follow-up.
Attrition	118/138 (86%) and 99/138 (71%) of participants randomised to the intervention arm provided pre and post data at 3 months and 6 months respectively. 131/143 (92%) and 124/138 (87%) of participants randomised to the control arm provided pre and post data at 3 months and 6 months respectively.
Assessments and timepoints	Data was collected at baseline, 3-months and 6 months. Assessments undertaken were self-report: Japanese version of the Utrecht Work Engagement Scale (UWES), Job crafting using a scale developed by Sekiguchi et al. (2014), and demographic characteristics.
Study limitations (author)	The study did not utilize a stratified permuted-block randomization into lower or higher levels of job crafting subgroups at baseline which could have led to biased assignment of the participants into the intervention and the control groups. Participants recruited were predominantly well educated which may impact their ability to learn the job crafting intervention which may impact the generalizability of findings. The sample size achieved (N = 281) was less than the estimated sample size (N=352) needed to detect an effect size of 0.3 or greater for work engagement so the study had lower statistical power. The optional homework task (reflection sheet describing their job crafting plan) was completed by 5% of participants which may have weakened the effect of the intervention. Dropout rates at 6-month follow-up were 28.3% in the intervention group and 13.3% in the control group which may have led to a dropout bias. Potential confounding as control group participants could get information about the job crafting intervention program from participants in the intervention group, since they worked in the same workplace potentially weakening the intervention effect. Self-report measures were used which could be impacted by participants' perceptions or situational factors introducing potential bias.
Study limitations (reviewer)	Potential intervention confounding as control and intervention participants work together and have the potential to share intervention knowledge. Study may be underpowered to detect an intervention effect as it did not achieve the estimated sample size. Attrition in the intervention arm was >25% which is a potential source of bias.

Source of funding Occupational Health Promotion Foundation (H28) and Health Labor Sciences Research Grant (H28-Labor-General-004).

Study arms

Job crafting (N = 138)

Wait-list (N = 143)

Characteristics

Arm-level characteristics

Characteristic	Job crafting (N = 138)	Wait-list (N = 143)
Age (years)	35.65 (8.34)	37.49 (9.05)
Mean (SD)		
Gender (% Female)	40.6	39.2
Nominal		
Ethnicity	NR	NR
Nominal		

Outcomes

Study timepoints

- 6 month (After the intervention)

Employee outcomes

Outcome	Job crafting, 6 month, N = 138	Wait-list, 6 month, N = 143
Work engagement Using Utrecht Work Engagement Scale (SD calculated by reviewer)	2.83 (1.17)	2.98 (1.2)
Mean (SD)		
Work engagement Using Utrecht Work Engagement Scale (SD calculated by reviewer)	2.83 (0.1)	2.98 (0.1)
Standardised Mean (SE)		

Work engagement - Polarity - Higher values are better.

Critical appraisal - Cochrane Risk of Bias tool (RoB 2.0) Normal RCT

Work engagement - Job crafting vs Wait-list (6 months follow-up)

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low
Domain 2b: Risk of bias due to deviations from the intended interventions (effect of adhering to intervention)	Risk of bias judgement for deviations from the intended interventions (effect of adhering to intervention)	Low
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns (<i>Self-reported outcome</i>)
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Study arms

Job crafting (N = 138)

Brief name	Job crafting
Rationale/theory/Goal	The study sought to investigate the effectiveness of a job crafting intervention program on work engagement and job crafting among Japanese employees
Materials used	Two 120-minute job crafting sessions; Pretest-posttest study to collect participants' opinions; Discussion with occupational health professionals; Booklet job crafting cases; post session e-mail or letter follow-up aimed to help participant session recall
Procedures used	Two 120-minute job crafting sessions conducted by first author at monthly intervals; Based on participants' opinions collected via pretest-posttest study and discussion with occupational health professionals two improvements to job were made; job crafting cases were collected in a booklet and distributed to the participants during the first session; e-mail or letter follow-up after the first and second session to help participants session recall. After each session an e-mail or letter reflecting session and work to review their job crafting plan was sent. The participants who could not attend were given the material from the session and asked to create their job crafting plan and conduct it.
Provider	Lead author - Department of Public Health, School of Medicine
Method of delivery	Face-to-face and online; unclear if this is group based or not.
Setting/location of intervention	Not specified - in the workplace and at home
Intensity/duration of the intervention	Two 120-minute job crafting sessions conducted at monthly intervals with email/letter follow-up of session.
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Change to Protocol post trial registration. Originally only regular employees were to be allocated but this was changed due to an anticipated of a low participation rate. Subgroup analyses were conducted separately for respondents who had high scores (higher than 5) and low scores (5 or lower score) of job crafting at baseline, which was not planned before.

Two 120-minute job crafting sessions conducted by first author at monthly intervals.

Wait-list (N = 143)

Brief name	Waiting list control participants received no intervention from baseline to the 6-month follow-up survey. After the 6-month follow-up, the first author administered the same job crafting intervention program.
Rationale/theory/Goal	The study sought to investigate the effectiveness of a job crafting intervention program on work engagement and job crafting among Japanese employees
Materials used	Not applicable - waiting list control
Procedures used	Control group received no intervention from baseline to the 6-month follow-up survey. After the 6-month follow-up, the first author administered the same job crafting intervention program.
Provider	Lead author - Department of Public Health, School of Medicine
Method of delivery	Not applicable - waiting list control
Setting/location of intervention	Not specified - in the workplace and at home
Intensity/duration of the intervention	Two 120-minute job crafting sessions conducted at monthly intervals with email/letter follow-up of session.
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

D.41 Schelvis, 2017

Bibliographic Reference Schelvis, Roosmarijn M. C. Wiezer, Noortje M. van der Beek, Allard J. Twisk, Jos W. R. Bohlmeijer, Ernst T. Hengel, Karen M. Oude; The effect of an organizational level participatory intervention in secondary vocational education on work-related health outcomes: results of a controlled trial; BMC PUBLIC HEALTH; 2017; vol. 17

Study details

Trial registration number	Netherlands Trial Register (NTR3284).
Study start date	Jun-2011
Study end date	Jun-2014
Aim	Evaluate the long term effectiveness of an organizational level, primary preventive, participatory intervention on need for recovery and vitality.
Country/geographical location	Netherlands
Setting	Vocational school
Inclusion criteria	All teaching and non-teaching (i.e. educational and administrative support staff) employees and their managers in these departments were invited to participate in the study
Exclusion criteria	Employees who worked within the school, but did not teach at a secondary vocational level were excluded
Method of randomisation	Non-randomised trial
Method of allocation concealment	Blinding of the participants and intervention providers was impossible due to the participatory nature of the intervention. Allocation concealment not specified
Unit of allocation	Department within selected school
Unit of analysis	Participant
Statistical method(s) used to analyse the data	Intention to treat; Baseline differences between the intervention and control group were checked via regression analyses for all outcomes; independent samples t-tests for all continuous variables and Pearson Chi-square tests for the dichotomous variable describing individual characteristics of the sample; Selective attrition was checked by conducting loss to follow-up analyses. To assess the effect of the intervention, linear mixed models with a two level

	structure were used. For organizational efficacy data linear regression analyses was conducted adjusting for the score on first follow-up measurement and for possible confounders. Two additional analysis undertaken: 1) Time and the interaction between group and time were added to the adjusted mixed model in order to investigate whether the intervention effect was different over time; 2) Comparison of high compliers in needs assessment phase (participation in two or three of the intervention's first phase elements) to the control group on the primary and secondary outcomes, while correcting for baseline values and covariates.
Attrition	ITT undertaken. 210/356 (59%) of randomized participants provided pre and 12 month follow-up data; 196/356 (55%) provided data at 24 months follow-up.
Assessments and timepoints	Baseline, 12 months, 24 months; Self-report measures (Dutch Perception and Evaluation of Work Questionnaire; Utrecht Work Engagement Scale-9; Job Content Questionnaire (JCQ); Job Content Questionnaire (JCQ); Dutch Well-being Checklist for Education; Work Ability Index (WAI); Netherlands Working Conditions Survey 2010; Dutch NOVA-WEBA questionnaire; Occupational Self-Efficacy Scale; Organizational Efficacy Scale).
Study limitations (author)	Loss to follow-up and drop out due to the termination of employment contracts were quite high impacting statistical power, significant differences between the intervention. and control groups at baseline (this was corrected for in the analysis); Lack of randomization in this controlled trial so unknown confounding variables could be unevenly distributed over groups, threatening the internal validity.
Study limitations (reviewer)	Lack of randomization and potential uneven distribution of confounding factors; differences in participants across arms at baseline although this was corrected for in the analysis; self-report measures used; high attrition from baseline.
Source of funding	The Netherlands Organization for Health Research and Development (ZonMw).

Study arms

Heuristic Method (N = 311)

311 individuals in 2 departments comprising 24 teams.

Control (N = 294)

294 individuals in 2 departments comprising 24 teams.

Characteristics

Arm-level characteristics

Characteristic	Heuristic Method (N = 311)	Control (N = 294)
Age (years)	52.5 (8.5)	48.7 (9.5)
Mean (SD)		
Gender (% Female)	65.2	43.4
Nominal		
Ethnicity	NR	NR
Nominal		

Outcomes

Study timepoints

- 24 month (After the intervention)

Employee outcomes

Outcome	Heuristic Method, 24 month, N = 311	Control, 24 month, N = 294
Mental wellbeing Using the Utrecht Work Engagement Scale-9 - vigour subscale.	n = 101 ; % = 32.5	n = 95 ; % = 32.3
Sample size		
Mental wellbeing Using the Utrecht Work Engagement Scale-9 - vigour subscale.	4.1 (1.2)	4.3 (1)
Mean (SD)		

Outcome	Heuristic Method, 24 month, N = 311	Control, 24 month, N = 294
Job stress Using the Dutch Perception and Evaluation of Work Questionnaire - Need for recovery	n = 101 ; % = 32.5	n = 94 ; % = 32
Sample size		
Job stress Using the Dutch Perception and Evaluation of Work Questionnaire - Need for recovery	45.2 (33.5)	43 (33)
Mean (SD)		
job satisfaction Using 2 items form Netherlands Working Conditions Survey 2010	n = 99 ; % = 31.8	n = 91 ; % = 31
Sample size		
job satisfaction Using 2 items form Netherlands Working Conditions Survey 2010	3.3 (0.8)	3.6 (0.7)
Mean (SD)		
productivity Using Work Ability Index	n = 99 ; % = 31.8	n = 91 ; % = 31
Sample size		
productivity Using Work Ability Index	15.3 (2.3)	15.4 (2.1)
Mean (SD)		

Mental wellbeing - Polarity - Higher values are better.

Job stress - Polarity - Lower values are better.

job satisfaction - Polarity - Higher values are better.

productivity - Polarity - Higher values are better.

Critical appraisal - ROBINS-I: a tool for assessing risk of bias in non-randomised studies of interventions.

Mental wellbeing - Heuristic Method vs Control (24 month follow-up)

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (<i>Self-report outcomes</i>)
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate (<i>Self-reported outcomes</i>)

Job stress - Heuristic Method vs Control (24 month follow-up)

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (<i>Self-report outcomes</i>)
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate (<i>Self-reported outcomes</i>)

Job satisfaction - Heuristic Method vs Control (24 month follow-up)

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low

Section	Question	Answer
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (<i>Self-report outcomes</i>)
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate (<i>Self-reported outcomes</i>)

Productivity - Heuristic Method vs Control (24 month follow-up)

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (<i>Self-report outcomes</i>)

Section	Question	Answer
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate (<i>Self-reported outcomes</i>)

Study arms

Heuristic Method (N = 311)

Brief name	Heuristic Method
Rationale/theory/Goal	The aim of the current study was to evaluate the effectiveness of an organizational level, participatory intervention on need for recovery and vitality in educational workers. It was hypothesized that participating in the intervention needs assessment would result directly in participant's increased occupational self-efficacy; Implementation of intervention activities would increase organizational efficacy and job resources and reduce job demands, these are the expected intermediate effects; And if the balance between job demands and job resources is restored, distal effects are supposedly to be found on work-related stress constructs and well-being constructs.
Materials used	Heuristic Method facilitator; ten one-hour interviews; digital open-ended questionnaire for all workers; Self-report measures (Dutch Perception and Evaluation of Work Questionnaire; Utrecht Work Engagement Scale-9; Job Content Questionnaire (JCQ); Job Content Questionnaire (JCQ); Dutch Well-being Checklist for Education; Work Ability Index (WAI); Netherlands Working Conditions Survey 2010; Dutch NOVA-WEBA questionnaire; Occupational Self-Efficacy Scale; Organizational Efficacy Scale).
Procedures used	Participatory action approach applied at the organizational level. The intervention consisted of two 12-month phases. 1) a phase of needs assessment (where staff and teachers developed actions to 'work happily and healthily', under supervision of an HM facilitator; A participatory work group was formed; HM facilitator then led three iterative steps to complete the needs assessment by: (i) approximately ten one-hour interviews with typical optimistic and typical critical teachers and staff; (ii) a digital open-ended questionnaire for all workers; and (iii) group sessions with all teams, chaired by members of the participatory group). 2) an implementation phase (where intervention activities were implemented by the management teams at both schools).

Provider	Heuristic Method facilitator developed the intervention with management staff in the intervention school staff (Vocational Education and Training schools) who then implemented the intervention with optional assistance by Heuristic Method facilitator or temporary consultant.
Method of delivery	Face to face group work in the needs assessment phase followed by management teams implementing the intervention actions in an implementation phase with optional assistance by Heuristic Method facilitator or temporary consultant.
Setting/location of intervention	School setting
Intensity/duration of the intervention	The intervention consisted of two 12-month phases: 1) a phase of needs assessment (HM facilitator then led three iterative steps to complete the needs assessment by: (a) approximately ten one-hour interviews with typical optimistic and typical critical teachers and staff; (b) a digital open-ended questionnaire for all workers; and (c) group sessions with all teams, chaired by members of the participatory group); and 2) an implementation phase.
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

311 individuals in 2 departments comprising 24 teams - organizational level, primary preventive, participatory intervention.

Control (N = 294)

Brief name	Control
Rationale/theory/Goal	Control to facilitate the evaluation of the effectiveness of an organizational level, participatory intervention on need for recovery and vitality in educational workers.
Materials used	Digital open-ended questionnaire for all workers; Self-report measures (Dutch Perception and Evaluation of Work Questionnaire; Utrecht Work Engagement Scale-9; Job Content Questionnaire (JCQ); Job Content Questionnaire

	(JCQ); Dutch Well-being Checklist for Education; Work Ability Index (WAI); Netherlands Working Conditions Survey 2010; Dutch NOVA-WEBA questionnaire; Occupational Self-Efficacy Scale; Organizational Efficacy Scale).
Procedures used	Matched control - condition not specified
Provider	Matched control - conditions not specified
Method of delivery	Control condition not specified
Setting/location of intervention	School setting
Intensity/duration of the intervention	Control condition not specified
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

294 individuals in 2 departments comprising 24 teams.

D.42 Song 2019

Bibliographic Reference Song, Zirui; Baicker, Katherine; Effect of a Workplace Wellness Program on Employee Health and Economic Outcomes: A Randomized Clinical Trial.; JAMA; 2019; vol. 321 (no. 15); 1491-1501

Study details

Study design	Cluster randomised controlled trial
---------------------	-------------------------------------

Trial registration number	ClinicalTrials.gov Identifier: NCT03167658
Study start date	Jan-2015
Study end date	31-Aug-2016
Aim	To evaluate the effect of a workplace wellness program on health and economic outcomes over 18 months.
Country/geographical location	US
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Sector: Private • Industry: Retail • Organisation size: Large • Contract type: mixed (full-time salaried, full-time hourly, part-time hourly) • Seniority: mixed • Income: mixed (\$9981 to \$49,340 per year)
Inclusion criteria	Employed for 13 weeks pre-randomisation
Exclusion criteria	Sites that were geographically remote or had substantially different insurance coverage.
Method of randomisation	Computer-generated random numbers
Method of allocation concealment	Not reported
Unit of allocation	Cluster (worksites)

Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • The study was powered assuming a power of 0.8 and an ICC of 0.045. They estimated 100 employees per worksite. • Intention to treat was reported using modelling. • A standard 2-stage least squares instrumental variables approach was used to estimate the local average treatment effect of program participation, with randomization into treatment as the instrument for participation.
Attrition	<p>Out of 4037 individuals randomised to the treatment group, 1080 participants responded to the survey (26.8%).</p> <p>Out of the 4106 individuals randomised to the control arm, 1020 participants responded to the survey (24.8%).</p>
Assessments and timepoints	<p>The following assessments were carried out at these timepoints:</p> <ul style="list-style-type: none"> • Endpoint (18 months) <p>The following outcomes were carries out:</p> <ul style="list-style-type: none"> • PHQ-2 score of 3 or above (%) • SF-8 score – physical summary score. • SF-8 score – mental summary score. • Unmanaged stress (%) • Stress at work (%)
Study limitations (author)	<ul style="list-style-type: none"> • May not be generalisable to other workplace settings and populations. • The ability to detect treatment effects was limited by statistical power, despite prespecified strategies to maximize power. • Not all employees contributed data for every outcome. • This study was unable to disentangle effects of particular elements of the wellness program, nor assess the effects of a differently configured wellness program.
Study limitations (reviewer)	<ul style="list-style-type: none"> • No additional study limitations

Source of funding	<ul style="list-style-type: none"> • National Institute on Aging • National Bureau of Economic Research • RobertWood Johnson Foundation • Abdul Latif Jameel Poverty Action Lab North America • BJ's Wholesale Club provided in-kind logistical and personnel support for the fielding of the wellness program.
--------------------------	--

Study arms

<p>Wellness program (N = 4037)</p> <p>20 worksites were randomised</p>
<p>Assessment only (N = 4106)</p> <p>20 worksites randomised</p>

Characteristics

Arm-level characteristics

	Wellness program (N = 4037)	Assessment only (N = 4106)
Age		
Mean/SD	38.8 (0.7)	38.3 (0.5)
Gender		
Men		
Sample Size	n = 2104 ; % = 53.7	n = 2151 ; % = 54.5
Women		

	Wellness program (N = 4037)	Assessment only (N = 4106)
Sample Size	n = 1933 ; % = 46.3	n = 1955 ; % = 45.5
Ethnicity		
Black		
Sample Size	n = 797 ; % = 19.8	n = 1004 ; % = 20.1
White		
Sample Size	n = 2601 ; % = 56.3	n = 2203 ; % = 57.9
Hispanic		
Sample Size	n = 402 ; % = 17.9	n = 720 ; % = 17.1
Other		
Sample Size	n = 237 ; % = 6	n = 179 ; % = 5
Annual earnings (\$)		
Full-time salaried		
Sample Size	n = 232 ; % = 15.5	n = 222 ; % = 15.2
Mean/SD	49340 (1117)	47669 (698)
Full-time hourly		
Sample Size	n = 700 ; % = 44.9	n = 743 ; % = 47

	Wellness program (N = 4037)	Assessment only (N = 4106)
Mean/SD	25727 (683)	24528 (436)
Part-time hourly		
Sample Size	n = 960 ; % = 39.6	n = 965 ; % = 37.8
Mean/SD	10301 (181)	9981 (101)

Outcomes

Study timepoints	18 (month) 18 months from the beginning of the intervention
-------------------------	---

Employee outcomes

	Wellness program	Assessment only
	18 (month)	18 (month)
	N = 4037	N = 4106
Quality of life (0 - 100) Using SF-8 Mental summary <i>Polarity: Higher values are better</i>		
Sample Size	n = 1080 ; % = 26.8	n = 1020 ; % = 24.8
Mean/SD	50.9 (9.1)	51.2 (9.1)
Job stress		

	Wellness program	Assessment only
	18 (month)	18 (month)
	N = 4037	N = 4106
Measured using item 'How often have you found yourself stressed or worried about problems as work?'. Answers 'sometimes', 'often' or 'fairly often'. <i>Polarity: Lower values are better</i>		
Sample Size	n = 1080 ; % = 26.8	n = 1020 ; % = 24.8
Mean/SD	56.2 (49.6)	55.7 (49.7)

Quality of life - Wellness program vs Assessment only - 18-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low

Section	Question	Answer
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (<i>Outcome measure was self-reported</i>)
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Job stress - Wellness program vs Assessment only - 18-month follow up.

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (<i>Outcome measure was self-reported</i>)
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low

Section	Question	Answer
Overall bias	Risk of bias judgement	Some concerns (Self-reported outcome)

Study arms

Wellness programme (N = 4037)	
Brief name	Training focused on nutrition, physical activity, stress reduction and related topics [page 1491]
Rationale/theory/Goal	Workplace wellness programs have become increasingly popular as employers have aimed to lower health care costs and improve employee health and productivity. Workplace wellness programs tend to focus on modifiable risk factors of disease, such as nutrition, physical activity, and smoking cessation. [page 1492]
Materials used	Modules included modest incentives for participation, most commonly a \$25 BJ's gift card for completing a particular module. Total potential incentives across the program averaged about \$250. [page 1492]
Procedures used	The wellness program was delivered as 8 modules. Each module focused on key elements of health and wellness, including nutrition, physical activity, stress reduction, and prevention. [page 1492]
Provider	<ul style="list-style-type: none"> The intervention was designed and implemented by an established wellness vendor - Wellness Workdays. Programming content was delivered by registered dietitians. <p>[page 1492]</p>
Method of delivery	Individual and team-based activities and challenges [page 1492]
Setting/location of intervention	Not reported
Intensity/duration of the intervention	The wellness program comprised 8 modules implemented over 18 months, with each module lasting 4 to 8 weeks. [page 1492]

Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None
No intervention (N = 4106)	
Brief name	No wellness programme was provided [page 1492]
Rationale/theory/Goal	Not reported
Materials used	No applicable
Provider	No applicable
Method of delivery	No applicable
Setting/location of intervention	No applicable
Intensity/duration of the intervention	No applicable
Tailoring/adaptation	No applicable

Unforeseen modifications	No applicable
Planned treatment fidelity	No applicable
Actual treatment fidelity	No applicable
Other details	None

D.43 Svensson, 2014

Bibliographic Reference Svensson, Bengt Hansson, Lars; Effectiveness of Mental Health First Aid Training in Sweden. A Randomized Controlled Trial with a Six-Month and Two-Year Follow-Up; PLOS ONE; 2014; vol. 9 (no. 6)

Study details

Trial registration number	Not reported
Aim	This study investigates if MHFA training in a Swedish context provides a sustained improvement in knowledge about mental disorders, a better ability to be helpful in contacts with people who are ill and if it changes attitudes in a positive direction.
Country/geographical location	Sweden
Setting	Swedish social insurance agency, employment agencies, social services, schools, police departments, correctional treatment units, rescue services and recreation centers was offered to participate in MHFA training.
Inclusion criteria	To have completed the MHFA course and to have been in contact with a person with a mental disorder after its completion

Exclusion criteria	Not specified
Method of randomisation	The coordinator created a list of participants who had given informed consent and completed the questionnaires. Each participant was given a specific ID-number on the list, which was then sent to one of the researchers who performed the randomization procedure by using the Random Integers option at the http://random.org website. The participants were anonymous to the researchers.
Method of allocation concealment	The participants were anonymous to the researchers during the process of randomization and subsequent allocation. The precise method of concealment is not specified but the anonymization by ID number and subsequent randomization via website is likely to have allowed blinding and allocation concealment.
Unit of allocation	Individual
Unit of analysis	Individual
Statistical method(s) used to analyse the data	Intention to treat analyses; Time by group differences were analysed by ANOVA Repeated Measures. Differences in demographic variables were investigated by Chi ² - analysis for dichotomous variables and with independent samples T-test for continuous variables.
Attrition	277/406 (68%) of participants randomised provided pre and post data at 6 months follow-up and 155/406 (38%) participants at 2 year follow-up.
Assessments and timepoints	Assessment undertaken at baseline, 6 months and at 2 years; Outcomes assessed: readiness to provide actual help to people with mental disorders; if the training led to more: 1. knowledge about mental disorders and their treatment, 2. knowledge about how to behave and act when with a person with a mental disorder, 3. self-confidence in helping a person with a mental disorder, 4. positive attitudes towards people with mental disorders.
Study limitations (author)	Sample not representative of the general public; Generalizability might be limited as majority of the participants had a high level of education and were women; Attrition rate between base-line and six months follow-up was high (32%)
Study limitations (reviewer)	High attrition, Self-reported measures used; Sample impacts generalizability.
Source of funding	Swedish Board of Health and Welfare

Study arms

MHFA (N = 199)

Wait-list (N = 207)

Characteristics

Arm-level characteristics

Characteristic	MHFA (N = 199)	Wait-list (N = 207)
Age (years)	45.6 (10.7)	45.6 (10.3)
Mean (SD)		
Gender (% Female)	75.9	78.3
Nominal		
Ethnicity (Born in Sweden %)	88.4	93.2
Nominal		

Outcomes

Study timepoints

- 6 month (After the intervention)

Employee outcomes

Outcome	MHFA, 6 month, N = 199	Wait-list, 6 month, N = 207
Mental health literacy	2.7 (0.6)	2.4 (0.7)
Reported as confidence in providing help.		
Mean (SD)		

Mental health literacy - Polarity - Higher values are better.

Critical appraisal - Cochrane Risk of Bias tool (RoB 2.0) Normal RCT

Mental health literacy - MHFA vs Wait-list (6 months follow-up)

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low
Domain 2b: Risk of bias due to deviations from the intended interventions (effect of adhering to intervention)	Risk of bias judgement for deviations from the intended interventions (effect of adhering to intervention)	Low
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Some concerns (<i>Self-reported outcome</i>)
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Study arms

Mental Health First Aid training (MHFA) (N = 199)

Brief name	Mental Health First Aid training (MHFA)
Rationale/theory/Goal	MHFA was developed in Australia for improving mental health literacy among the general public and also for giving skills to provide initial help to people in mental health crisis situations and for those with on-going mental health problems. This study investigates if MHFA training in a Swedish context provides a sustained improvement in knowledge about mental disorders, a better ability to be helpful in contacts with people who are ill and if it changes attitudes in a positive direction.
Materials used	An Australian team taught three Swedish main instructors and the complete MHFA program was translated and modified to suit the Swedish context; MHFA manual in Swedish; pre-test assessment; Self-report questionnaires.

Procedures used	All the participants received a MHFA manual in Swedish and attended the twelve hour MHFA course, which was equally spread over two days and taught in five steps: 1: Assess risk of suicide and harm, 2. Listen non-judgmentally, 3. Give reassurance and information, 4. Encourage persons to get appropriate professional help, and 5. Encourage self-help strategies.
Provider	National Centre for Suicide Research and Prevention of Mental Ill-Health (NASP) at the Karolinska Institute in Stockholm; Ministry of Health and Social Affairs in Sweden; An Australian team taught three Swedish main instructors who went on to teach 18 instructors who implemented the training program.
Method of delivery	Group face-to-face; All the participants received a MHFA manual in Swedish and attended the twelve hour course, which was equally spread over two days
Setting/location of intervention	National Centre for Suicide Research and Prevention of Mental Ill-Health (NASP) at the Karolinska Institute in Stockholm
Intensity/duration of the intervention	12-hour course where a first aid approach is taught in five steps. The steps are then applied to depression, anxiety disorders, psychosis and substance use disorder
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

The training includes a 12-hour course where a first aid approach is taught in five steps. The steps are then applied to depression, anxiety disorders, psychosis and substance use disorder.

Wait-list (N = 207)

Brief name	Waiting list control
Rationale/theory/Goal	Waiting list control to facilitate the investigation into if MHFA training in a Swedish context provides a sustained improvement in knowledge about mental disorders, a better ability to be helpful in contacts with people who are ill and if it changes attitudes in a positive direction.

Materials used	Not applicable - waiting list control
Procedures used	Not applicable - waiting list control for 6 months
Provider	National Centre for Suicide Research and Prevention of Mental Ill-Health (NASP) at the Karolinska Institute in Stockholm; Ministry of Health and Social Affairs in Sweden; An Australian team taught three Swedish main instructors who went on to teach 18 instructors who implemented the training program.
Method of delivery	Not applicable - waiting list control
Setting/location of intervention	National Centre for Suicide Research and Prevention of Mental Ill-Health (NASP) at the Karolinska Institute in Stockholm
Intensity/duration of the intervention	Not applicable - waiting list control
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

Waiting list control for 6 months

D.44 Uchiyama 2013

Bibliographic Reference Uchiyama A; Odagiri Y; Ohya Y; Takamiya T; Inoue S; Shimomitsu T; Effect on mental health of a participatory intervention to improve psychosocial work environment: a cluster randomized controlled trial among nurses.; Journal of occupational health; 2013; vol. 55 (no. 3)

Study details

Study design	Cluster randomised controlled trial
Trial registration number	University Hospital Medical Information Network Clinical Trials Registry (UMIN-CTR), the Japanese registry of clinical trials (UMIN000004430)
Aim	To investigate the effect of a participatory intervention aimed at improving the psychosocial work environment, on mental health among nurses.
Country/geographical location	Japan
Setting	<p>Workplace</p> <ul style="list-style-type: none"> • Sector: Private • Industry: Healthcare • Organisation size: Large • Contract type: mix of regular and temporary • Seniority: mix of chief, subchief and general • Income: not reported
Inclusion criteria	None reported
Exclusion criteria	<ul style="list-style-type: none"> • units that were not involved in direct patient care. • units consisting of less than or equal to 3 nurses. • nurses who were on sick leave or maternity leave
Method of randomisation	Not reported
Method of allocation concealment	Not reported
Unit of allocation	Cluster (Unit)

Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • Baseline characteristics compared with the t-test for continuous variables and the chi-square test or Fisher's exact test for categorical variables. • Interaction effects between groups measured using multilevel modelling. • Data were analysed using a generalized linear mixed model for repeated measures. • Paired t-tests were used to test changes in score for each variable in each group. • Analysis of covariance (ANCOVA) was also used to compare scores for each variable at each timepoint.
Attrition	<p>Preintervention questionnaire response rate: 92.4%</p> <p>149 out of 183 (81.4%) in the intervention group and 1980 out of 218 (78.0%) in the control group were included in the analysis</p>
Assessments and timepoints	Mental health symptoms at baseline and at 0 weeks post intervention
Study limitations (author)	<ul style="list-style-type: none"> • possibility of interactions between intervention and control group • no long-term follow-up was conducted. • multi-faceted approach made it difficult to attribute effects to specific aspects of the intervention
Study limitations (reviewer)	<ul style="list-style-type: none"> • lack of information regarding randomisation
Source of funding	Japan Society for the Promotion of Science (JSPS)

Study arms

Participatory intervention (N = 183)

11 units

Control (N = 218)

13 units

Characteristics

Arm-level characteristics

	Participatory intervention (N = 183)	Control (N = 218)
Age Data are for completers only		
Sample Size	n = 148 ; % = 80.9	n = 168 ; % = 77.1
Mean/SD	33 (9.6)	31.7 (9.1)
Gender Data are for completers only		
Sample Size	n = 149 ; % = 81.4	n = 170 ; % = 78
Female		
Sample Size	n = 149 ; % = 100	n = 166 ; % = 97.6
Male		
Sample Size	n = 0 ; % = 0	n = 4 ; % = 2.4
Ethnicity Not reported		
Socio economic status - job position Data are for completers only		

	Participatory intervention (N = 183)	Control (N = 218)
Sample Size	n = 149 ; % = 100	n = 170 ; % = 100
General		
Sample Size	n = 123 ; % = 82.6	n = 146 ; % = 85.9
Subchief and chief		
Sample Size	n = 26 ; % = 17.4	n = 24 ; % = 14.1

Outcomes

Study timepoints	Baseline 0 (week)	Post intervention

Employee outcomes

	Participatory intervention		Control	
	Baseline	0 (week)	Baseline	0 (week)
	N = 183	N = 183	N = 218	N = 218
Mental health symptoms (0-60) Using CES-D <i>Polarity: Lower values are better</i>				
Sample Size	n = 133 ; % = 72.7	n = 133 ; % = 72.7	n = 154 ; % = 70.6	n = 154 ; % = 70.6

	Participatory intervention		Control	
	Baseline	0 (week)	Baseline	0 (week)
	N = 183	N = 183	N = 218	N = 218
Mean/SD	16.1 (9.4)	15.1 (9.7)	15.8 (9.6)	15.2 (8.9)
Work climate (0 - 100) Self-reported - 5 items <i>Polarity: Higher values are better</i>				
Sample Size	n = 148 ; % = 80.9	n = 148 ; % = 80.9	n = 166 ; % = 76.1	n = 166 ; % = 76.1
Mean/SD	60.3 (15.7)	60.5 (16.6)	58.8 (18.2)	57.7 (15.3)

Mental health symptoms - Participatory intervention vs Control - Endpoint

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low

Section	Question	Answer
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (<i>Outcome measure was self-reported</i>)
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low
Overall bias	Risk of bias judgement	Some concerns (<i>Self-reported outcome</i>)

Work climate - Participatory vs Control - Endpoint

Section	Question	Answer
1a. Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
1b. Bias arising from the timing of identification and recruitment of individual participants in relation to timing of randomisation	Risk of bias judgement for the timing of identification and recruitment of individual participants in relation to timing of randomisation	Low
2. Bias due to deviations from intended interventions (If your aim is to assess the effect of assignment to intervention, answer the following questions).	Risk of bias judgement for deviations from intended interventions	Low
3. Bias due to missing outcome data	Risk of bias judgement for missing outcome data	Low
4. Bias in measurement of the outcome	Risk of bias judgement for measurement of the outcome	Some concerns (<i>Outcome measure was self-reported</i>)
5. Bias in selection of the reported result	Risk of bias for selection of the reported result	Low

Section	Question	Answer
Overall bias	Risk of bias judgement	Some concerns (Self-reported outcome)

Study arms

Participatory intervention (N = 183)	
Brief name	Participatory intervention to improve psychosocial work environment [page 173]
Rationale/theory/Goal	Psychosocial work environment has been regarded as one of the risk factors for workers' mental health. Workplace intervention at the organisational level, including the improvement of psychosocial work environment, is identified to be more preferable compared with individual-level intervention because it seems a more preventive, sustaining, and fundamental approach. [page 173]
Materials used	Task sheets were filled out to help identify problems and clarify solutions [page 175]
Procedures used	<p>Intervention phase was focused on active employee participation and based on action planning to improve the work environment.:</p> <ul style="list-style-type: none"> • All members in the intervention units were expected to participate in a series of activities designed to improve the work environment. • Subchief nurses in each intervention unit were appointed as key persons to facilitate activities within their own units. • Individuals interviews were conducted with key persons by the researchers to provide advice, and this was fed back to the unit. • Key persons were required to fill out task sheets after every group meeting to clarify the problems, needs, and progress of their unit and to help plan execution of the activities. • Two months after the intensive intervention period, a booster session was provided to check how activities proceeded in each unit. <p>Development phase:</p>

	<ul style="list-style-type: none"> • Employees identified existing problems and proposed action plans. <p>Implementation phase:</p> <ul style="list-style-type: none"> • Nurses in the intervention group started to improve their psychosocial work environment based on the action plans proposed in the development phase. • Researchers visited the workplaces and observed how their activities proceeded. Problems in the implementation of the plans and barriers to the activities were reported and discussed. <p>[pages 175 and 176]</p>
Provider	Researchers - no further information was reported [page 175 and 176]
Method of delivery	<ul style="list-style-type: none"> • Group meetings • Individual interviews <p>[page 175]</p>
Setting/location of intervention	Unit based [page 175]
Intensity/duration of the intervention	<ul style="list-style-type: none"> • The intervention was implemented during a 6-month period, with an intensive 3 month intervention period followed by a 3 month implementation period. • Group meetings lasted 30 minutes. • 30-minute individual interviews were held 4 times with key persons. <p>[page 175]</p>
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported

Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None
Wait-list control (N = 218)	
Brief name	Wait-list control
Rationale/theory/Goal	Not reported
Materials used	Not applicable
Procedures used	Not applicable
Provider	Not applicable
Method of delivery	Not applicable
Setting/location of intervention	Not applicable
Intensity/duration of the intervention	Not applicable
Tailoring/adaptation	Not applicable
Planned treatment fidelity	Not applicable

Actual treatment fidelity	Not applicable
Other details	Nurses in the wait list control group were invited to the same intervention program after the study was completed. [page 177]

D.45 Van den Heuvel, 2015

Bibliographic Reference van den Heuvel, Machteld; Demerouti, Evangelia; Peeters, Maria C. W; The job crafting intervention: Effects on job resources, self-efficacy, and affective well-being.; Journal of Occupational and Organizational Psychology; 2015; vol. 88 (no. 3); 511-532

Study details

Trial registration number	Not reported
Aim	The study examines the effects of an intervention aimed at implementing and encouraging job crafting behavior at work.
Country/geographical location	Netherlands
Setting	Dutch police district
Inclusion criteria	Not specified
Exclusion criteria	Not specified
Method of randomisation	Not specified - non-randomized trial. Participation in the intervention was voluntary
Method of allocation concealment	Not reported
Unit of allocation	Individual

Unit of analysis	Individual
Statistical method(s) used to analyse the data	General Linear Modelling (GLM) repeated measures to test intervention effects over time (cf. Hypothesis 1 and 2). Two-way repeated measures analyses of variance (RM ANOVAs) using time (pre-[T1] and post-[T2] measurement) by group (intervention vs. control). Time was the within-subject factor, and group was the between-subject factor; and paired sample t-tests were used to examine the differences within groups and within-person differences were analysed via Multilevel analyses using data from weekly questionnaires.
Attrition	39/52 (75%) participants in the intervention arm provided pre and post data; Control group of 47 employees was created by requesting participants to ask a colleague with a similar job to fill in the same questionnaires but it is not clear how many completed pre-post.
Assessments and timepoints	Participants completed a survey prior to the intervention (T1, pre-measure) and 1–2 weeks after the intervention (T2, post-measure). All participants received an online feedback report after completing the pre- and post-questionnaire. In between pre- and post-measures, participants completed weekly diaries during the 4 weeks of job crafting.
Study limitations (author)	Sample size was modest and the study had insufficient statistical power due to the small sample size; Sample consisted of only one vocational group, which limits the generalizability of results; The effects of the different components are difficult to study separately as the design was created to measure effects of the intervention as a whole or what the optimal number of group sessions may be to sufficiently prepare participants to begin crafting or if other job resources as well as demands that may be impacted by the job crafting intervention. Short follow-up does not allow an understanding of the intervention effects are enduring or short-lived and whether participants will continue to craft their job.
Study limitations (reviewer)	No randomisation: no blinding or allocation concealment which given the experimental and control groups interact could impact study effects; Confounding by unmeasured variables due to the non-randomised and unblinded study design; Self-report measures used; Small sample size so study may be underpowered to detect changes in outcomes under investigation.
Source of funding	Not specified

Study arms

Job crafting (N = 39)

One training day and 4 weeks of experimenting with job crafting goals, followed by a half-day reflection session.

No intervention (N = 47)

Characteristics

Arm-level characteristics

Characteristic	Job crafting (N = 39)	No intervention (N = 47)
Age (years)	44.6 (9.54)	43.4 (10.42)
Mean (SD)		
Gender (% Female) NICE calculated	33.3	38.3
Nominal		
Ethnicity	NR	NR
Nominal		

Outcomes

Study timepoints

- 0 week (Endpoint)

Employee outcomes

Outcome	Job crafting, 0 week, N = 39	No intervention, 0 week, N = 47
Mental health symptoms Using Job Affective Well-being Scale - Negative affect	2.06 (0.6)	2.1 (0.71)
Mean (SD)		

Critical appraisal - ROBINS-I: a tool for assessing risk of bias in non-randomised studies of interventions.

Employee outcomes – Mental health symptoms – Mean SD - Job crafting-No intervention-t0

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (<i>Self-reported outcomes</i>)
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate (<i>Self-reported outcome</i>)

Study arms

Job crafting (N = 39)

Brief name	Job crafting
Rationale/theory/Goal	The study develops and examines the effects of an intervention aimed at implementing and encouraging job crafting behavior at work. Job crafting can result in an increase in positive outcomes such as work engagement and performance.

Materials used	Interviews with management and potential participants to design the intervention; Self-report measures: job crafting scale, opportunities for development were assessed via three items from the scale constructed by Bakker et al (2003); leader–member exchange assessed via 5-item Dutch adaptation of Graen et al (1991) scale; 12-item short version of the Job Affective Well-being Scale; generalized self-efficacy scale. All participants received an online feedback report after completing the pre- and post-questionnaire. In between pre- and post-measures, participants completed weekly diaries during the 4 weeks of job crafting. Training day (background theory on the JD-R model and job crafting); Participant completed poster;
Procedures used	Interviews with management and potential participants to design the intervention; training day; participants mapped their tasks, demands, and resources on a poster and reflected on it to identify situations at work they would like to craft. Personal crafting stories were shared and analysed in the group. A plan with specific job crafting goals, such as how to seek resources, how to reduce demands, and how to seek challenges, was drawn up by each participant; The personal crafting plan continued for 4 weeks. Afterwards, experiences were shared during a reflection session.
Provider	Not specified
Method of delivery	Group workshops of up to 20 participants
Setting/location of intervention	Not specified
Intensity/duration of the intervention	Intervention was conducted in groups of up to 20 participants to facilitate active participation. The intervention consisted of one training day, 4 weeks of working independently on job crafting goals at work, and a half-day reflection session.
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

No intervention (N = 47)

Brief name	Control
-------------------	---------

Rationale/theory/Goal	Control to allow examination of the effects of the job crafting intervention aimed at implementing and encouraging job crafting behavior at work. It involved requesting participants to ask a colleague with a similar job to fill in the same questionnaires.
Materials used	Self-report measures: job crafting scale, opportunities for development were assessed via three items from the scale constructed by Bakker et al (2003); leader–member exchange assessed via 5-item Dutch adaptation of Graen et al (1991) scale; 12-item short version of the Job Affective Well-being Scale; generalized self-efficacy scale. All participants received an online feedback report after completing the pre- and post-questionnaire. In between pre- and post-measures, participants completed weekly diaries during the 4 weeks of job crafting.
Procedures used	Requesting intervention participants to ask a colleague with a similar job to fill in the same questionnaires.
Provider	Not specified
Method of delivery	Not specified
Setting/location of intervention	Not specified
Intensity/duration of the intervention	Control participants completed a survey prior to the intervention (T1, pre-measure) and 1–2 weeks after the intervention (T2, post-measure). All participants received an online feedback report after completing the pre- and post-questionnaire.
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Actual treatment fidelity	Not reported
Other details	Not reported

D.46 Van Wingerden 2016

Bibliographic Reference van Wingerden, Jessica; Bakker, Arnold B; Derks, Daantje; A test of a job demands-resources intervention.; Journal of Managerial Psychology; 2016; vol. 31 (no. 3); 686-701

Study details

Study design	Non-randomised controlled trial (NRCT)
Trial registration number	Not reported
Aim	To assess the impact of a JD-R intervention, aimed at improving personal resources and optimizing job resources and challenging job demands, on work engagement and performance
Country/geographical location	The Netherlands
Setting	<p>Workplace</p> <ul style="list-style-type: none"> • Sector: Not reported • Industry: Healthcare • Size: Not reported • Contract type: Not reported. • Seniority: Not reported • Income: Not reported
Inclusion criteria	Not reported
Exclusion criteria	Not reported
Method of allocation concealment	None reported
Unit of allocation	Cluster (work location)
Unit of analysis	Individual

<p>Statistical method(s) used to analyse the data</p>	<p>Power calculation: Not reported.</p> <p>ITT: Not reported</p> <p>The means, standard deviations, correlations, and reliabilities between all study variables at both measurement points were reported. A multivariate analysis of covariance (MANCOVA) with intervention as the independent variable (two levels: intervention, control) with T2 PsyCap, job crafting behavior, work engagement, and performance as the dependent variables controlling for T1 scores on each of the dependent variables.</p>
<p>Attrition</p>	<p>The following assessments were made at these timepoints.</p> <ul style="list-style-type: none"> • Baseline (2 weeks before intervention) • follow-up (1 week after intervention) <p>The primary outcome was not specified.</p> <p>Outcomes included.</p> <ul style="list-style-type: none"> • Personal resources • Job crafting • Utrecht Work Engagement Scale • In-role performance
<p>Assessments and timepoints</p>	<p>All participants completed the study</p>
<p>Study limitations (author)</p>	<ul style="list-style-type: none"> • Not generalisable - all participants worked at the same healthcare organization and only included healthcare professionals. • Lack of randomisation • Small sample size with low statistical power • self-rating of in-role performance
<p>Study limitations (reviewer)</p>	<p>None to add</p>

Source of funding	No funding reported
--------------------------	---------------------

Study arms

JD-R intervention (N = 43)
No intervention (N = 24)

Characteristics

Study-level characteristics

	Study (N =)
Age (years)	
Mean/SD	42.3 (10.58)
Gender	
Female	
Sample Size	n = 64 ; % = 96
Male	
Sample Size	n = 3 ; % = 4
Ethnicity	
Not reported	
Socio economic status	

	Study (N =)
Reported as education level	
University / vocational level training	
Sample Size	n = 56 ; % = 84

Outcomes

Study timepoints	Baseline 1 (week) Post-intervention
-------------------------	--

Employee outcomes

	JD-R intervention		No intervention	
	Baseline	1 (week)	Baseline	1 (week)
	N = 43	N = 43	N = 24	N = 24
Wellbeing - psychological capital Self-reported - consists of measures for self-efficacy, optimism, hope, and resilience. <i>Polarity: Higher values are better</i>				
Sample Size	n = 43 ; % = 100	n = 43 ; % = 100	n = 24 ; % = 100	n = 24 ; % = 100
Mean/SD	3.66 (0.49)	3.79 (0.53)	3.8 (0.4)	3.66 (0.49)
Job satisfaction - work engagement (0-6) Self-reported - nine-item Utrecht Work Engagement Scale				

	JD-R intervention		No intervention	
	Baseline	1 (week)	Baseline	1 (week)
	N = 43	N = 43	N = 24	N = 24
<i>Polarity: Higher values are better</i>				
Sample Size	n = 43 ; % = 100	n = 43 ; % = 100	n = 24 ; % = 100	n = 24 ; % = 100
Mean/SD	4.8 (0.98)	5.15 (1.08)	5.25 (0.86)	5.1 (0.85)

Mental wellbeing - JD-R intervention vs No intervention - 1-week follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (<i>Outcome measure was self-reported</i>)

Section	Question	Answer
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate (<i>Self-reported outcome</i>)

Job satisfaction - JD-R intervention vs No intervention - 1-week follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Low
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate (<i>Outcome measure was self-reported</i>)
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Moderate (<i>Self-reported outcome</i>)

Study arms

JD-R intervention (N = 43)	
Brief name	Job demands-resources intervention [page 686]
Rationale/theory/Goal	Research with the job demands-resources (JD-R) theory has shown that having an adequate amount of resources can lead to various positive work outcomes like work engagement and performance. Work engagement in healthcare is positively related to employee well-being, client satisfaction, and quality of care. The JD-R intervention contains exercises aimed at increasing personal resources, job resources and challenging job demands. [pages 686 and 691]
Materials used	<ul style="list-style-type: none"> •
Procedures used	<ul style="list-style-type: none"> • To increase personal resources, exercises were used to increase participants' levels of hope, optimism, self-efficacy, and resilience (PsyCap). • To stimulate participants' job crafting behavior, exercises and goal setting were used. • Participants made a job crafting plan in which they described their job crafting goals and the actions they would take to increase their social job resources, structural job resources, and challenging job demands. • In the four weeks between the second and third training session, the participants tried to put their job crafting plan into action. • In the final training session, the trainers and participants evaluated whether the participants had succeeded in accomplishing their job crafting goals. <p>[pages 691 and 692]</p>
Provider	Trainers [page 691]
Method of delivery	Training sessions [page 691]
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Three training sessions over a period of five weeks: the first and second session took place on one day, while the third half-day session took place four weeks later. [page 691]

Tailoring/adaptation	The job crafting element of the intervention was based on the Michigan Job Crafting Exercise and was adjusted to the work environment of the organization. [page 692]
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None
Control (N = 24)	
Brief name	Control group [page 691]
Rationale/theory/Goal	Not applicable
Materials used	Not applicable
Procedures used	Not applicable
Provider	Not applicable
Method of delivery	Not applicable
Setting/location of intervention	Not applicable
Intensity/duration of the intervention	Not applicable

Tailoring/adaptation	Not applicable
Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	None

D.47 Van Wingerden 2017

Bibliographic Reference van Wingerden, Jessica; Bakker, Arnold B; Derks, Daantje; The longitudinal impact of a job crafting intervention.; European Journal of Work and Organizational Psychology; 2017; vol. 26 (no. 1); 107-119

Study details

Study design	Non-randomised controlled trial (NRCT)
Trial registration number	Not reported
Aim	To assess the impact of a job crafting intervention on work engagement and performance.
Country/geographical location	The Netherlands
Setting	Workplace

	<ul style="list-style-type: none"> • Public sector • Education • Organisation size: Not specified. • Contract type: Not specified. • Seniority: Not specified • Income: Not specified
Inclusion criteria	Not reported
Exclusion criteria	Not reported
Method of allocation concealment	None reported
Unit of allocation	Cluster (work location)
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<p>Power calculation: None reported.</p> <p>ITT: Not reported</p> <p>The means and standard deviations of the study variables for the intervention group and control group were reported. A repeated measures multivariate analyses of covariance (MANCOVA) with time (T1–T2–T3) as a within-person factor and group (intervention group vs. control group) as a between-person factor, and age as the covariate</p>
Attrition	45 out of 45 (100%) in the intervention group and 26 out of 30 (86.7%) in the control group provided data.
Assessments and timepoints	<p>The following assessments were made at these timepoints.</p> <ul style="list-style-type: none"> • baseline • endpoint (9 weeks after baseline)

	<ul style="list-style-type: none"> • follow-up (12 months after endpoint) <p>The primary outcomes were not specified. Secondary outcomes included.</p> <ul style="list-style-type: none"> • Job Crafting Scale • Job demands - Workload. • Job resources - Performance feedback • resilience • Utrecht Work Engagement Scale • In-role performance
Study limitations (author)	<ul style="list-style-type: none"> • all participants worked for the same educational organization. • homogeneity of the sample; the sample consisted of teachers only. • use of self-rating for some outcomes
Study limitations (reviewer)	None to add.
Source of funding	No funding reported

Study arms

Job crafting (N = 45)
Control (N = 30)

Characteristics

Study-level characteristics

		Study (N =)
Age (years)		
Mean/SD		45 (10.05)
Gender		
Male		
Sample Size		n = 13 ; % = 17
Female		
Sample Size		n = 62 ; % = 83
Ethnicity Not reported		
Socioeconomic status Reported as education		
University / vocational level training		
Sample Size		n = 65 ; % = 87
Outcomes		
Study timepoints	Baseline 12 (month)	

Employee outcomes

	Job crafting		Control	
	Baseline	12 (month)	Baseline	12 (month)
	N = 45	N = 45	N = 30	N = 30
<p>Wellbeing - self efficacy Self-reported - measured using four-item version of the scale developed by Schwarzer and Jerusalem (1995) <i>Polarity: Higher values are better</i></p>				
Sample Size	n = 45 ; % = 100	n = 45 ; % = 100	n = 30 ; % = 100	n = 26 ; % = 86.7
Mean/SD	3.33 (0.4)	3.54 (0.45)	3.37 (0.43)	3.44 (0.39)
<p>Job satisfaction - work engagement (0-6) Self-reported- measured using 9-item Utrecht work engagement scale. <i>Polarity: Higher values are better</i></p>				
Sample Size	n = 45 ; % = 100	n = 45 ; % = 100	n = 30 ; % = 100	n = 26 ; % = 86.7
Mean/SD	4.76 (0.99)	4.82 (0.88)	4.81 (1.07)	4.69 (1.08)

Wellbeing - Job crafting vs Control - 12-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low

Section	Question	Answer
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Increased attrition for control group)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Increased attrition for control group and self-reported outcome)</i>

Job satisfaction - Job crafting vs Control - 12-month follow up.

Section	Question	Answer
1. Bias due to confounding	Risk of bias judgement for confounding	Low
2. Bias in selection of participants into the study	Risk of bias judgement for selection of participants into the study	Low

Section	Question	Answer
3. Bias in classification of interventions	Risk of bias judgement for classification of interventions	Low
4. Bias due to deviations from intended interventions	Risk of bias judgement for deviations from intended interventions	Low
5. Bias due to missing data	Risk of bias judgement for missing data	Moderate <i>(Increased attrition for control group)</i>
6. Bias in measurement of outcomes	Risk of bias judgement for measurement of outcomes	Moderate <i>(Outcome measure was self-reported)</i>
7. Bias in selection of the reported result	Risk of bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Serious <i>(Increased attrition for control group and self-reported outcome)</i>

Study arms

Job crafting (N = 45)	
Brief name	Job crafting intervention based on job demands-resources (JD-R) theory
Rationale/theory/Goal	The job crafting intervention was based on the Michigan Job Crafting Exercise (JCE) and operationalized using the principles proposed by JD-R theory. Specifically, the job crafting intervention consists of exercises and goal setting aimed at increasing social job resources, increasing challenging job demands, increasing structural job resources, and decreasing hindering job demands. [page 111]
Materials used	Workbooks [page 111]

Procedures used	<ul style="list-style-type: none"> • The job crafting intervention consisted of two training sessions over a period of 6 weeks. • In the first session (job crafting session), participants performed job analysis, person analysis, job-person analysis. Participants were then challenged to formulate meaningful, personal changes in their work situations, and these were discussed. • The self-formulated job crafting activities that resulted from participants analysis and discussion, were then saved in a personal job crafting action plan. • The participants then carried out their action plan in the next 4 weeks. • The second session assessed the extent to which the self-initiated job changes had been successful. <p>[pages 111 and 112]</p>
Provider	Not reported
Method of delivery	Training sessions [pages 111 and 112]
Setting/location of intervention	Not reported
Intensity/duration of the intervention	Two sessions (8 hours and 4 hours) took place, with 4 weeks in between. [page 111]
Tailoring/adaptation	The practical examples incorporated in the training and the text and pictures in the workbook were adapted to the specific needs of employees in the educational sector. [page 111]
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None

Control (N = 30)	
Brief name	Control group [page 110]
Rationale/theory/Goal	Not applicable
Materials used	Not applicable
Procedures used	Not applicable
Provider	Not applicable
Method of delivery	Not applicable
Setting/location of intervention	Not applicable
Intensity/duration of the intervention	Not applicable
Tailoring/adaptation	Not applicable
Unforeseen modifications	Not applicable
Planned treatment fidelity	Not applicable
Actual treatment fidelity	Not applicable
Other details	None

D.48 Zhang 2014

Bibliographic Reference Zhang, Xichao; Li, Yan-Ling; Ma, Shuang; Hu, Jing; Jiang, Li; A structured reading materials-based intervention program to develop the psychological capital of Chinese employees.; *Social Behavior and Personality: An International Journal*; 2014; vol. 42 (no. 3); 503-516

Study details

Study design	Randomised controlled trial (RCT)
Trial registration number	Not reported
Aim	To determine whether individuals who took part in a structured reading programme aimed at improving psychological capital developed greater psychological capacity and job performance.
Country/geographical location	China
Setting	<p>Workplace:</p> <ul style="list-style-type: none"> • Private organisation • Industry: various, including manufacturing and services • Organisation size: not reported. • Contract type: not reported. • Seniority: not reported • Income: not reported
Inclusion criteria	Not reported
Exclusion criteria	Not reported
Method of randomisation	Not reported

Method of allocation concealment	Not reported
Unit of allocation	Individual
Unit of analysis	Individual
Statistical method(s) used to analyse the data	<ul style="list-style-type: none"> • Harman's one-factor test was implemented to statistically test for common method variance.
Attrition	298 questionnaires were distributed, and 289 questionnaires were retrieved (97.0%). From the 289 retrieved questionnaires, 130 participants were randomised to the intervention, and 148 participants to the control group. 105 participants from the intervention, and 129 participants from the control group were included in follow-up analyses, which represents 80.8% and 87.2% of the randomised populations respectively.
Assessments and timepoints	The psychological capital of the participants was measured at baseline, 1 week after the intervention, and 3 months after the intervention.
Study limitations (author)	<ul style="list-style-type: none"> • Self-rated job performance is a subjective measure, which may lead to bias. • The control group did not receive any reading material, meaning that blinding was less efficient.
Source of funding	Not reported

Study arms

Intervention (N = 130)

130 individuals in arm that took part in a structured reading materials-based intervention to improve psychological capacity

Control (N = 148)

148 individuals in control arm

Characteristics

Study-level characteristics

	Study (N = 298)
Age N calculated by reviewer	
25 years and below	
Sample Size	n = 36 ; % = 15.4
26 to 35 years	
Sample Size	n = 159 ; % = 67.9
36 to 45 years	
Sample Size	n = 39 ; % = 16.7
Gender	
Men	
Sample Size	n = 139 ; % = 59.2
Women	
Sample Size	n = 95 ; % = 40.8
Ethnicity Not reported	

	Study (N = 298)
Socioeconomic status N calculated by reviewer	
Junior college	
Sample Size	n = 68 ; % = 29.9
Undergraduate degree	
Sample Size	n = 127 ; % = 54.3
master's or above	
Sample Size	n = 37 ; % = 15.8

Outcomes

Study timepoints	Baseline 1 (week) 1 week after intervention 3 (month) 3 months after intervention
-------------------------	---

Employee outcomes

	Intervention			Control		
	Baseline	1 (week)	3 (month)	Baseline	1 (week)	3 (month)
	N = 130	N = 130	N = 130	N = 148	N = 148	N = 148
Mental wellbeing (1-6) 24 item Psychological Capital Questionnaire (PCQ-24)						

	Intervention			Control		
	Baseline	1 (week)	3 (month)	Baseline	1 (week)	3 (month)
	N = 130	N = 130	N = 130	N = 148	N = 148	N = 148
<i>Polarity: Higher values are better</i>						
Mean/SD	4.49 (0.44)	4.61 (0.4)	4.54 (0.42)	4.39 (0.55)	4.37 (0.55)	3.96 (1.47)
productivity Reported as job performance using Contextual Performance Questionnaire						
<i>Polarity: Higher values are better</i>						
Mean/SD	4.53 (0.62)	4.72 (0.59)	4.63 (0.62)	4.61 (0.62)	4.61 (0.61)	4.64 (0.58)

Productivity - Intervention vs Control - 3 month follow up.

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low
Domain 2b: Risk of bias due to deviations from the intended interventions (effect of adhering to intervention)	Risk of bias judgement for deviations from the intended interventions (effect of adhering to intervention)	Low
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low

Section	Question	Answer
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Low
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Low

Mental wellbeing - Intervention vs Control - 3 month follow up.

Section	Question	Answer
Domain 1: Bias arising from the randomisation process	Risk of bias judgement for the randomisation process	Low
Domain 2a: Risk of bias due to deviations from the intended interventions (effect of assignment to intervention)	Risk of bias for deviations from the intended interventions (effect of assignment to intervention)	Low
Domain 2b: Risk of bias due to deviations from the intended interventions (effect of adhering to intervention)	Risk of bias judgement for deviations from the intended interventions (effect of adhering to intervention)	Low
Domain 3. Bias due to missing outcome data	Risk-of-bias judgement for missing outcome data	Low
Domain 4. Bias in measurement of the outcome	Risk-of-bias judgement for measurement of the outcome	Low
Domain 5. Bias in selection of the reported result	Risk-of-bias judgement for selection of the reported result	Low
Overall bias	Risk of bias judgement	Low

Study arms

Structure reading materials intervention (N = 130)

Brief name	
	Structured reading materials-based psychological capital intervention program [page 503]

Rationale/theory/Goal	The PsyCap intervention process consisted of asking participants to read the structured material. It was expected that, the reading material might activate the participants' motivation to develop their PsyCap after they learned of the contribution of PsyCap to personal mental health, job performance, and occupational success, and were provided with feasible pathways to develop PsyCap in life. [page 507]
Materials used	<ul style="list-style-type: none"> Structured reading material [page 508]
Procedures used	<ul style="list-style-type: none"> Participants were assembled and sat individually in a large conference room. Participants were provided with the structured reading material, and informed that they had 30 minutes to read the material independently and silently. After completing the reading, five questions were asked to check if each participant had carefully read the material and comprehended its meaning. <p>[page 508]</p>
Provider	Not reported
Method of delivery	Participants individually completed structured reading materials and a test. [page 508]
Setting/location of intervention	Large conference room [page 508]
Intensity/duration of the intervention	30 minutes [page 508]
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported
Planned treatment fidelity	Not reported

Actual treatment fidelity	Not reported
Other details	To hide the true purpose of the intervention, all participants in the intervention group were instructed to join a social survey about the relationship between job characteristics and reading ability. Participants were informed of the true purpose when all study sessions were complete. [page 508]
Control (N = 148)	
Brief name	Participants were not given the intervention description of the reading material. [page 508]
Rationale/theory/Goal	Not applicable
Materials used	Not reported
Procedures used	The procedure for the control group was similar to that for the intervention group, except that they were not given the intervention description or the structured reading material. [page 508]
Provider	Not reported
Method of delivery	Not reported
Setting/location of intervention	Large conference room
Intensity/duration of the intervention	Not reported
Tailoring/adaptation	Not reported
Unforeseen modifications	Not reported

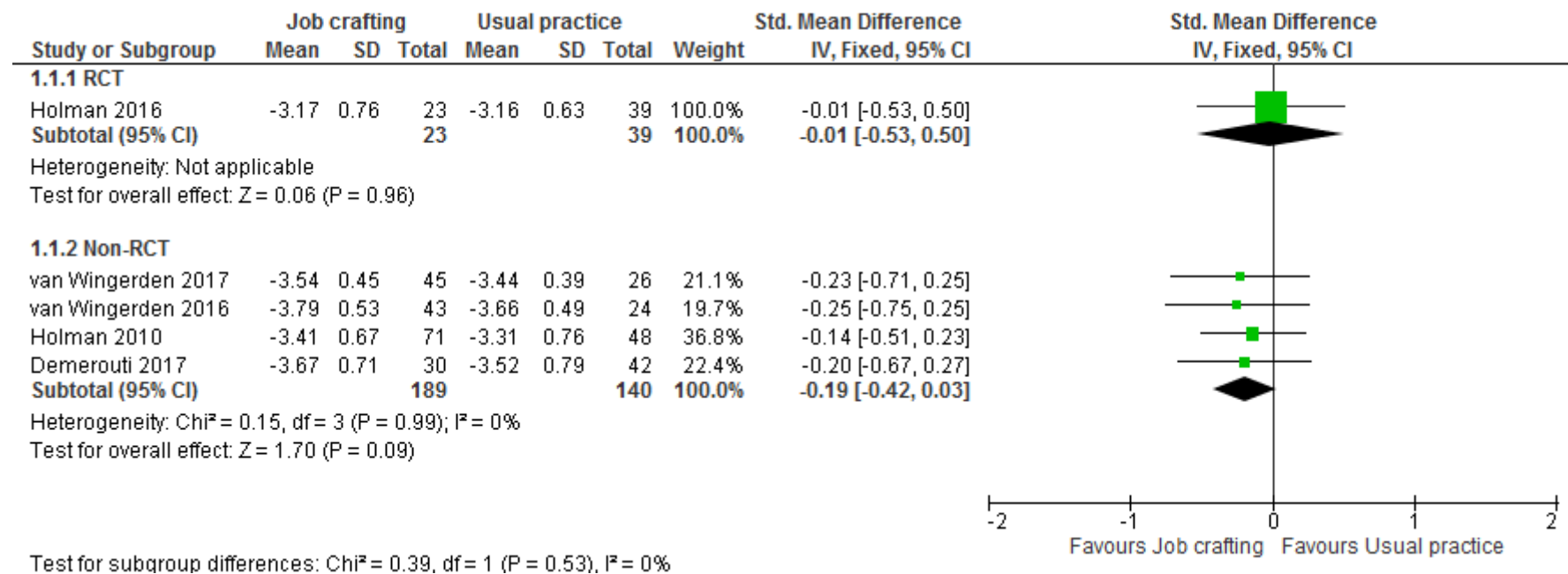
Planned treatment fidelity	Not reported
Actual treatment fidelity	Not reported
Other details	None

Appendix E – Forest plots

E.1 Universal interventions

E.1.1 Job crafting vs usual practice

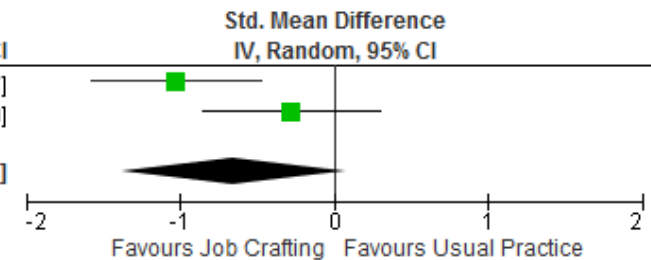
E.1.1.1 Mental wellbeing



E.1.1.2 Job stress

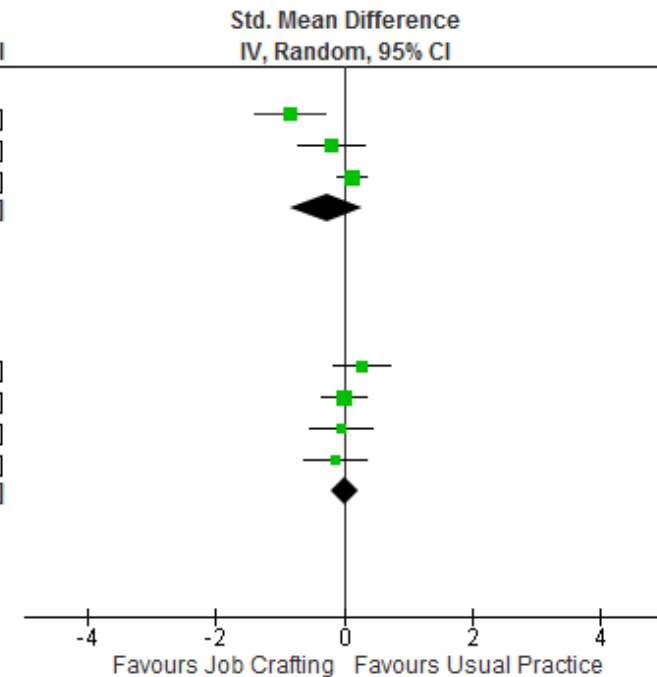
Study or Subgroup	Favours Job Crafting			Usual practice			Weight	Std. Mean Difference IV, Random, 95% CI
	Mean	SD	Total	Mean	SD	Total		
Gordon 2018	2.05	0.37	32	2.42	0.34	26	50.6%	-1.02 [-1.57, -0.47]
Grant 2014	2.7	1.43	31	3.08	1.19	19	49.4%	-0.28 [-0.85, 0.30]
Total (95% CI)			63			45	100.0%	-0.65 [-1.38, 0.08]

Heterogeneity: Tau² = 0.19; Chi² = 3.36, df = 1 (P = 0.07); I² = 70%
Test for overall effect: Z = 1.76 (P = 0.08)



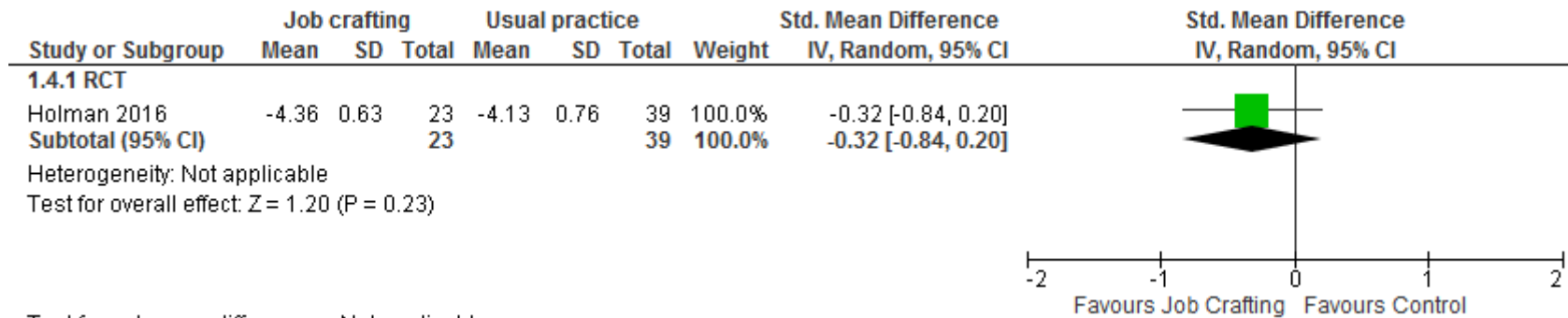
E.1.1.3 Job satisfaction

Study or Subgroup	Job crafting			Usual practice			Weight	Std. Mean Difference IV, Random, 95% CI
	Mean	SD	Total	Mean	SD	Total		
1.3.1 RCT								
Gordon 2018	-4.68	0.74	32	-4.07	0.67	26	30.2%	-0.85 [-1.39, -0.31]
Holman 2016	-2.84	0.68	23	-2.71	0.63	39	31.0%	-0.20 [-0.71, 0.32]
Sakuraya 2020	-2.83	1.17	138	-2.98	1.2	143	38.8%	0.13 [-0.11, 0.36]
Subtotal (95% CI)			193			208	100.0%	-0.27 [-0.84, 0.30]
Heterogeneity: Tau ² = 0.20; Chi ² = 10.83, df = 2 (P = 0.004); I ² = 82% Test for overall effect: Z = 0.92 (P = 0.36)								
1.3.2 non-RCT								
Dubbelt 2019	-4.05	1.38	40	-4.42	1.24	38	23.3%	0.28 [-0.17, 0.73]
Hulshof 2020	-4.74	0.93	66	-4.74	0.94	61	38.3%	0.00 [-0.35, 0.35]
van Wingerden 2016	-5.15	1.08	43	-5.1	0.85	24	18.6%	-0.05 [-0.55, 0.45]
van Wingerden 2017	-4.82	0.88	45	-4.69	1.08	26	19.9%	-0.13 [-0.62, 0.35]
Subtotal (95% CI)			194			149	100.0%	0.03 [-0.19, 0.24]
Heterogeneity: Tau ² = 0.00; Chi ² = 1.76, df = 3 (P = 0.62); I ² = 0% Test for overall effect: Z = 0.27 (P = 0.79)								



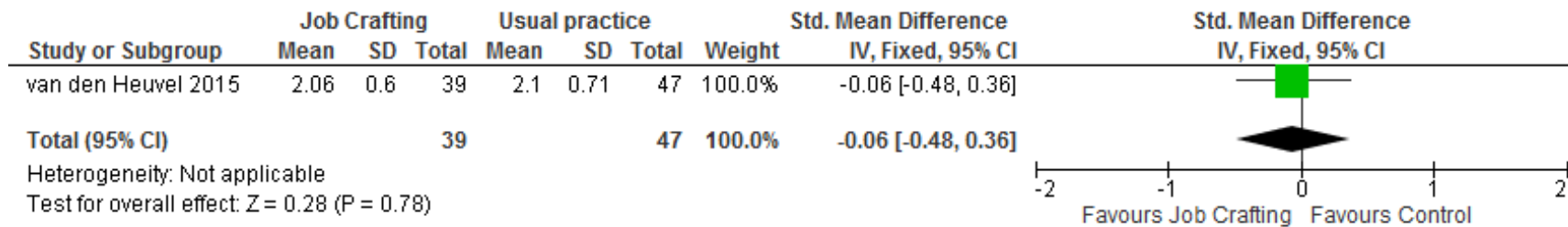
Test for subgroup differences: Chi² = 0.92, df = 1 (P = 0.34), I² = 0%

E.1.1.4 Productivity



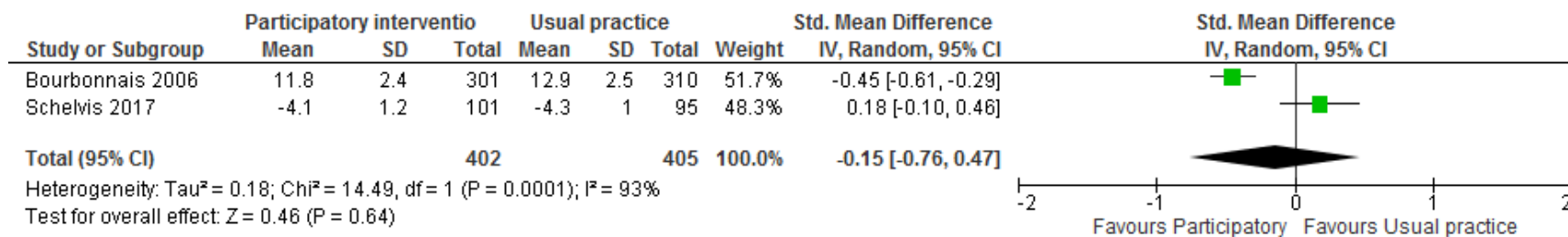
Test for subgroup differences: Not applicable

E.1.1.5 Mental health symptoms

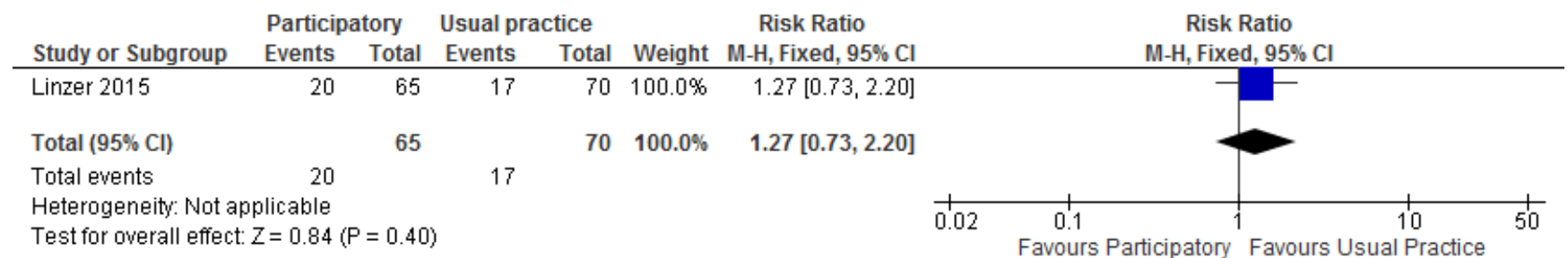
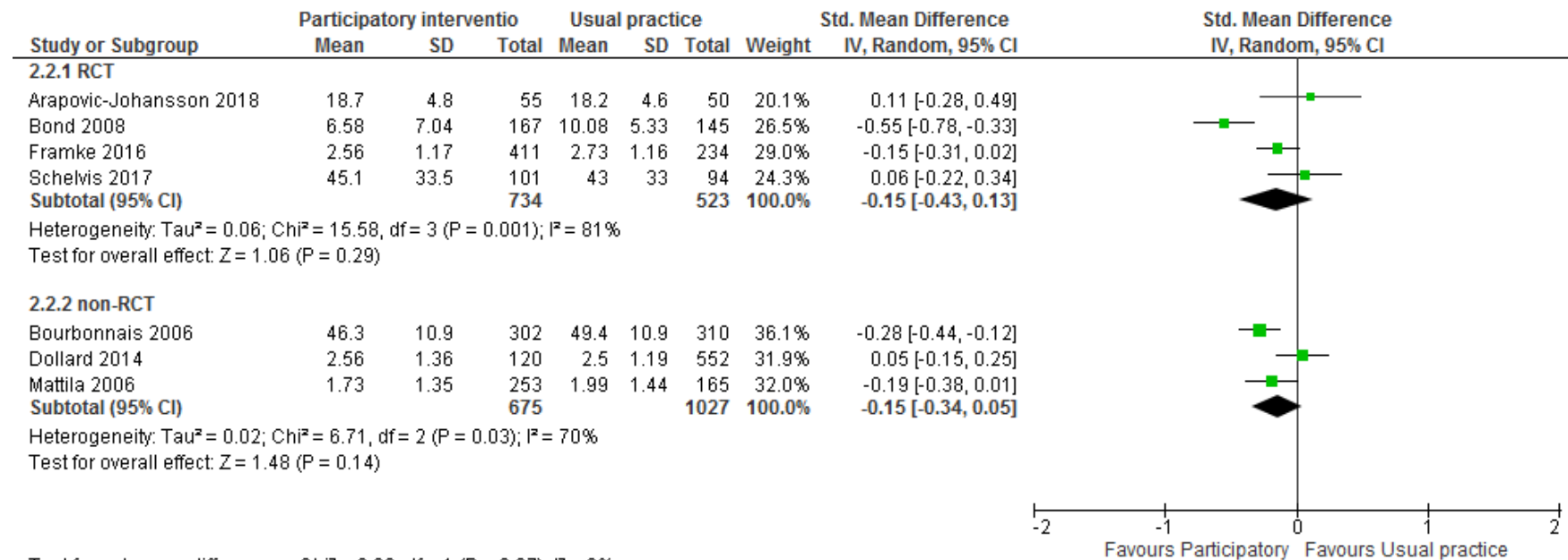


E.1.2 Participatory intervention vs usual practice

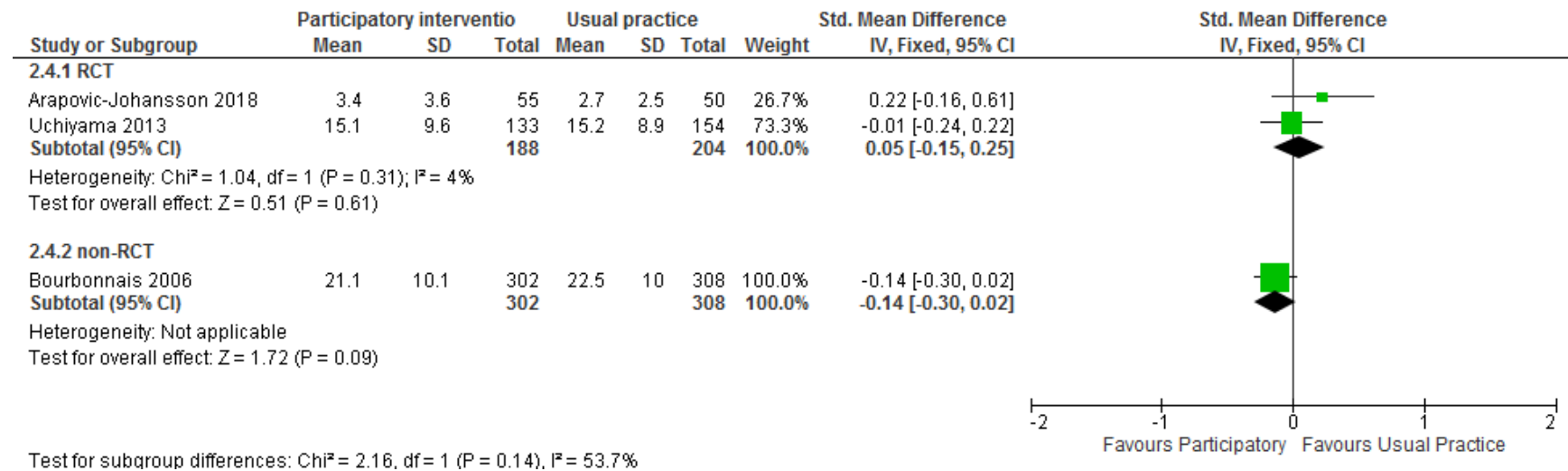
E.1.2.1 Mental wellbeing



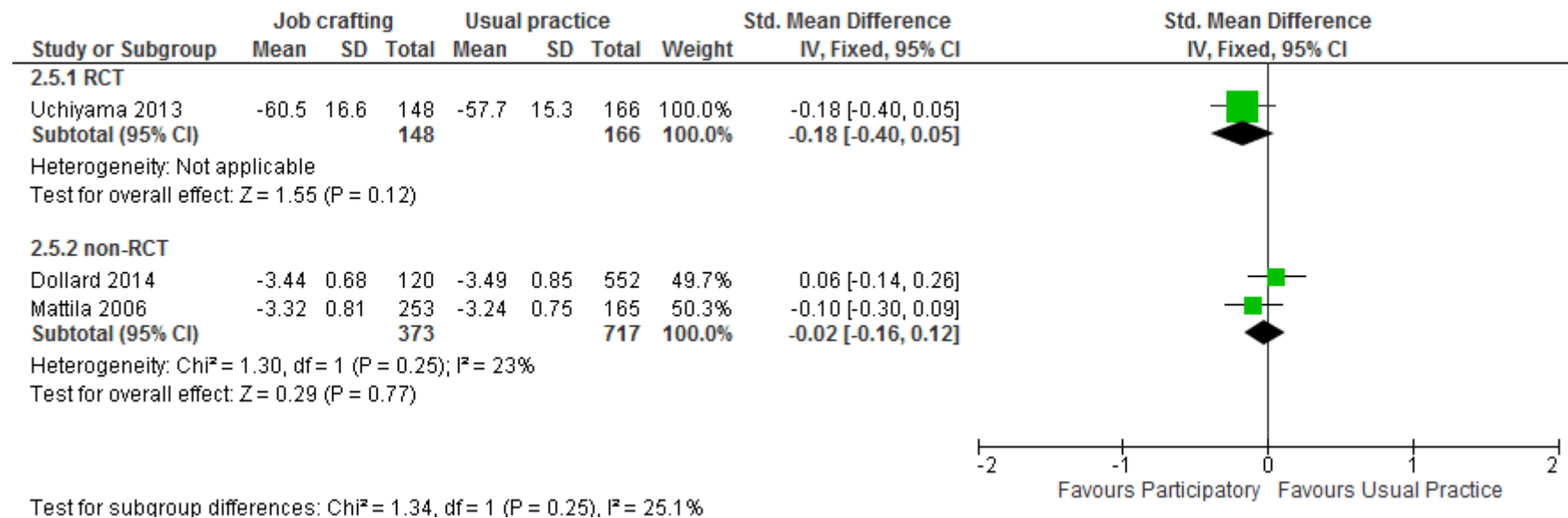
E.1.2.2 Job stress



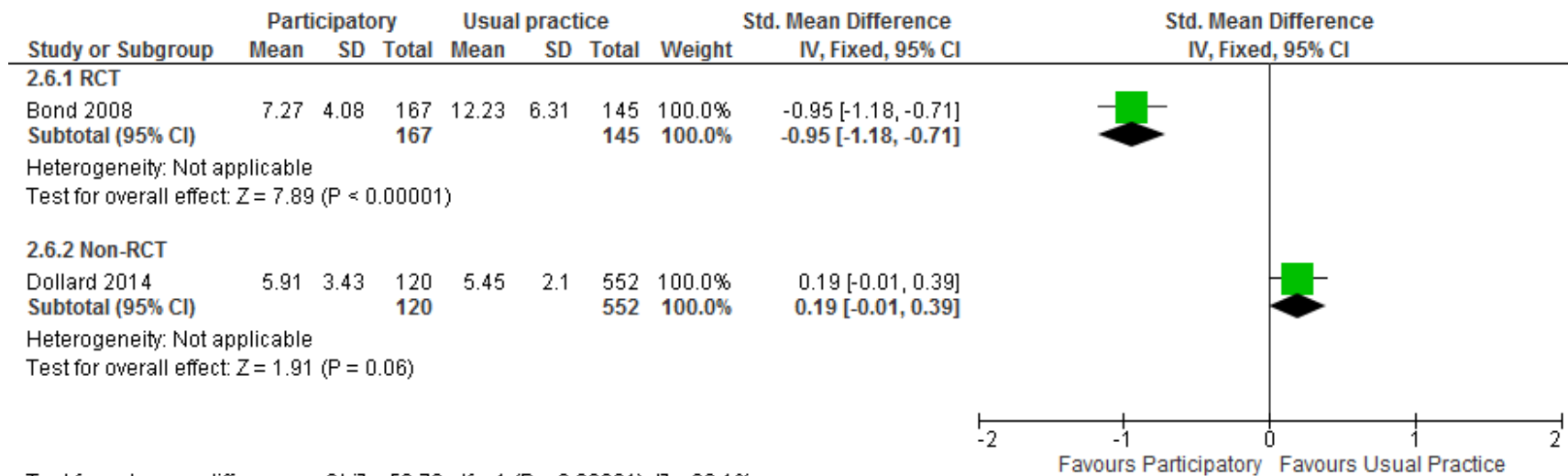
E.1.2.3 Mental health symptoms



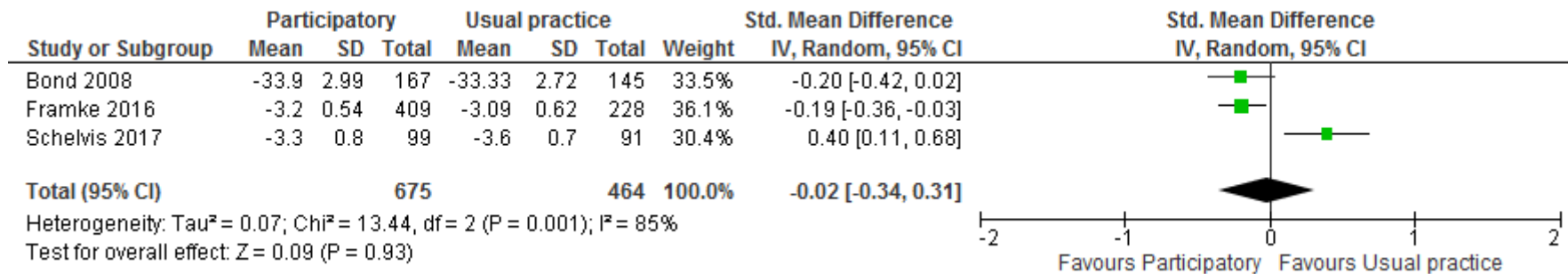
E.1.2.4 Work climate

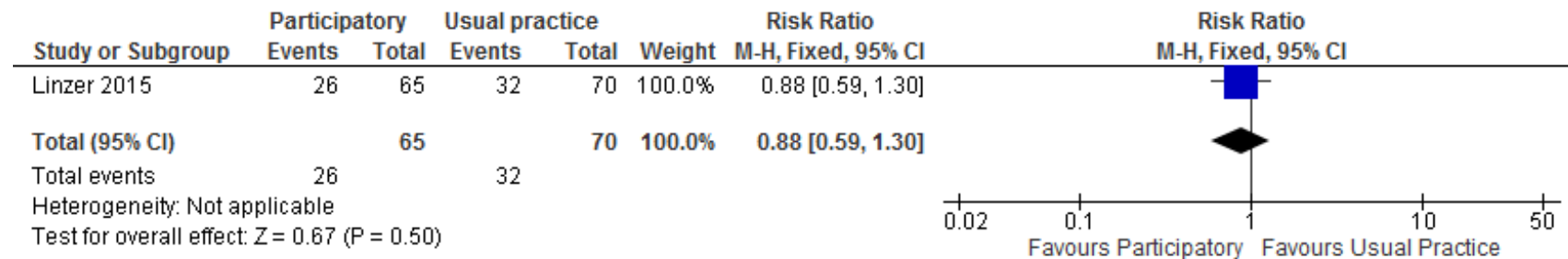


E.1.2.5 Absenteeism

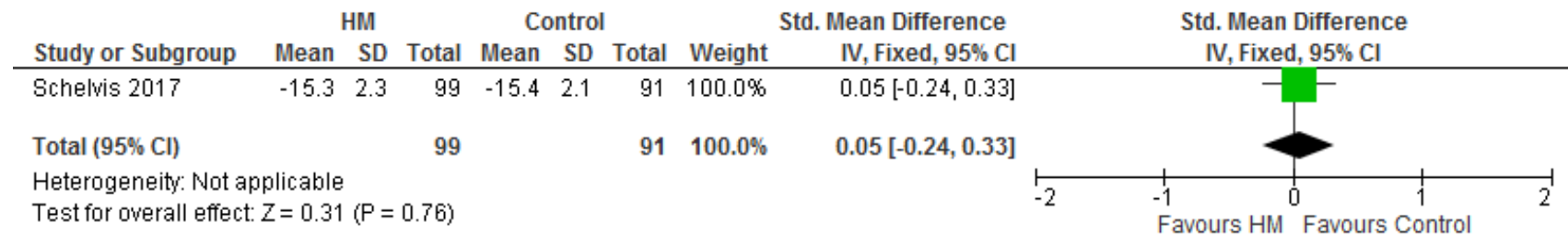


E.1.2.6 Job satisfaction



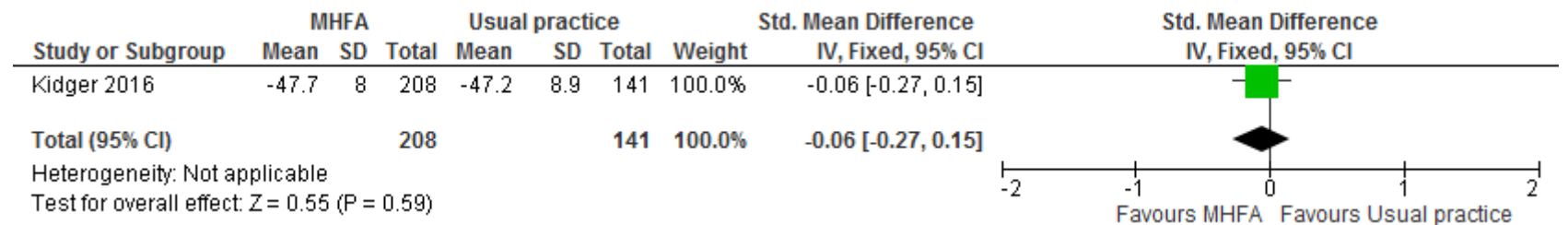


E.1.2.7 Productivity

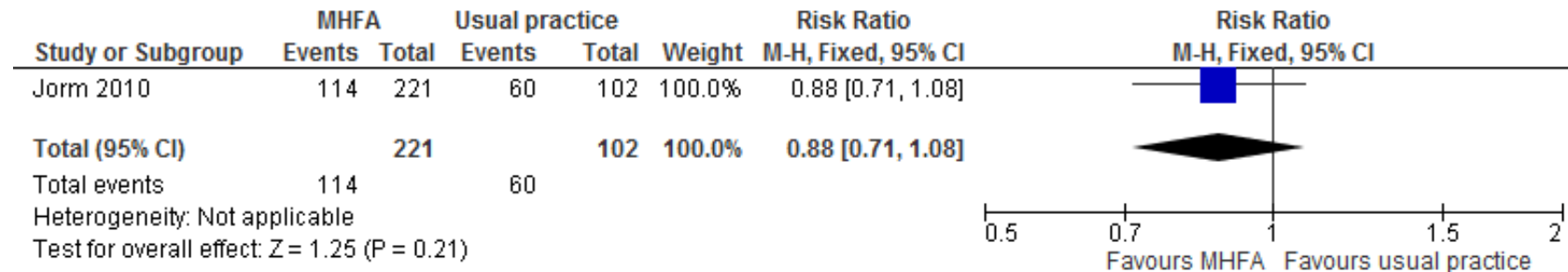
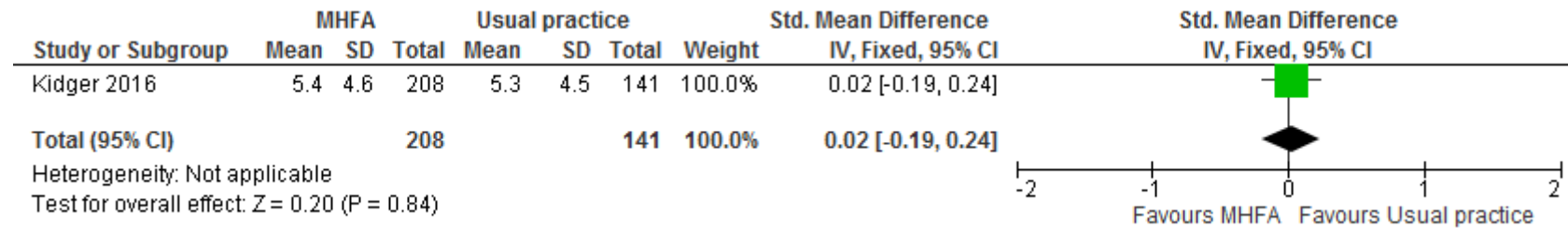


E.1.3 Mental health first aid (MHFA)

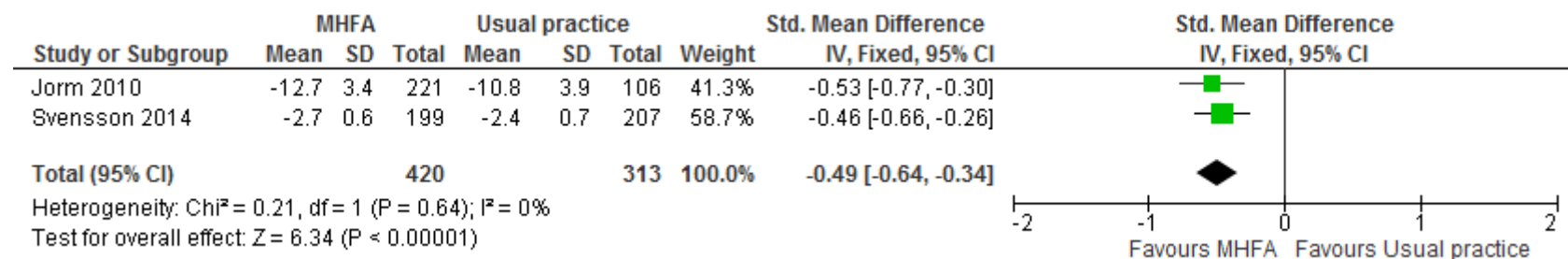
E.1.3.1 Mental wellbeing



E.1.3.2 Mental health symptoms

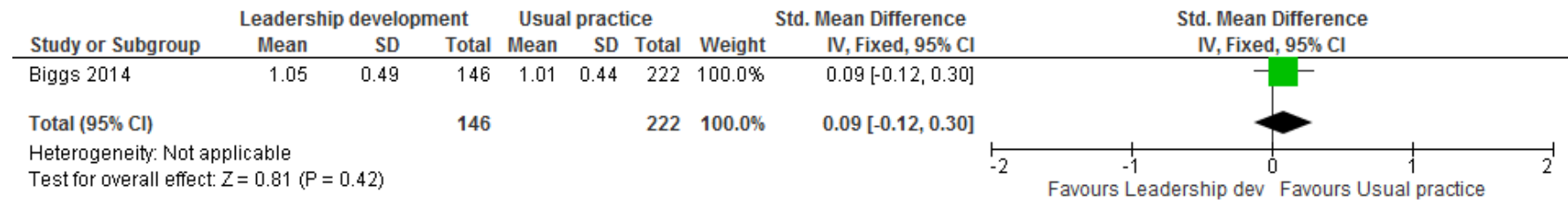


E.1.3.3 Mental health literacy

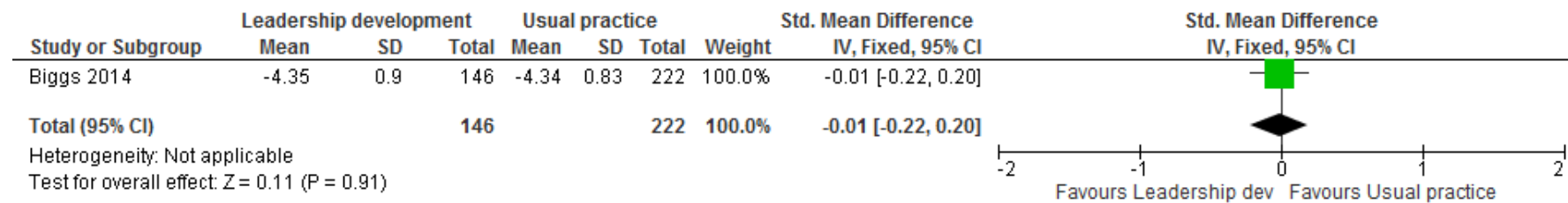


E.1.4 Leadership development vs usual practice

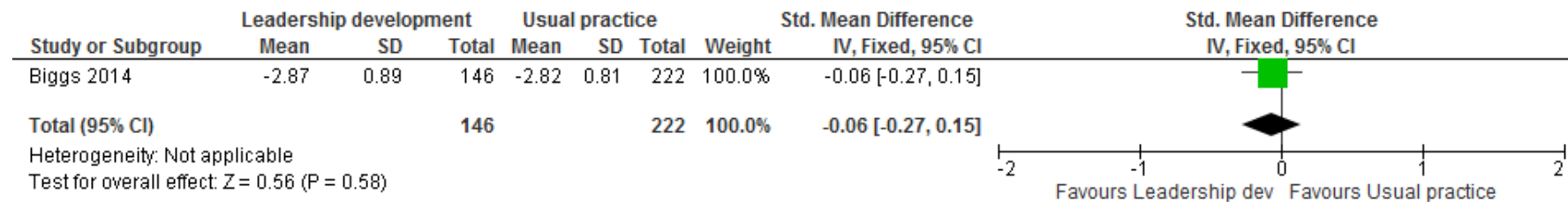
E.1.4.1 Mental wellbeing



E.1.4.2 Job satisfaction

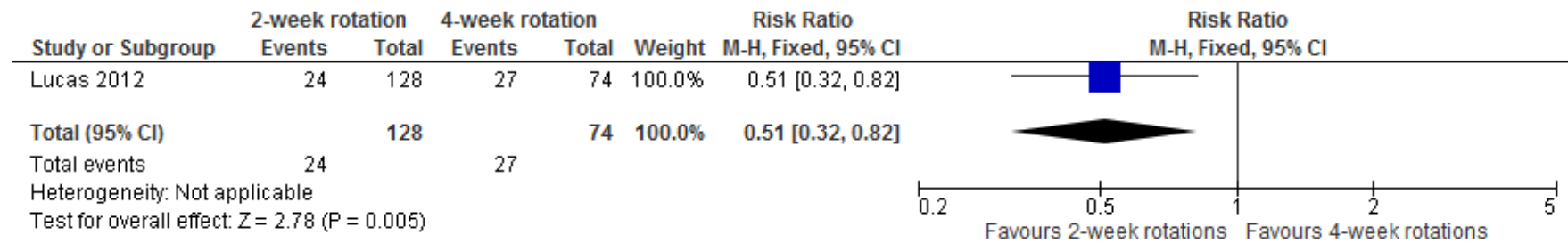


E.1.4.3 Work climate



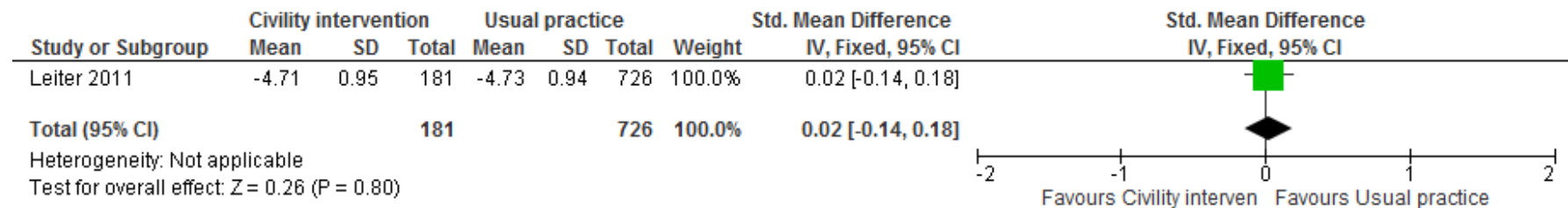
E.1.5 2-week rotations vs 4-week rotations

E.1.5.1 Job stress

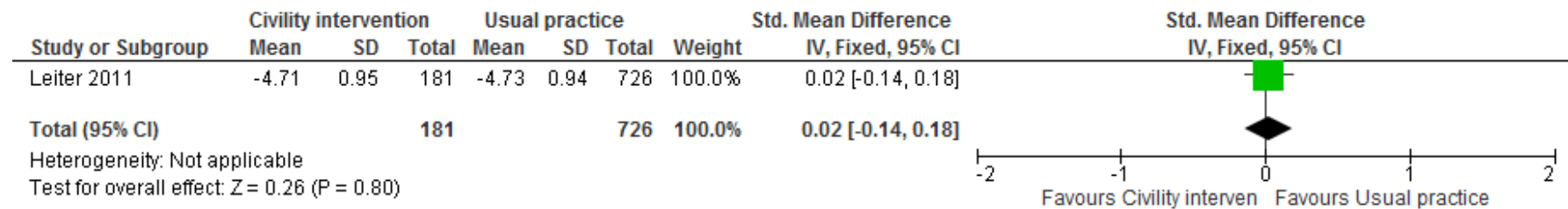


E.1.6 Civility intervention vs usual practice

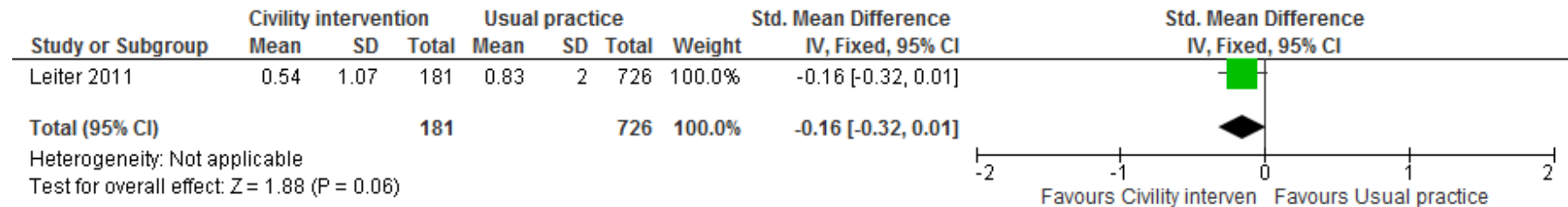
E.1.6.1 Mental wellbeing



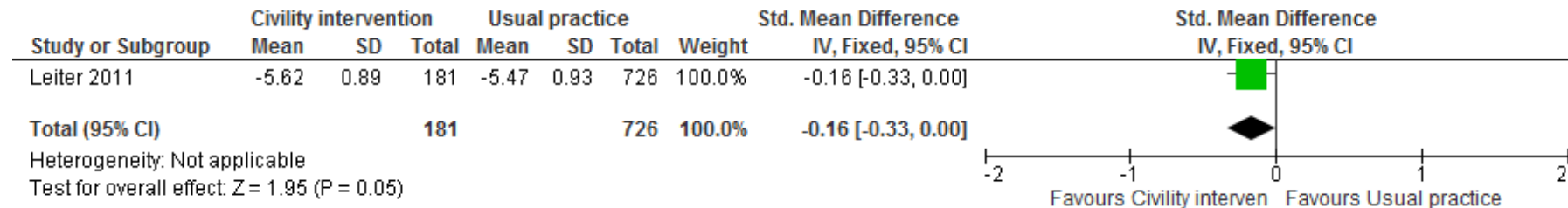
E.1.6.2 Job stress



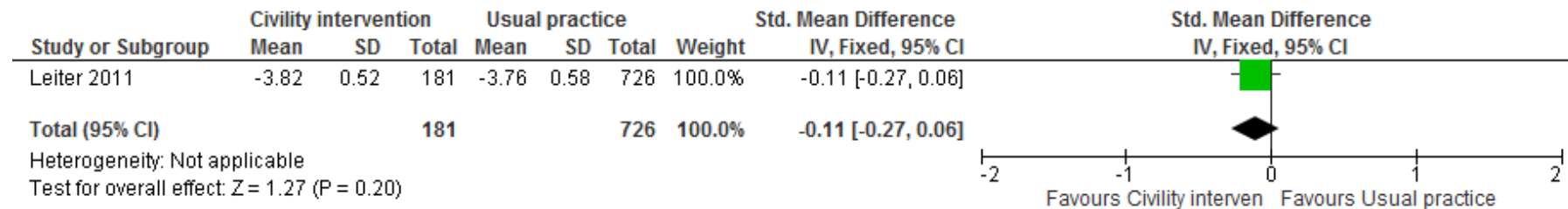
E.1.6.3 Absenteeism



E.1.6.4 Job satisfaction

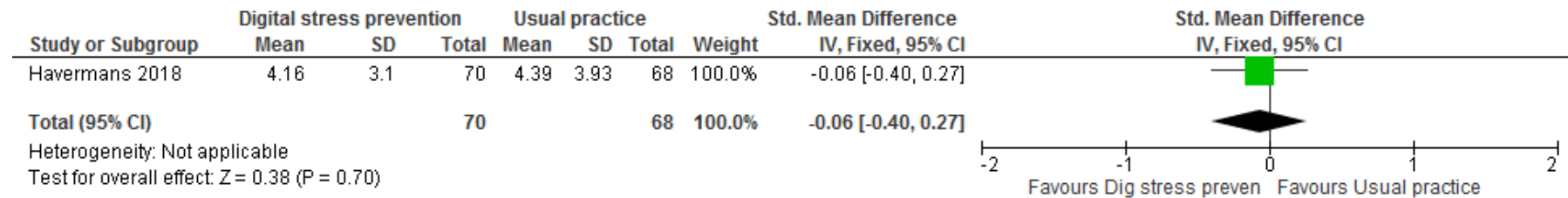


E.1.6.5 Work climate



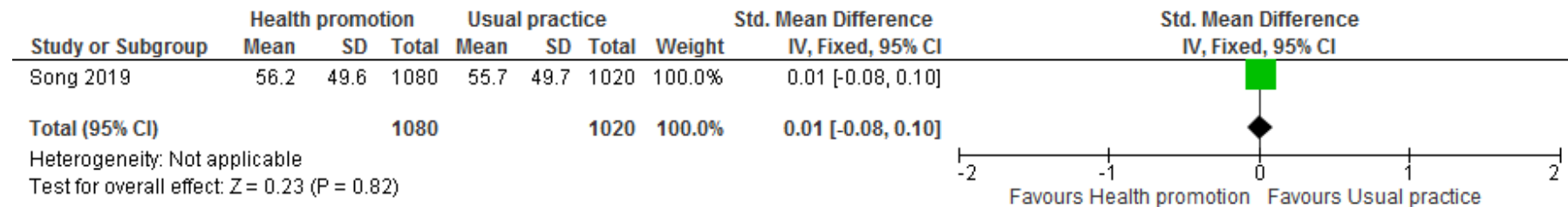
E.1.7 Digital stress prevention

E.1.7.1 Job stress

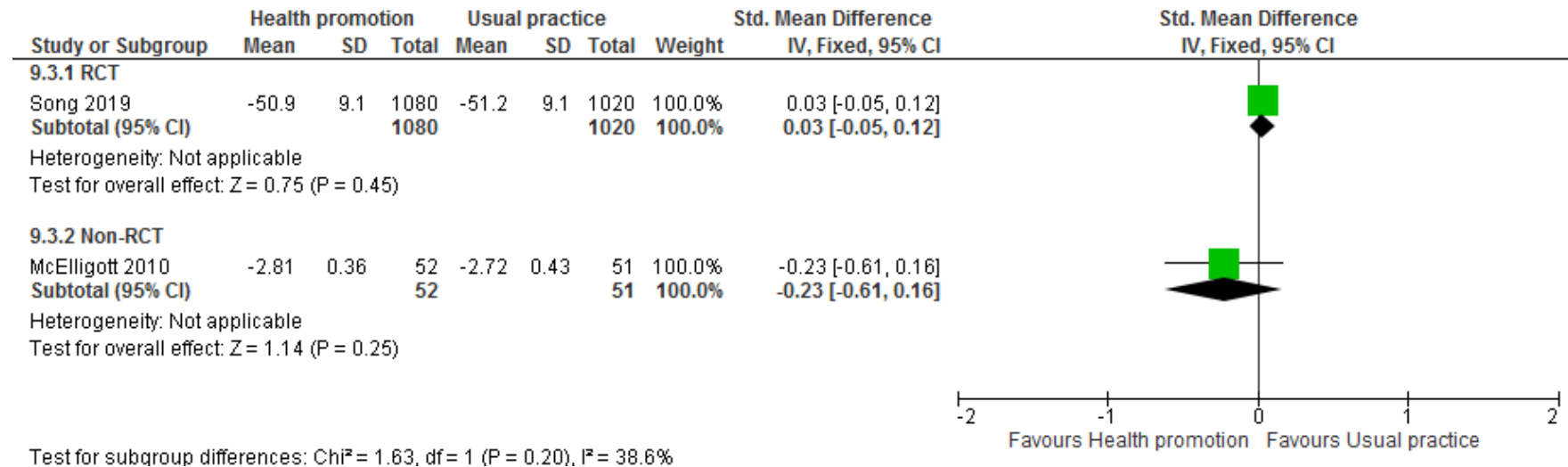


E.1.8 Health promotion vs usual practice

E.1.8.1 Job stress

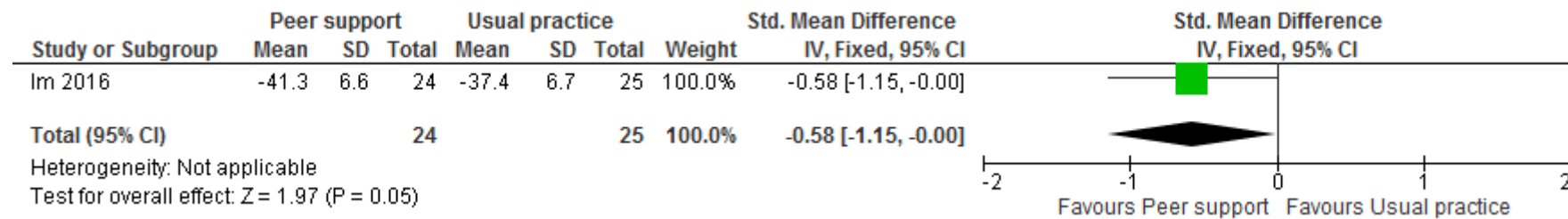


E.1.8.2 Quality of life

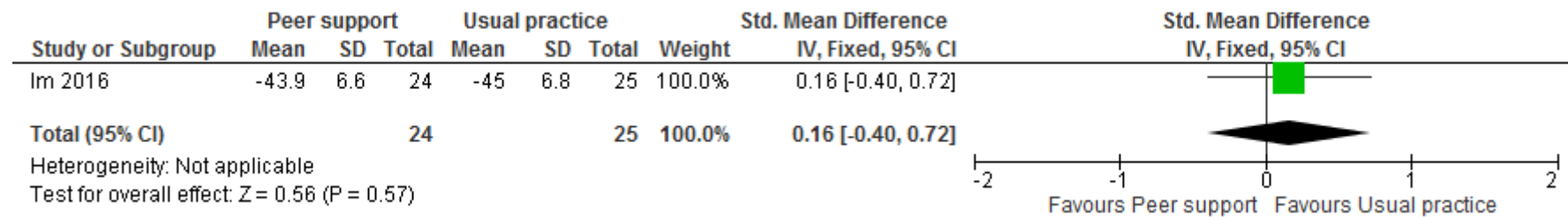


E.1.9 Peer support vs usual practice

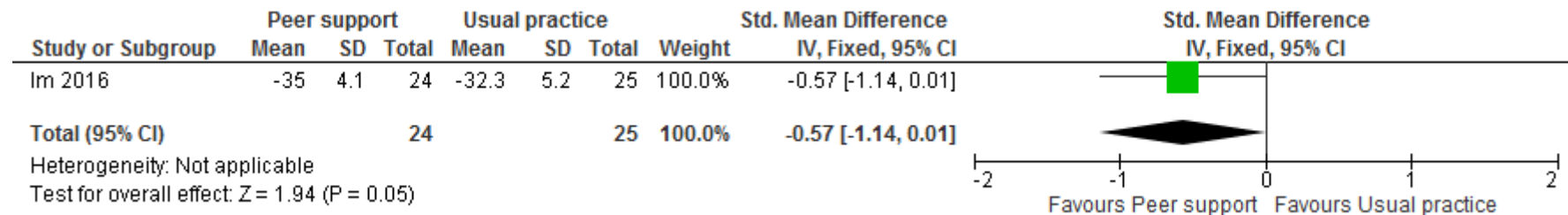
E.1.9.1 Mental wellbeing



E.1.9.2 Job stress

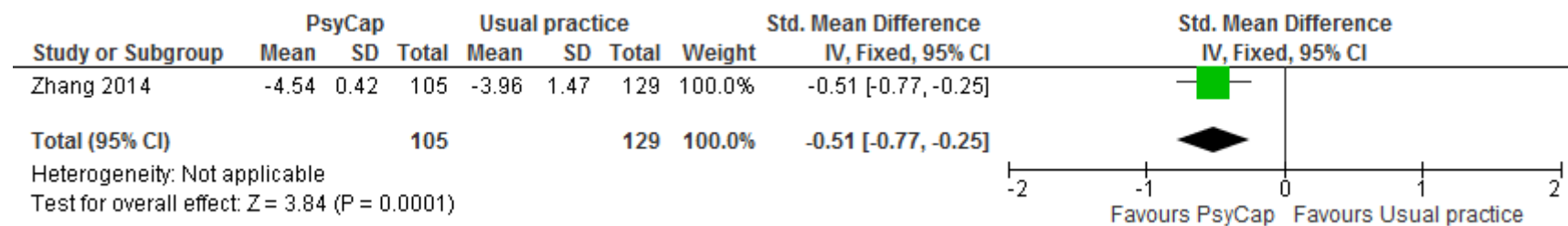


E.1.9.3 Job satisfaction

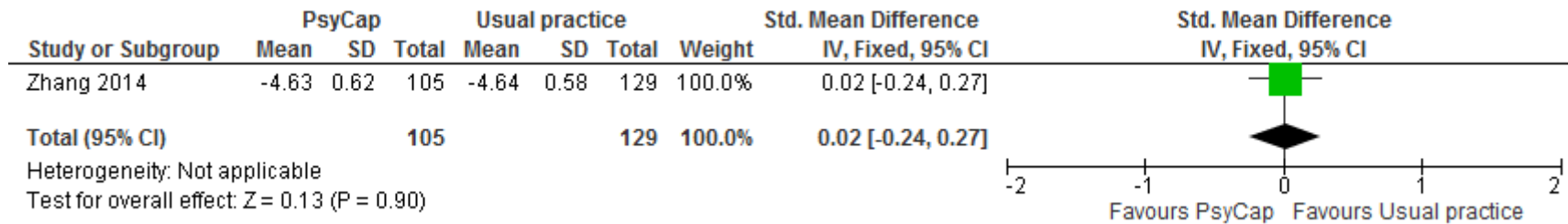


E.1.10 PsyCap vs usual practice

E.1.10.1 Mental wellbeing

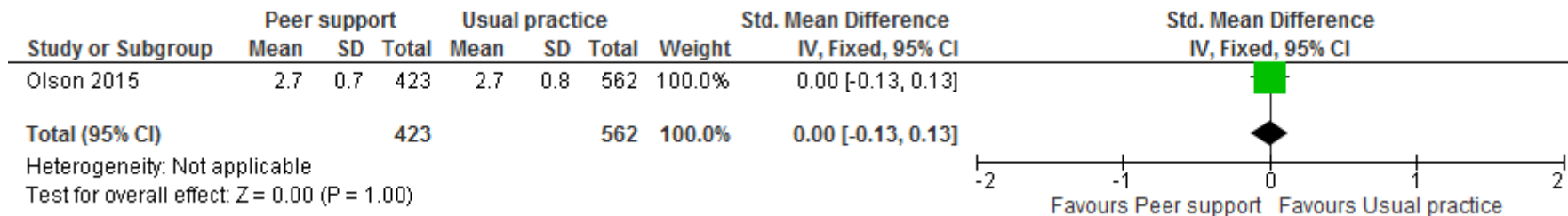


E.1.10.2 Productivity



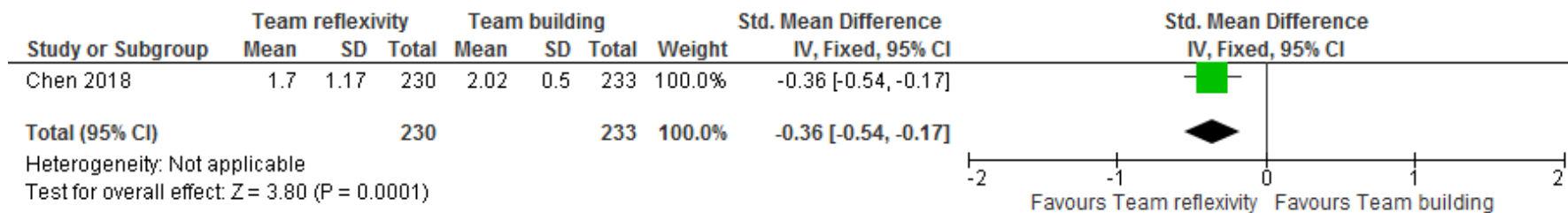
E.1.11 STAR vs usual practice

E.1.11.1 Mental health symptoms



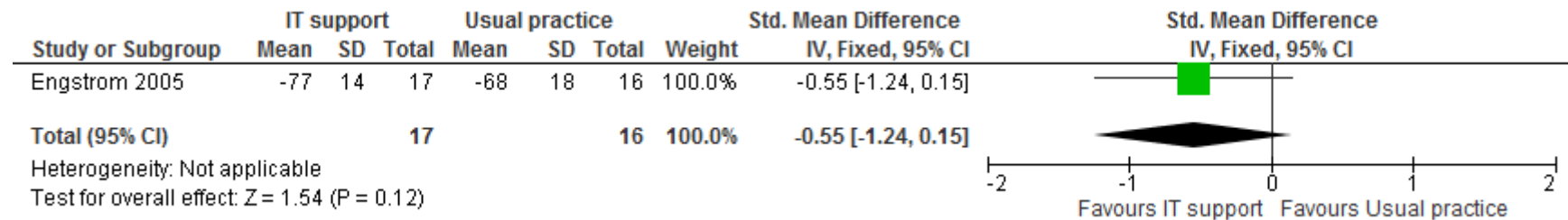
E.1.12 Team reflexivity vs team building

E.1.12.1 Job stress

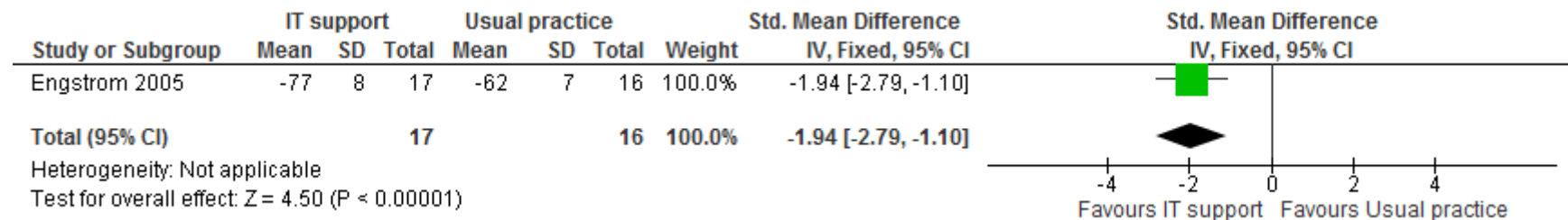


E.1.13 IT support

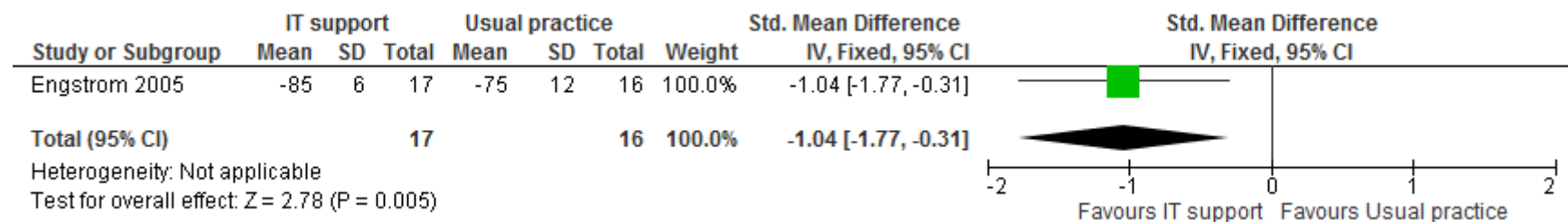
E.1.13.1 Job stress



E.1.13.2 Job satisfaction

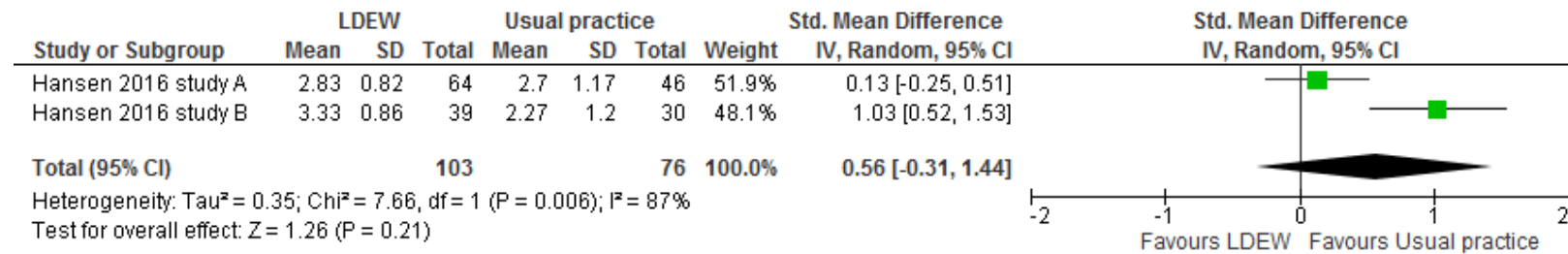


E.1.13.3 Quality of life

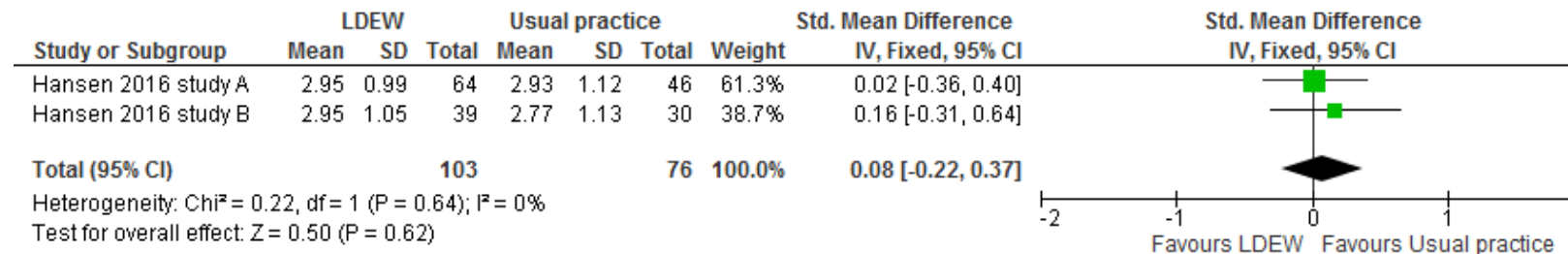


E.1.14 Leadership development and employee wellness (LDEW) intervention vs usual care

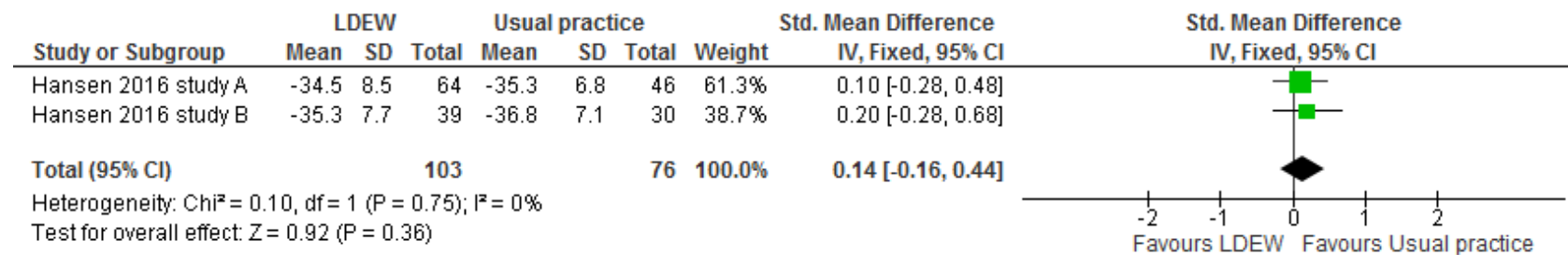
E.1.14.1 Absenteeism



E.1.14.2 Presenteeism



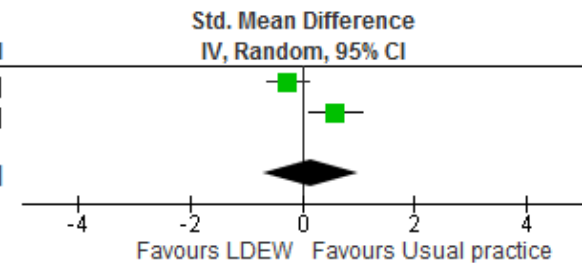
E.1.14.3 Quality of life



E.1.14.4 Work climate

Study or Subgroup	LDEW			Usual practice			Weight	Std. Mean Difference IV, Random, 95% CI
	Mean	SD	Total	Mean	SD	Total		
Hansen 2016 study A	-124	20	64	-119	18	46	51.7%	-0.26 [-0.64, 0.12]
Hansen 2016 study B	-122	25	39	-136	21	30	48.3%	0.59 [0.11, 1.08]
Total (95% CI)			103			76	100.0%	0.15 [-0.68, 0.99]

Heterogeneity: Tau² = 0.31; Chi² = 7.30, df = 1 (P = 0.007); I² = 86%
Test for overall effect: Z = 0.36 (P = 0.72)

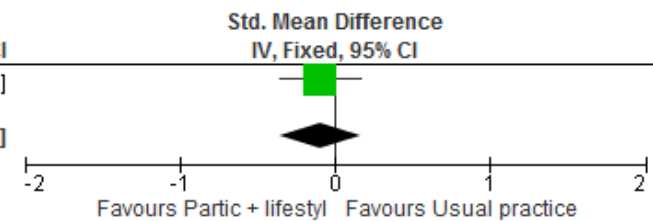


E.1.15 Participatory + lifestyle vs usual practice

E.1.15.1 Job stress

Study or Subgroup	Participatory + lifestyle			Usual practice			Weight	Std. Mean Difference IV, Fixed, 95% CI
	Mean	SD	Total	Mean	SD	Total		
Maes 1998	0.09	0.108	113	0.1	0.099	113	100.0%	-0.10 [-0.36, 0.16]
Total (95% CI)			113			113	100.0%	-0.10 [-0.36, 0.16]

Heterogeneity: Not applicable
Test for overall effect: Z = 0.72 (P = 0.47)

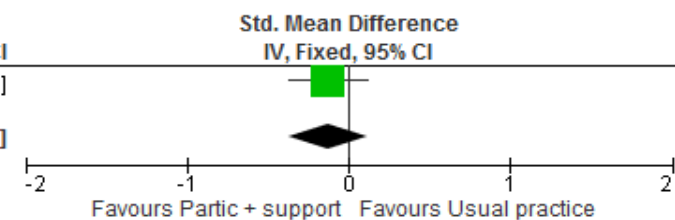


E.1.16 Participatory + support group vs usual practice

E.1.16.1 Job stress

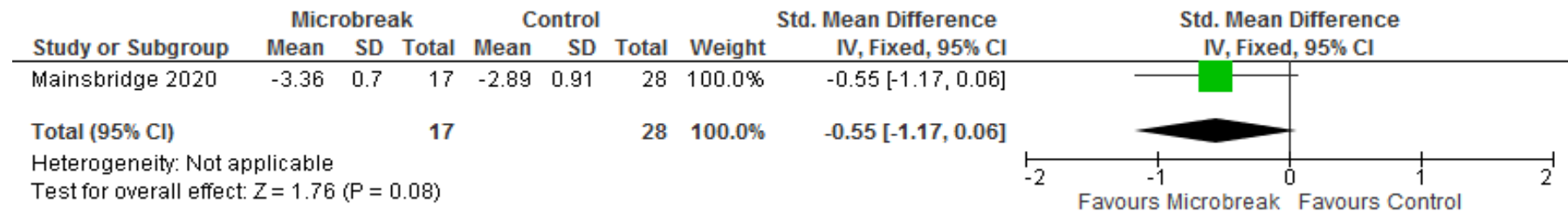
Study or Subgroup	Participatory + support			Usual practice			Weight	Std. Mean Difference IV, Fixed, 95% CI
	Mean	SD	Total	Mean	SD	Total		
Le Blanc 2007	1.53	0.92	208	1.65	1	96	100.0%	-0.13 [-0.37, 0.12]
Total (95% CI)			208			96	100.0%	-0.13 [-0.37, 0.12]

Heterogeneity: Not applicable
Test for overall effect: Z = 1.02 (P = 0.31)

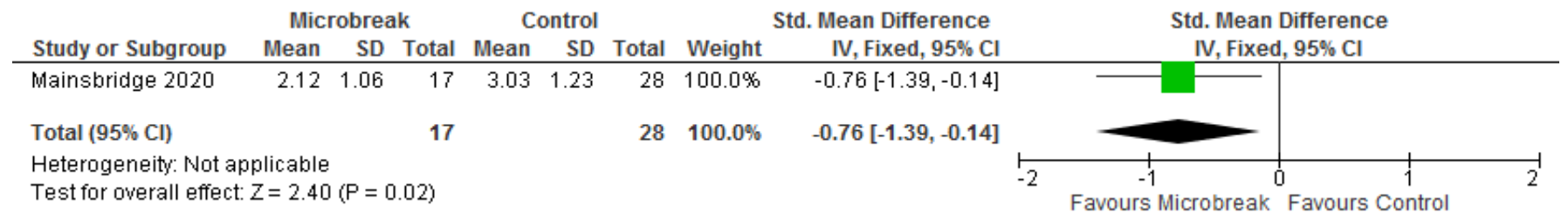


E.1.17 Microbreaks

E.1.17.1 Mental wellbeing

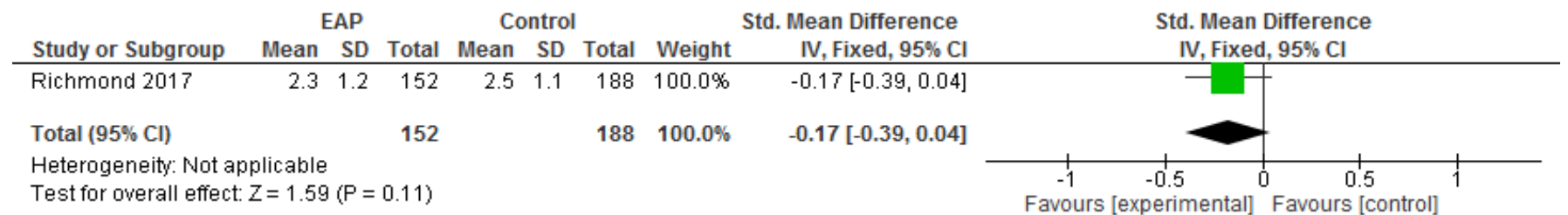


E.1.17.2 Job stress

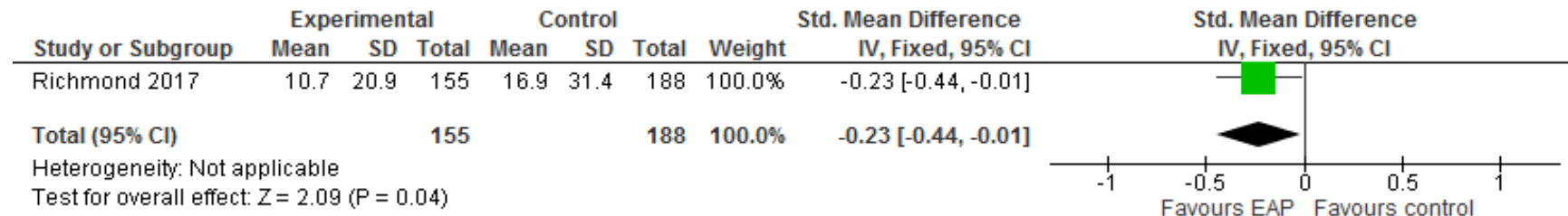


E.1.18 Employee assistance programs

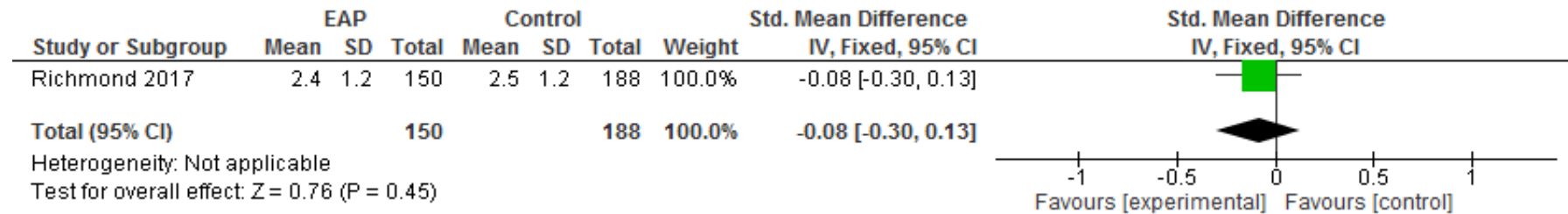
E.1.18.1 Presenteeism



E.1.18.2 Absenteeism



E.1.18.3 Workplace distress



Appendix F – GRADE profiles

F.1 Universal interventions

F.1.1 GRADE

F.1.1.1 Job crafting vs usual practice

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Job crafting	Usual practice	Relative (95% CI)	Absolute	
Mental wellbeing - RCT (Better indicated by lower values)											
1	randomised trials	serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	23	39	-	SMD 0.01 lower (0.53 lower to 0.5 higher)	LOW
Mental wellbeing - Non-RCT (Better indicated by lower values)											
4	observational studies	very serious ⁵	no serious inconsistency ⁶	no serious indirectness ³	serious ⁴	none	189	140	-	SMD 0.19 lower (0.42 lower to 0.03 higher)	VERY LOW
Job stress (Better indicated by lower values)											
2	randomised trials	very serious ⁵	serious ⁷	no serious indirectness ³	serious ⁴	none	63	45	-	SMD 0.65 lower (1.38 lower to 0.08 higher)	VERY LOW
Job satisfaction - RCT (Better indicated by lower values)											
3	randomised trials	serious ⁵	very serious ⁸	no serious indirectness ³	serious ⁴	none	193	208	-	SMD 0.27 lower (0.84 lower to 0.3 higher)	VERY LOW
Job satisfaction - non-RCT (Better indicated by lower values)											

4	observational studies	very serious ⁵	no serious inconsistency ⁶	no serious indirectness ³	serious ⁴	none	194	149	-	SMD 0.03 higher (0.19 lower to 0.24 higher)	VERY LOW
Productivity (Better indicated by lower values)											
1	randomised trials	serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	23	39	-	SMD 0.32 lower (0.84 lower to 0.2 higher)	LOW
Mental health symptoms (Better indicated by lower values)											
1	observational studies	serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	39	47	-	SMD 0.06 lower (0.48 lower to 0.36 higher)	VERY LOW

¹ Serious concerns due to self-reported outcomes

² Single study analysis

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ Serious concerns as 95% CIs cross the line of no effect

⁵ Very serious concerns due to missing outcome data and self-reported outcomes

⁶ No concerns as I-squared is less than 50%

⁷ Serious concerns as I-squared between 50% and 75%

⁸ Very serious concerns as I-squared is greater than 75%

F.1.1.2 Participatory intervention vs usual practice

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Participatory intervention	Control	Relative (95% CI)	Absolute	
Mental wellbeing (Better indicated by lower values)											
2	observational studies	serious ¹	very serious ²	no serious indirectness ³	serious ⁴	none	402	405	-	SMD 0.15 lower (0.76 lower to 0.47 higher)	VERY LOW
Job stress - RCT (Better indicated by lower values)											
4	randomised trials	very serious ⁵	very serious ²	no serious indirectness ³	serious ⁴	none	734	523	-	SMD 0.15 lower (0.43 lower to 0.13 higher)	VERY LOW
Job stress - non-RCT (Better indicated by lower values)											
3	observational studies	serious ¹	serious ⁶	no serious indirectness ³	serious ⁴	none	675	1027	-	SMD 0.15 lower (0.34 lower to 0.05 higher)	VERY LOW

Job stress - dichotomous											
1	randomised trials	serious ¹	NA ⁷	no serious indirectness ³	serious ⁴	none	20/65 (30.8%)	17/70 (24.3%)	RR 1.27 (0.73 to 2.2)	66 more per 1000 (from 66 fewer to 291 more)	LOW
Mental health symptoms - RCT (Better indicated by lower values)											
2	randomised trials	serious ¹	no serious inconsistency ⁸	no serious indirectness ³	serious ⁴	none	188	204	-	SMD 0.05 higher (0.15 lower to 0.25 higher)	LOW
Mental health symptoms - non-RCT (Better indicated by lower values)											
1	observational studies	serious ¹	NA ⁷	no serious indirectness ³	serious ⁴	none	302	308	-	SMD 0.14 lower (0.3 lower to 0.02 higher)	VERY LOW
Work climate - RCT (Better indicated by lower values)											
1	randomised trials	serious ¹	NA ⁷	no serious indirectness ³	serious ⁴	none	148	166	-	SMD 0.18 lower (0.4 lower to 0.05 higher)	LOW
Work climate - non-RCT (Better indicated by lower values)											
2	observational studies	very serious ⁵	no serious inconsistency ⁸	no serious indirectness ³	serious ⁴	none	373	717	-	SMD 0.02 lower (0.16 lower to 0.12 higher)	VERY LOW
Absenteeism - RCT (Better indicated by lower values)											
1	randomised trials	no serious risk of bias ⁹	NA ⁷	no serious indirectness ³	no serious imprecision ¹⁰	none	167	145	-	SMD 0.95 lower (1.18 to 0.71 lower)	HIGH
Absenteeism - Non-RCT (Better indicated by lower values)											
1	observational studies	no serious risk of bias ⁹	NA ⁷	no serious indirectness ³	serious ⁴	none	120	552	-	SMD 0.19 higher (0.01 lower to 0.39 higher)	VERY LOW
Job satisfaction (Better indicated by lower values)											
3	randomised trials	serious ¹	very serious ²	no serious indirectness ³	serious ¹⁰	none	675	464	-	SMD 0.02 lower (0.34 lower to 0.31 higher)	VERY LOW
Job satisfaction											
1	randomised trials	very serious ⁵	NA ⁷	no serious indirectness ³	no serious imprecision ¹⁰	none	26/65 (40%)	32/70 (45.7%)	RR 0.88 (0.59 to 1.3)	55 fewer per 1000 (from 187 fewer to 137 more)	LOW

Productivity (Better indicated by lower values)											
1	observational studies	serious ¹	NA ⁷	no serious indirectness ³	serious ¹⁰	none	99	91	-	SMD 0.05 higher (0.24 lower to 0.33 higher)	VERY LOW

¹ Serious concerns due to self-reported outcomes

² Very serious concerns as I-squared is greater than 75%

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ Serious concerns as 95% CIs cross the line of no effect

⁵ Very serious concerns due to missing outcome data and self-reported outcomes

⁶ Serious concerns as I-squared is between 50% and 75%

⁷ Single study analysis

⁸ No concerns as I-squared is less than 50%

⁹ No concerns over risk of bias

¹⁰ No concerns over imprecision as 95% CIs do not cross the line of no effect.

F.1.1.3 Mental health first aid (MHFA) vs usual practice

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	MHFA	Usual practice	Relative (95% CI)	Absolute	
Mental wellbeing (Better indicated by lower values)											
1	randomised trials	very serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	208	141	-	SMD 0.06 lower (0.27 lower to 0.15 higher)	VERY LOW
Mental health symptoms (Better indicated by lower values)											
1	randomised trials	very serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	208	141	-	SMD 0.02 higher (0.19 lower to 0.24 higher)	VERY LOW
Mental health symptoms											
1	randomised trials	very serious ⁵	NA ²	no serious indirectness ³	serious ⁴	none	114/221 (51.6%)	60/102 (58.8%)	RR 0.88 (0.71 to 1.08)	71 fewer per 1000 (from 171 fewer to 47 more)	VERY LOW
Mental health literacy (Better indicated by lower values)											

2	randomised trials	very serious ⁵	no serious inconsistency ⁶	no serious indirectness ³	no serious imprecision ⁷	none	420	313	-	SMD 0.49 lower (0.64 to 0.34 lower)	LOW
---	-------------------	---------------------------	---------------------------------------	--------------------------------------	-------------------------------------	------	-----	-----	---	-------------------------------------	-----

¹ Very serious concerns due to missing data and self-reported outcomes

² Single study analysis

³ No concerns as study population, intervention, comparator, and outcome match the review protocol

⁴ Serious concerns as 95% CIs cross the line of no effect

⁵ Very serious concerns due to bias in randomisation and self-reported outcomes

⁶ No concerns as I-squared is less than 50%

⁷ No concerns as 95% CIs do not cross the line of no effect.

F.1.1.4 Leadership development vs usual practice

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Leadership development	Control	Relative (95% CI)	Absolute	
Mental wellbeing (Better indicated by lower values)											
1	observational studies	very serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	146	222	-	SMD 0.09 higher (0.12 lower to 0.3 higher)	VERY LOW
Job satisfaction (Better indicated by lower values)											
1	observational studies	serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	146	222	-	SMD 0.01 lower (0.22 lower to 0.2 higher)	VERY LOW
Work climate (Better indicated by lower values)											
1	observational studies	very serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	146	222	-	SMD 0.06 lower (0.27 lower to 0.15 higher)	VERY LOW

¹ Very serious concerns due to lack of information around missing data and self-reported outcomes

² Single study analysis

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ Serious concerns as 95% CIs cross the line of no effect

⁵ Serious concerns due to self-reported outcome.

F.1.1.5 2 week rotations vs 4-week rotations

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	2-week rotations	4-week rotations	Relative (95% CI)	Absolute	
Mental health symptoms											
1	randomised trials	serious ¹	NA ²	no serious indirectness ³	no serious imprecision ⁴	none	24/128 (18.8%)	27/74 (36.5%)	RR 0.51 (0.32 to 0.82)	179 fewer per 1000 (from 66 fewer to 248 fewer)	MODERATE

¹ Serious concerns due to self-reported outcomes

² Single study analysis

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ No concerns as 95% CIs do not cross the line of no effect.

F.1.1.6 Civility intervention vs usual practice

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Civility intervention	Usual practice	Relative (95% CI)	Absolute	
Mental wellbeing (Better indicated by lower values)											
1	observational studies	very serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	181	726	-	SMD 0.02 higher (0.14 lower to 0.18 higher)	VERY LOW
Job stress (Better indicated by lower values)											
1	observational studies	very serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	181	726	-	SMD 0.02 higher (0.14 lower to 0.18 higher)	VERY LOW

Absenteeism (Better indicated by lower values)											
1	observational studies	very serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	181	726	-	SMD 0.16 lower (0.32 lower to 0.01 higher)	VERY LOW
Job satisfaction (Better indicated by lower values)											
1	observational studies	very serious ¹	NA ²	no serious indirectness ³	no serious imprecision ⁵	none	181	726	-	SMD 0.16 lower (0.33 lower to 0 higher)	VERY LOW
Work climate (Better indicated by lower values)											
1	observational studies	very serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	181	726	-	SMD 0.11 lower (0.27 lower to 0.06 higher)	VERY LOW

¹ Very serious concerns due to missing data and self-reported outcomes

² Single study analysis

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ Serious concerns as 95% CIs cross the line of no effect

⁵ No concerns as 95% CIs do not cross the line of no effect.

F.1.1.7 Digital stress prevention vs usual practice

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Digital stress prevention	Usual practice	Relative (95% CI)	Absolute	
Job stress (Better indicated by lower values)											
1	observational studies	serious ¹	NA ²	no serious indirectness ³	no serious imprecision ⁴	none	70	68	-	SMD 0.06 lower (0.4 lower to 0.27 higher)	VERY LOW

¹ Serious concerns due to self-reported outcomes

² Single study analysis

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ Serious concerns as 95% CIs cross the line of no effect.

F.1.1.8 Health promotion vs usual practice

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Health promotion	Control	Relative (95% CI)	Absolute	
Job stress (Better indicated by lower values)											
1	randomised trials	serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	1080	1020	-	SMD 0.01 higher (0.08 lower to 0.1 higher)	LOW
Quality of life - RCT (Better indicated by lower values)											
1	randomised trials	serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	1080	1020	-	SMD 0.03 higher (0.05 lower to 0.12 higher)	LOW
Quality of life - Non-RCT (Better indicated by lower values)											
1	observational studies	serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	52	51	-	SMD 0.23 lower (0.61 lower to 0.16 higher)	VERY LOW

¹ Serious concerns due to self-reported outcomes

² Single study analysis

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ Serious concerns as 95% CIs cross the line of no effect.

F.1.1.9 Peer support vs usual practice

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Peer support	Usual practice	Relative (95% CI)	Absolute	
Mental wellbeing (Better indicated by lower values)											
1	randomised trials	serious ¹	NA ²	no serious indirectness ³	no serious imprecision ⁴	none	24	25	-	SMD 0.58 lower (1.15 lower to 0 higher)	MODERATE

Job stress (Better indicated by lower values)											
1	randomised trials	serious ¹	NA ²	no serious indirectness ³	serious ⁵	none	24	25	-	SMD 0.16 higher (0.4 lower to 0.72 higher)	LOW
Job satisfaction (Better indicated by lower values)											
1	randomised trials	serious ¹	NA ²	no serious indirectness ³	serious ⁵	none	24	25	-	SMD 0.57 lower (1.14 lower to 0.01 higher)	LOW

¹ Serious concerns due to self-reported outcomes

² Single study analysis

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ No concerns as 95% CIs do not cross the line of no effect

⁵ Serious concerns as 95% CIs cross the line of no effect.

F.1.1.10 PsyCap vs usual practice

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	PsyCap	Usual practice	Relative (95% CI)	Absolute	
Mental wellbeing (Better indicated by lower values)											
1	randomised trials	no serious risk of bias ¹	NA ²	no serious indirectness ³	no serious imprecision ⁴	none	105	129	-	SMD 0.51 lower (0.77 to 0.25 lower)	HIGH
Productivity (Better indicated by lower values)											
1	randomised trials	no serious risk of bias ¹	NA ²	no serious indirectness ³	serious ⁵	none	105	129	-	SMD 0.02 higher (0.24 lower to 0.27 higher)	MODERATE

¹ Low risk of bias

² Single study analysis

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ No concerns as 95% CIs do not cross the line of no effect

⁵ Serious concerns as 95% CIs do not cross the line of no effect.

F.1.1.11 STAR vs usual practice

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	STAR	Usual practice	Relative (95% CI)	Absolute	
Mental health symptoms (Better indicated by lower values)											
1	randomised trials	very serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	423	562	-	SMD 0.00 higher (0.13 lower to 0.13 higher)	VERY LOW

¹ Very serious concerns due to missing data and self-reported outcomes

² Single study analysis

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ No concerns as 95% CIs do not cross the line of no effect.

F.1.1.12 Team reflexivity vs team building activity.

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Team reflexivity	Team building	Relative (95% CI)	Absolute	
Job stress (Better indicated by lower values)											
1	observational studies	serious ¹	NA ²	no serious indirectness ³	no serious imprecision ⁴	none	230	233	-	SMD 0.36 lower (0.54 to 0.17 lower)	VERY LOW

¹ Serious concerns due to self-reported outcomes

² Single study analysis

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ No concerns as 95% CIs do not cross the line of no effect.

F.1.1.13 IT support vs usual practice

Quality assessment							No of patients		Effect		Quality
--------------------	--	--	--	--	--	--	----------------	--	--------	--	---------

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Leadership development + employee wellness	Usual practice	Relative (95% CI)	Absolute	
Job stress (Better indicated by lower values)											
1	observational studies	very serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	17	16	-	SMD 0.55 lower (1.24 lower to 0.15 higher)	VERY LOW
Job satisfaction (Better indicated by lower values)											
1	observational studies	very serious ¹	NA ²	no serious indirectness ³	no serious imprecision ⁵	none	17	16	-	SMD 1.94 lower (2.79 to 1.1 lower)	VERY LOW
Quality of life (Better indicated by lower values)											
1	observational studies	very serious ¹	NA ²	no serious indirectness ³	no serious imprecision ⁵	none	17	16	-	SMD 1.04 lower (1.77 to 0.31 lower)	VERY LOW

¹ Very serious concerns due to missing data and self-reported outcomes

² Single study analysis

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ Serious concerns as 95% CIs cross the line of no effect

⁵ No concerns as 95% CIs do not cross the line of no effect.

F.1.1.14 Leadership development and employee wellness (LDEW) intervention vs usual practice

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Leadership development + employee wellness	Usual practice	Relative (95% CI)	Absolute	
Absenteeism (Better indicated by lower values)											
2	observational studies	very serious ¹	very serious ²	no serious indirectness ³	serious ⁴	none	103	76	-	SMD 0.56 higher (0.31 lower to 1.44 higher)	VERY LOW
Presenteeism (Better indicated by lower values)											

2	observational studies	very serious ¹	no serious inconsistency ⁵	no serious indirectness ³	serious ⁴	none	103	76	-	SMD 0.08 higher (0.22 lower to 0.37 higher)	VERY LOW
Quality of life (Better indicated by lower values)											
2	observational studies	very serious ¹	no serious inconsistency ⁵	no serious indirectness ³	serious ⁴	none	103	76	-	SMD 0.14 higher (0.16 lower to 0.44 higher)	VERY LOW
Work climate (Better indicated by lower values)											
2	observational studies	very serious ¹	very serious ²	no serious indirectness ³	serious ⁴	none	103	76	-	SMD 0.15 higher (0.68 lower to 0.99 higher)	VERY LOW

¹ Very serious concerns due to lack of detail around missing data and self-reported outcomes

² Very serious concerns as I-squared is greater than 75%

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ Serious concerns as 95% CIs cross the line of no effect

⁵ No concerns as I-squared is less than 50%

F.1.1.15 Participatory intervention with lifestyle intervention vs usual practice

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Participatory + lifestyle	Usual practice	Relative (95% CI)	Absolute	
Job stress (Better indicated by lower values)											
1	randomised trials	serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	113	113	-	SMD 0.1 lower (0.36 lower to 0.16 higher)	LOW

¹ Serious concerns due to self-reported outcomes

² Single study analysis

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ Serious concerns as 95% CIs cross the line of no effect.

F.1.1.16 Participatory intervention with support group vs usual practice

Quality assessment							No of patients		Effect		Quality
--------------------	--	--	--	--	--	--	----------------	--	--------	--	---------

No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Participatory + support group		Usual practice	Relative (95% CI)	Absolute	
Job stress (Better indicated by lower values)												
1	randomised trials	serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	208	96	-	SMD 0.13 lower (0.37 lower to 0.12 higher)	LOW	

¹ Serious concerns due to self-reported outcomes

² Single study analysis

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ Serious concerns as 95% CIs cross the line of no effect.

F.1.1.17 Microbreaks

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Microbreaks vs usual practice	Control	Relative (95% CI)	Absolute	
Mental wellbeing (Better indicated by lower values)											
1	randomised trials	serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	17	28	-	SMD 0.55 lower (1.17 lower to 0.06 higher)	LOW
Job stress (Better indicated by lower values)											
1	randomised trials	serious ¹	NA ²	no serious indirectness ³	no serious imprecision ⁵	none	17	28	-	SMD 0.76 lower (1.39 to 0.14 lower)	MODERATE

¹ Serious concerns due to self-reported outcomes

² Single-study analysis

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ Some concerns as 95% CIs cross the line of no effect

⁵ No concerns as 95% CIs do not cross the line of no effect.

F.1.1.18 Employee assistance programs

Quality assessment							No of patients		Effect		Quality
No of studies	Design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Employee Assistance Programs	Control	Relative (95% CI)	Absolute	
Presenteeism (Better indicated by lower values)											
1	observational studies	very serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	152	188	-	SMD 0.17 lower (0.39 lower to 0.04 higher)	VERY LOW
Absenteeism (Better indicated by lower values)											
1	observational studies	very serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	155	188	-	SMD 0.23 lower (0.44 lower to 0.01 lower)	VERY LOW
Workplace distress (Better indicated by lower values)											
1	observational studies	very serious ¹	NA ²	no serious indirectness ³	serious ⁴	none	150	188	-	SMD 0.08 lower (0.30 lower to 0.13 higher)	VERY LOW

¹ Very serious concerns regarding representativeness of sample, participant attrition between 35% to 45%, use self-report measures utilised and potential confounding due to a lack of blinding and allocation concealment

² Single study analysis

³ No concerns as study population, intervention, comparator and outcome match the review protocol

⁴ Serious concerns as 95% CIs cross the line of no effect.

F.1.2 GRADE-CERQual

F.1.2.1 Generic organisational interventions

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
Taking breaks						
Benefits and feasibility Scheduling a coffee break was viewed as feasible by those already	Hall 2018	Major concerns 1 study with high risk of bias.	No concerns	Major concerns	Moderate concerns	Low confidence Concerns re potential

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
doing this and as being beneficial as it provided the opportunity to mix with colleagues, meet physical needs such as having a drink, and having a few minutes respite from 'being the doctor' However scheduling a lunch break was not generally seen as being feasible.		Recruitment of GPs was from one network and via snowballing and so may have introduced recruitment bias. Relationship between researcher and participants is not clear.	Finding reflects all data reported on this theme.	Data from a single population of employees	It is unclear whether the participants were commenting on an intervention they had personally experienced or if they were expressing views on an intervention that they thought may be helpful.	recruitment bias and lack of clarity on whether participants had actually experienced the intervention.
Support systems						
Suggested support systems Having social support both within the practice, peer to peer, and from outside of the practice was found to be helpful in preventing burnout. Participants suggested buddying and mentoring systems and meetings to check how colleagues were doing.	Hall 2018	Major concerns 1 study with high risk of bias. Recruitment of GPs was from one network and via snowballing and so may have introduced recruitment bias. Relationship between researcher and participants is not clear	No concerns Finding reflects all data reported on this theme.	Major concerns Data from a single population of employees	Moderate concerns It is unclear whether the participants were commenting on an intervention they had personally experienced or if they were expressing views on an intervention that they thought may be helpful.	Low confidence Concerns re potential recruitment bias and lack of clarity on whether participants had actually experienced the intervention.

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
Importance of psychological strategies						
<p>Maintaining awareness of risk of burnout</p> <p>Maintaining awareness of the risk of burnout was noted as a useful strategy by some participants. It was also noted that this could be implemented in practices through discussions and meetings, and externally at the training stage. It was highlighted that awareness was needed at the individual, practice and external levels.</p> <p>Control over workload</p> <p>Some GPs (in particular locums) used control over how much work they did and when and where they did their work, as a strategy to prevent burnout. Many had chosen this way of working specifically to prevent them from burning out, or as a way forward to protect their well-being after previously working full-time and suffering from burnout or depression.</p>	Hall 2018	<p>Major concerns</p> <p>1 study with high risk of bias. Recruitment of GPs was from one network and via snowballing and so may have introduced recruitment bias.</p> <p>Relationship between researcher and participants is not clear</p>	<p>No concerns</p> <p>Finding reflects all data reported on this theme.</p>	<p>Major concerns</p> <p>Data from a single population of employees</p>	<p>Moderate concerns</p> <p>It is unclear whether the participants were commenting on an intervention they had personally experienced or if they were expressing views on an intervention that they thought may be helpful.</p>	<p>Low confidence</p> <p>Concerns regarding potential recruitment bias and lack of clarity on whether participants had actually experienced the intervention.</p>
Organisation intervention: Barriers to leader engagement						
<p>Perceptual and emotional barriers</p> <p>A lack of confidence in intervention sustainability, lack of buy-in related to perceived lack of relevance or interest in the goals of the intervention were barriers to leader engagement.</p>	Karanika-Murray, 2018	<p>Minor concerns.</p> <p>1 study with low risk of bias</p>	<p>No concerns</p> <p>Finding reflects all data reported on this theme.</p>	<p>No concerns</p> <p>Data derived from two public sector organisations (a hospital and local government) and involved Intervention leads, intervention</p>	<p>Minor concerns</p> <p>One study took place in two public sector organisations (a hospital and local government)</p>	<p>Moderate confidence.</p> <p>Data derived from 1 study of low risk of bias from implementors of an</p>

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
<p>Authority Line managers expressed feelings that their own authority was being undermined, and that structural changes and excessive workload were barriers to their engagement.</p> <p>Poor quality of communication Weak or a lack of people management skills necessary to support staff involvement in the broader intervention program and specific activities was a barrier to intervention engagement.</p> <p>Line Managers highlighted that the highly hierarchical structure within respective settings and inconsistent messages due to loss of information cascaded down the hierarchy was a barrier to engagement.</p> <p>Organizational factors A history of failed change and the presence of too many layers in the hierarchy and bureaucracy, and the need for work planning considerations and prioritization were considered factors explaining leader disengagement and lack of support for the intervention.</p>				champions and implementation team of external consultants.	and findings may not necessarily be transferrable to other workplaces in the public sector and other sectors.	organisational intervention in two large UK public sector organisation. Potential limitations on applicability to other sectors and workplaces
Organisation intervention: Dealing with barriers to leader engagement						

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
<p>Formalized and targeted communication Engaging in discussions and meetings with Senior and Line Managers and highlighting the potential quick intervention wins could facilitate leadership buy-in</p> <p>Perspective-taking Initiating reactive ad hoc discussions, addressing concerns, perspective-taking, active listening, incorporating suggestions into intervention plans and recognizing the leader's contribution to the intervention could overcome barrier to leadership engagement</p>	Karanika-Murray, 2018	Minor concerns. 1 study with low risk of bias	No concerns Finding reflects all data reported on this theme.	No concerns Data derived from two public sector organisations (a hospital and local government) and involved Intervention leads, intervention champions and implementation team of external consultants.	Minor concerns One study took place in two public sector organisations (a hospital and local government) and findings may not necessarily be transferrable to other workplaces in the public sector and other sectors.	Moderate confidence. Data derived from 1 study of low risk of bias from implementors of an organisational intervention in two large UK public sector organisation. Potential limitations on applicability to other sectors and workplaces
Organisation intervention: facilitating leader engagement						
<p>Regular and quality communication The use of consistent messages and unambiguous language, encouraging follow-up discussions and face-to-face meetings and keeping communication lines open were outlined as facilitating leadership engagement.</p> <p>Showing consideration for the leader's role and needs Getting acquainted with the leaders, adopting a genuine and personal approach, getting to know the</p>	Karanika-Murray, 2018	Minor concerns. 1 study with low risk of bias	No concerns Finding reflects all data reported on this theme.	No concerns Data derived from two public sector organisations (a hospital and local government) and involved Intervention leads, intervention champions and implementation team of external consultants.	Minor concerns One study took place in two public sector organisations (a hospital and local government) and findings may not necessarily be transferrable to other workplaces in the public	Moderate confidence. Data derived from 1 study of low risk of bias from implementors of an organisational intervention in two large UK public sector organisation. Potential limitations on applicability to

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
<p>leader's perspective, and demonstrating how the intervention can add value to their daily work were outlined as facilitating leadership engagement.</p> <p>Participants outlined that showing respect by not acting without Senior Managers approval and ensuring a professional and open relationship facilitated leadership engagement.</p> <p>Demonstrating impact on the business</p> <p>Providing evidence that investment in the intervention is worthwhile, demonstrating the value and benefits of the initiatives, and showing how the intervention would be supporting work culture and business priorities were considered to facilitate leadership engagement.</p>					sector and other sectors.	other sectors and workplaces
Organisation intervention: factors accelerating leader engagement						
<p>Cascading targeted messages</p> <p>Participants outlined that regularly targeting of messages specifically the Senior Managers and, in turn, cascading to the Line Managers accelerated leadership engagement.</p> <p>Allowing time and tuning the pace of engagement</p> <p>Participants outlined that there is a need to find the right time and pace for each leader when communicating</p>	Karanika-Murray, 2018	Minor concerns. 1 study with low risk of bias	No concerns Finding reflects all data reported on this theme.	No concerns Data derived from two public sector organisations (a hospital and local government) and involved Intervention leads, intervention champions and implementation team of external consultants.	Minor concerns One study took place in two public sector organisations (a hospital and local government) and findings may not necessarily be transferrable to	Moderate confidence. Data derived from 1 study of low risk of bias from implementors of an organisational intervention in two large UK public sector

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
<p>or implementing the intervention, to facilitate easier integration into their normal workflow.</p> <p>Projected benefits of change Appreciating the benefits of the anticipated change on daily work was considered to facilitate leadership engagement</p>					other workplaces in the public sector and other sectors.	organisation. Potential limitations on applicability to other sectors and workplaces
Organisation intervention: Factors linked to differences in engagement between leadership levels						
<p>The leader's position in the hierarchy Participants outlined that different roles and accountability were a factor that influenced engagement between leadership levels and this needs to be accounted for.</p> <p>The two levels were interrelated, such that lack of SM involvement is a risk to LM engagement. Senior Managers had a wider reach, more overall control and decision making. Line Managers undertook more decision-making over operational activities and had greater influential at the team level.</p> <p>The leader's authority Consideration of whose opinion (senior or line manager) staff respected the most impacted engagement.</p>	Karanika-Murray, 2018	Minor concerns. 1 study with low risk of bias	No concerns Finding reflects all data reported on this theme.	No concerns Data derived from two public sector organisations (a hospital and local government) and involved Intervention leads, intervention champions and implementation team of external consultants.	Minor concerns One study took place in two public sector organisations (a hospital and local government) and findings may not necessarily be transferrable to other workplaces in the public sector and other sectors.	Moderate confidence. Data derived from 1 study of low risk of bias from implementors of an organisational intervention in two large UK public sector organisation. Potential limitations on applicability to other sectors and workplaces

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
<p>The scope of change</p> <p>The breadth and pervasiveness of change was seen to impact engagement between leadership levels, with Line Mangers more cautious and limited by their remit which may impact their engagement.</p>						
Coaching and mentoring intervention: Increasing skills						
<p>Confidence improvement and increased self-awareness</p> <p>Participants reported that as a result of coaching there was a significant difference in areas of their working life which included seeing things in perspective, better work life balance and career development.</p> <p>Work-life balance, seeing things in perspective.</p> <p>Participants reported that the intervention improved confidence and provided them with skills which increased self-awareness regarding mental health and wellbeing.</p> <p>Acquisition of skills to address potential issues.</p> <p>Participants outlined that the intervention provided skills that could help in addressing potential issues, such problem-solving, reflection and seeing things in perspective</p>	Bachkirova, 2015	Major concerns. 1 study with high risk of bias. Method used, limited justification for approach adopted in analysis, lack of information regarding intervention process and set-up and measures put in place to manage bias in intervention development, delivery and evaluation.	No concerns Finding reflects all data reported on this theme	Minor concerns Data derived one study based on one open ended question in a questionnaire with 120 doctors and dentists.	Minor concerns One study with views from doctors and dentist (sector of work not specified focused on coaching and mentoring only may not be transferrable to other employees in other workplaces in other sectors.	Low confidence Data derived from 1 study with high risk of bias derived from an open ended question from a questionnaire with doctors and dentists attendees. Potential limitations on applicability to other employees, sectors and workplaces

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
Coaching and mentoring intervention: An opportunity to be heard						
Being listened to and sharing Participants expressed that the intervention provided an opportunity to share and be listened to	Bachkirova, 2015	Major concerns. 1 study with high risk of bias. Method used, limited justification for approach adopted in analysis, lack of information regarding intervention process and set-up and measures put in place to manage bias in intervention development, delivery and evaluation.	No concerns Finding reflects all data reported on this theme	Minor concerns Data derived one study based on one open ended question in a questionnaire with 120 doctors and dentists.	Minor concerns One study with views from doctors and dentist (sector of work not specified focused on coaching and mentoring only may not be transferrable to other employees in other workplaces in other sectors.	Low confidence Data derived from 1 study with high risk of bias derived from an open ended question from a questionnaire with doctors and dentists attendees. Potential limitations on applicability to other employees, sectors and workplaces

F.1.2.2 Mental health first aid

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
Motivators and facilitators to becoming a Mental Health First Aider						
Altruism	Kidger 2016	Moderate concerns	No concerns	Minor concerns	Minor concerns	Moderate confidence

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
<p>Wanting to help others and to ‘make a difference. In some cases, this was because people had experienced poor mental health themselves and others felt they had the right sort of personality traits to help. Some found others tended to come to them with their problems and so becoming an MHFA helped formalise the support they gave.</p> <p>Part of a wider organisational approach In some cases, MHFA training was offered as part of a wider organisational approach to mental wellbeing, though some participants saw it as ‘being seen to be doing something’.</p> <p>A desire to improve knowledge and confidence to help. Participants reported taking the MHFA training to provide them with additional skills and confidence to help colleagues.</p> <p>Mandatory versus voluntary roles In some organisations, becoming a MHFA was voluntary but in others it was mandatory for employees in certain roles. Some participants felt</p>	Narayanasamy 2018	2 studies with moderate risk of bias. In one study there is risk of recruitment bias as study details in most cases were passed only to employees likely to be interested in mental health. In the same study, it is unclear how many researchers were involved in the thematic analysis. In both studies the relationship between researcher and participants is unclear.	Finding reflects all data reported on this theme.	Concerns in 1 study that relatively low numbers of people who had received support from MHFAs were recruited. However, some MHFAs had received support from other MHFAs and so these two groups were not mutually exclusive.	One study took place in secondary schools and findings may not necessarily be transferrable to other types of schools or workplaces. However, the second study took places in a range of workplaces from the public, private and third sector.	Some risk of recruitment bias in one study but overall, both studies provide useful insight into the views and experiences of both those providing Mental Health First Aid. and the views of employees who were recipients of Mental Health First Aid or were employed in a workplace where it was available.

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
MHFA training at some level should be mandatory for everyone,						
Barriers to becoming a Mental Health First Aider						
<p>Time and work pressures</p> <p>Concerns about the time to attend the course and to offer MHFA support to others and how this might impact on their substantive workload, was noted as a concern both by the person becoming a MHFA and in some cases, their managers. It was noted that managers concerns were often due to a lack of understanding of what the role entailed.</p> <p>Intervention trainers highlighted challenges in setting up aspects of the intervention for example the peer support service.</p> <p>Attitudes towards mental health, these included dismissive attitudes towards mental health in general. In addition where the MHFA had experienced poor mental health themselves, managers may in some cases express concerns that becoming a MHFA may be 'too much' and impact on the MHFA's own mental wellbeing.</p>	<p>Kidger 2016</p> <p>Narayanasamy 2018</p> <p>Fisher 2020</p>	<p>Moderate concerns</p> <p>2 studies with moderate risk of bias. 1 study with low risk of bias. In one study there is risk of recruitment bias as study details in most cases were passed only to employees likely to be interested in mental health. In the same study, it is unclear how many researchers were involved in the thematic analysis. In both studies the relationship between researcher and</p>	<p>No concerns</p> <p>Finding reflects all data reported on this theme.</p>	<p>Minor concerns</p> <p>Concerns in 1 study that relatively low numbers of people who had received support from MHFAs were recruited. However, some MHFAs had received support from other MHFAs and so these two groups were not mutually exclusive.</p>	<p>Minor concerns</p> <p>One study took place in secondary schools and findings may not necessarily be transferrable to other types of schools or workplaces. However, the second study took places in a range of workplaces from the public, private and third sector.</p>	<p>Moderate confidence</p> <p>Some risk of recruitment bias in one study but overall, both studies provide useful insight into the views and experiences of both those providing Mental Health First Aid. and the views of employees who were recipients of Mental Health First Aid or were employed in a workplace where it was available.</p>

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
		participant is unclear.				
Delivery of Mental Health First Aid training (trainers)						
<p>Timing of interventions</p> <p>The expectations of delivering MHFA training within the school day was a challenge in terms of time with set break and lunchtimes and other scheduled school events being prioritised resulting in trainers adapting their delivery style to ensure that key materials were covered within a shorter timescale.</p> <p>Consider the needs of the employee.</p> <p>Flexibility in the choice of materials or timetabling of exercises should be considerate of the needs of intervention recipients. Sessions need to be dynamic and respond to the needs of intervention recipients for more effective attendee participation.</p>	Fisher 2020	No concerns. 1 study with low risk of bias	No concerns. Finding reflects all data reported on this theme.	Minor concerns. Findings are derived from 1 study from trainers (n=6)	Minor concerns One study took place in secondary schools and findings may not necessarily be transferrable to other types of schools or workplaces.	Moderate confidence. Findings are derived from 1 study based on the interview data from trainers (n=6) delivered in secondary school settings which may not be transferable to other workplace settings.
Environment, location and space						
<p>Location of the Mental Health First Aid training delivery</p> <p>Trainers outlined that being 'on-site' resulted in interruptions to the delivery of training, due to competing priorities of school staff, such as resolving student incidents,</p>	Fisher 2020	No concerns. 1 study with low risk of bias	No concerns. Finding reflects all data reported on this theme.	Minor concerns. Findings are derived from 1 study from trainers (n=6)	Minor concerns One study took place in secondary schools and findings may not necessarily be transferrable to	Moderate confidence. Findings are derived from 1 study based on the interview data from trainers

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
<p>performance management meetings and break duties.</p> <p>Environment, location and space Some public sector participants reflected that it is hard to find a confidential space within a school which could affect the staff approaching peer supporters and the quality of the conversation undertaken</p>					other types of schools or workplaces.	(n=6) delivered in secondary school settings which may not be transferable to other workplace settings.
Acceptability of Mental Health First Aiders						
<p>Support of senior leadership To encourage acceptance of MHFAs participants noted the importance of senior managers promoting or championing the training.</p> <p>Promotion Participants described a range of ways in which MHFAs were promoted and how acceptable or not these may be. These included websites, the intranet, posters in communal areas and individual MHFA's being identified by a lanyard or badge. Some noted that for those with concerns about stigma or confidentiality, discretion was important, though others felt that in order to normalise the use of MHFAs, it was important for there to</p>	<p>Kidger 2016</p> <p>Narayanasamy 2018</p>	<p>Moderate concerns</p> <p>2 studies with moderate risk of bias. In one study there is risk of recruitment bias as study details in most cases were passed only to employees likely to be interested in mental health. In the same study, it is unclear how many researchers</p>	<p>No concerns</p> <p>Finding reflects all data reported on this theme.</p>	<p>Minor concerns</p> <p>Concerns in 1 study that relatively low numbers of people who had received support from MHFAs were recruited. However, some MHFAs had received support from other MHFAs and so these two groups were not mutually exclusive.</p>	<p>Minor concerns</p> <p>One study took place in secondary schools and findings may not necessarily be transferrable to other types of schools or workplaces. However, the second study took places in a range of workplaces from the public, private and third sector.</p>	<p>Moderate confidence</p> <p>Some risk of recruitment bias in one study but overall, both studies provide useful insight into the views and experiences of both those providing Mental Health First Aid. and the views of employees who were</p>

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
<p>be openness in the way the scheme was promoted and for MHFAs to be treated in the same ways as physical first aid.</p> <p>Need for a balance according to role, seniority and gender. Some participants also noted the importance of there being a balance of MHFA's according to gender, seniority and job role.</p>		were involved in the thematic analysis. In both studies the relationship between researcher and participant is unclear.				recipients of Mental Health First Aid or were employed in a workplace where it was available.
Accessibility of Mental Health First Aiders						
<p>Time and work pressures Pressure of work and concerns and about distracting the MHFA from their work were some of the barriers that may prevent people accessing MHFAs.</p> <p>Confidentiality Lack of private space was also noted as a concern in some cases and it was noted that it may deter people from accessing MHFAs. Others felt accessing MHFA at work felt 'too close' and that they would probably look for other forms of support.</p> <p>Lack of awareness Several participants noted a lack of awareness of MHFAs being</p>	<p>Kidger 2016</p> <p>Narayanasamy 2018</p>	<p>Moderate concerns</p> <p>2 studies with moderate risk of bias. In one study there is risk of recruitment bias as study details in most cases were passed only to employees likely to be interested in mental health. In the same study, it is unclear how many researchers</p>	<p>No concerns</p> <p>Finding reflects all data reported on this theme.</p>	<p>Minor concerns</p> <p>Concerns in 1 study that relatively low numbers of people who had received support from MHFAs were recruited. However, some MHFAs had received support from other MHFAs and so these two groups were not mutually exclusive.</p>	<p>Minor concerns</p> <p>One study took place in secondary schools and findings may not necessarily be transferrable to other types of schools or workplaces. However, the second study took places in a range of workplaces from the public, private and third sector.</p>	<p>Moderate confidence</p> <p>Some risk of recruitment bias in one study but overall, both studies provide useful insight into the views and experiences of both those providing Mental Health First Aid. and the views of employees who were</p>

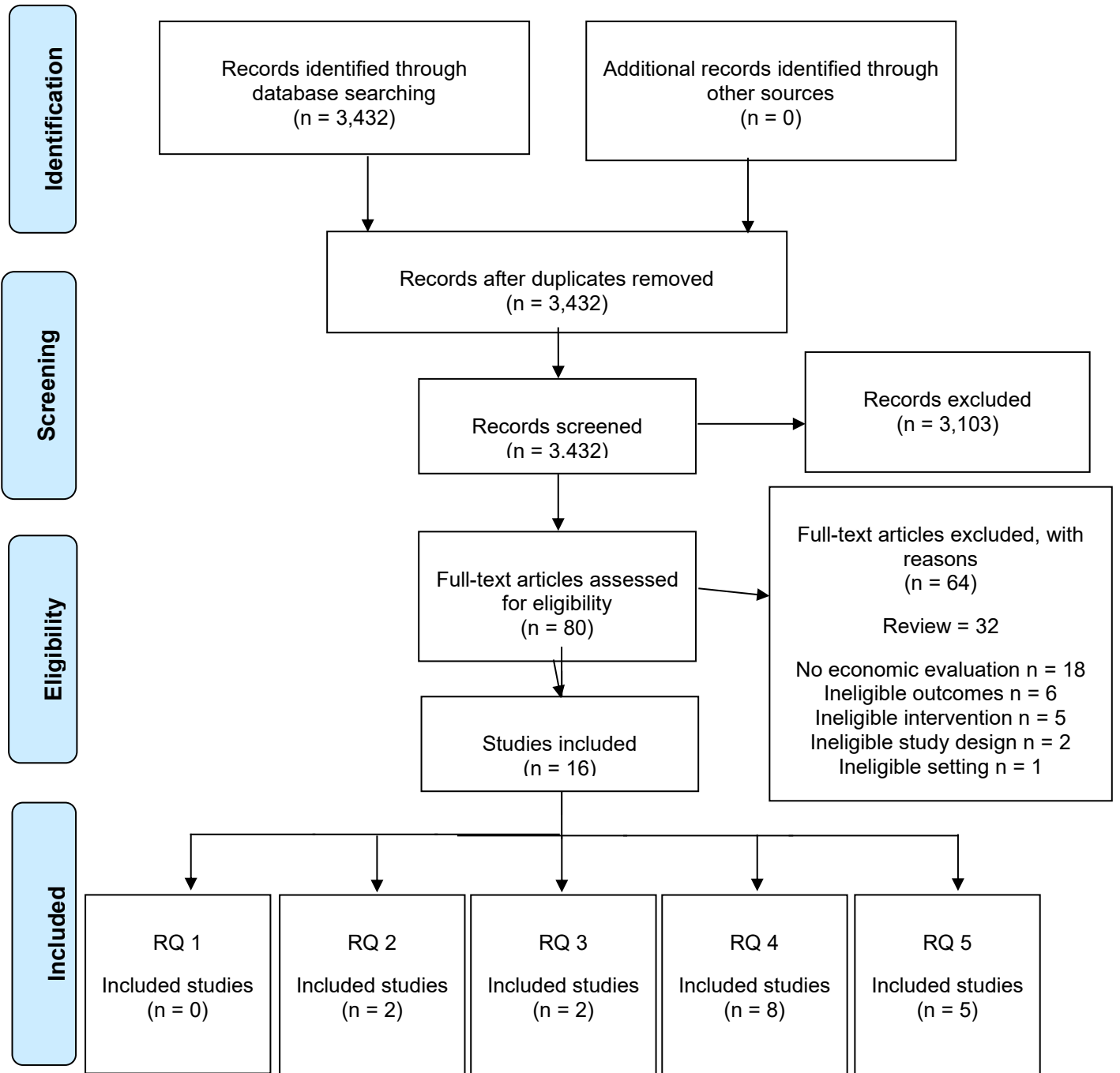
Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
<p>available in their organisation, despite a MHFA scheme being in place.</p> <p>Types of approaches There were various approaches to accessing MHFA's reported, with some being formally managed and others taking place very informally. Most MHFAs reacted to approaches by colleagues seeking support, but in some cases, MHFAs took a proactive approach, actively looking out for colleagues who may be in need of support.</p> <p>Roles and boundaries Participants who were trained as MHFAs discussed the role and their responsibilities. They were clear that having undertaken the training did not make them a professional in mental health and that their role was to listen and signpost people to other sources of support.</p> <p>Some highlighted the need to set boundaries, such as not giving personal contact details and offering support in working hours only. Others talked about the need to balance their personal safety with</p>		<p>were involved in the thematic analysis. In both studies the relationship between researcher and participant is unclear.</p>				<p>recipients of Mental Health First Aid or were employed in a workplace where it was available.</p>

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
maintaining privacy and confidentiality.						
Impact of Mental Health First Aiders						
<p>Improved staff knowledge and confidence to help. Some participants reflected on the impact of training with some commenting how it had impacted on them personally in terms of improving their knowledge and their confidence to offer help.</p> <p>Providing a spectrum of support Participants highlighted various types of support they had provided as MHFA's. This ranged from being a 'sounding board', to signposting people to further support, to dealing with specific incidents such as someone having a panic attack. In some cases, MHFAs had been able to help people outside of work as well as at work.</p> <p>Raising awareness and encouraging change in organisational culture and /or practice The MHFA training was also reported to have an impact in terms of raising organisational awareness of mental health and in some cases,</p>	<p>Kidger 2016</p> <p>Narayanasamy 2018</p>	<p>Moderate concerns</p> <p>2 studies with moderate risk of bias. In one study there is risk of recruitment bias as study details in most cases were passed only to employees likely to be interested in mental health. In the same study, it is unclear how many researchers were involved in the thematic analysis. In both studies the relationship between researcher and participant is unclear.</p>	<p>No concerns</p> <p>Finding reflects all data reported on this theme.</p>	<p>Minor concerns</p> <p>Concerns in 1 study that relatively low numbers of people who had received support from MHFAs were recruited. However, some MHFAs had received support from other MHFAs and so these two groups were not mutually exclusive.</p>	<p>Minor concerns</p> <p>One study took place in secondary schools and findings may not necessarily be transferrable to other types of schools or workplaces. However, the second study took places in a range of workplaces from the public, private and third sector.</p>	<p>Moderate confidence</p> <p>Some risk of recruitment bias in one study but overall, both studies provide useful insight into the views and experiences of both those providing Mental Health First Aid. and the views of employees who were recipients of Mental Health First Aid or were employed in a workplace where it was available.</p>

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
changing the organisational culture and/or practice around mental health.						
Monitoring and measuring success of Mental Health First Aiders						
<p>Challenges to monitoring In some organisations, MHFA interactions were monitored, either formally or informally. However, some participants felt this inappropriate due to concerns over confidentiality and potentially deterring people from using MHFAs. Others noted potential benefits of recording selected information, to monitor how the service is used and share best practice, with some arguing for MHFA monitoring being treated in the same way as physical first aid. Others noted that it would be intrusive to follow up on outcomes.</p> <p>Challenges to measuring success. Measuring the success and effectiveness of MHFAs was seen as challenging, with few objective methods for doing so. Those used tended to be based on anecdotal evidence, general indicators such as staff wellbeing, or on sickness</p>	Narayanasamy 2018	Moderate concerns ! study with moderate risk of bias. A risk of recruitment bias as study details in most cases were passed only to employees likely to be interested in mental health. It is also unclear how many researchers were involved in the thematic analysis. The relationship between researcher and participant is unclear.	No concerns Finding reflects all data reported on this theme.	Minor concerns 1 study in which relatively low numbers of people who had received support from MHFAs were recruited. However, some MHFAs had received support from other MHFAs and so these two groups were not mutually exclusive.	No concerns This study took places in a range of workplaces from the public, private and third sector.	Moderate confidence Some risk of recruitment bias but overall, the study provides a useful insight into the views and experiences of both those providing Mental Health First Aid. and the views of employees in a workplace where Mental Health First Aid is available.

Summary of review finding	Studies contributing to review finding	Methodological limitations	Coherence	Adequacy	Relevance	CERQual assessment of confidence in the evidence
absence data. In addition, it was not always possible to attribute improvements to the MHFA specifically.						

Appendix G - Economic evidence study selection



Appendix H – Economic evidence tables

H.1 Universal interventions

No studies identified.

Appendix I – Health economic model

The model covers more than 1 review in the guideline and is contained in a separate document [see Evidence Review G].

Appendix J – Excluded studies

J.1.1 Excluded studies

Study	Code [Reason]
Abildgaard, Johan Simonsen Nielsen, Karina Wahlin-Jacobsen, Christian Dyrland Maltesen, Thomas Christensen, Karl Bang Holtermann, Andreas (2020) "Same, but different": A mixed-methods realist evaluation of a cluster-randomized controlled participatory organizational intervention. HUMAN RELATIONS 73(10): 1339-1365	- Qualitative study conducted outside of the-UK
Abildgaard, Johan Simonsen; Nielsen, Karina; Sverke, Magnus (2018) Can job insecurity be managed? Evaluating an organizational-level intervention addressing the negative effects of restructuring. Work & Stress 32(2): 105-123	- Study does not report usable data
Ali, N.A., Wolf, K.M., Hammersley, J. et al. (2011) Continuity of care in intensive care units: A cluster-randomized trial of intensivists staffing. American Journal of Respiratory and Critical Care Medicine 184(7): 803-808	- Study completed before 2007
Andersen, Ingelise, Borritz, Marianne, Christensen, Karl Bang et al. (2010) Changing job-related burnout after intervention--a quasi-experimental study in six human service organizations. Journal of occupational and environmental medicine 52(3): 318-23	- Study completed before 2007
Angelici, Marta and Profeta, Paola (2020) Smart-Working: Work Flexibility without Constraints.	- Study Intervention is outside the scope of this guideline
Arnetz, JE and Hasson, H (2007) Evaluation of an educational "toolbox" for improving nursing staff competence and psychosocial work environment in elderly care: results of a prospective, non-randomized controlled intervention. International journal of nursing studies 44(5): 723-735	- Study completed before 2007
Aust, B., Rugulies, R., Finken, A. et al. (2010) When workplace interventions lead to negative effects: learning from failures. Scandinavian journal of public health 38(3suppl): 106-119	- Study completed before 2007
Barbosa, Carolina, Bray, Jeremy W, Dowd, William N et al. (2015) Return on Investment of a Work-Family Intervention: Evidence from the Work,	- Study does not have any mental wellbeing outcomes

Study	Code [Reason]
Family, and Health Network. <i>Journal of occupational and environmental medicine</i> 57(9): 943-51	
Berg, Justin M. Wrzesniewski, Amy Dutton, Jane E. (2010) Perceiving and responding to challenges in job crafting at different ranks: when proactivity requires adaptivity. <i>JOURNAL OF ORGANIZATIONAL BEHAVIOR</i> 31(23): 158-186	- Qualitative study conducted outside of the-UK
Bhui, Kamaldeep, Dinos, Sokratis, Galant-Miecznikowska, Magdalena et al. (2016) Perceptions of work stress causes and effective interventions in employees working in public, private and non-governmental organisations: a qualitative study. <i>BJPsych bulletin</i> 40(6): 318-325	- Study not concerned with a specific intervention
Biron, Caroline; Gatrell, Caroline; Cooper, Cary (2010) Autopsy of a Failure: Evaluating Process and Contextual Issues in an Organizational-Level Work Stress Intervention. <i>International Journal of Stress Management</i> 17: 135-158	- Study is observational in design
Bjorklund, Christina, Grahn, Anders, Jensen, Irene et al. (2007) Does survey feedback enhance the psychosocial work environment and decrease sick leave? <i>European Journal of Work and Organizational Psychology</i> 16(1): 76-93	- Study completed before 2007
Bjorvatn, Bjorn, Stangenes, Kristine, Oyane, Nicolas et al. (2007) Randomized placebo-controlled field study of the effects of bright light and melatonin in adaptation to night work. <i>Scandinavian journal of work, environment & health</i> 33(3): 204-14	- Study Intervention is outside the scope of this guideline
Bond, Frank W and Bunce, David (2000) Mediators of change in emotion-focused and problem-focused worksite stress management interventions. <i>Journal of occupational health psychology</i> 5(1): 156	- Study completed before 2007
Bourbonnais, R.; Brisson, C.; Vezina, M. (2011) Long-term effects of an intervention on psychosocial work factors among healthcare professionals in a hospital setting. <i>Occupational and Environmental Medicine</i> 68(7): 479-486	- Study completed before 2007

Study	Code [Reason]
Bradley, Dominique Kim Frances and Griffin, Murray (2016) The Well Organised Working Environment: A mixed methods study. <i>International journal of nursing studies</i> 55: 26-38	- Study does not have any mental wellbeing outcomes
Bratberg, Espen; Holm?s, Tor Helge; Monstad, Karin (2020) Health effects of reduced workload for older employees. <i>Health Economics</i> 29(5): 554-566	- Study used a non-equivalent control group
Bray, Jeremy W., Hinde, Jesse M., Kaiser, David J. et al. (2017) Effects of a Flexibility/Support Intervention on Work Performance: Evidence from the Work, Family, and Health Network. <i>American Journal of Health Promotion</i> 32(4): 963-970	- Study does not have any mental wellbeing outcomes
Buchberger, Barbara, Heymann, Romy, Huppertz, Hendrik et al. (2011) The effectiveness of interventions in workplace health promotion as to maintain the working capacity of health care personal. <i>GMS health technology assessment</i> 7: doc06	- Systematic review
Burns, Sharyn Crawford, Gemma Hallett, Jonathan Hunt, Kristen Chih, Hui Jun Tilley, P. J. Matt (2017) What's wrong with John? a randomised controlled trial of Mental Health First Aid (MHFA) training with nursing students. <i>BMC PSYCHIATRY</i> 17	- Study does not have employer involvement
Buso, Isabela Cortopassi, Perez-Nebra, Amalia Raquel, Tordera, Nuria et al. (2019) Work redesign: Intervention based on the social information processing approach. <i>Revista Psicologia Organizacoes e Trabalho</i> 19(4): 818-826	- Study does not have any mental wellbeing outcomes
Bussing, Andre and Glaser, Jurgen (1999) Work Stressors in Nursing in the Course of Redesign: Implications for Burnout and Interactional Stress. <i>European Journal of Work and Organizational Psychology</i> 8(3): 401-426	- Study does not report usable data
Byrne, Kate; McGowan, Iain; Cousins, Wendy (2015) Delivering Mental Health First Aid: An exploration of instructors' views. <i>International Journal of Mental Health Promotion</i> 17(1): 3-21	- Study is not related to employment
Castillo-Gualda, Ruth, Garcia, Valme, Pena, Mario et al. (2017) Preliminary findings from RULER Approach in Spanish teachers' emotional intelligence	- Study intervention is not an organisational intervention

Study	Code [Reason]
and work engagement. <i>Electronic Journal of Research in Educational Psychology</i> 15(3): 641-664	
Chanchlani, Sonia, Chang, Daniel, Ong, Jeremy SI et al. (2018) The value of peer mentoring for the psychosocial wellbeing of junior doctors: a randomised controlled study. <i>The Medical journal of Australia</i> 209(9): 401-405	- Qualitative study conducted outside of the-UK
Chapman, H R; Chipchase, S Y; Bretherton, R (2017) The evaluation of a continuing professional development package for primary care dentists designed to reduce stress, build resilience and improve clinical decision-making. <i>British dental journal</i> 223(4): 261-271	- Study does not have a control group
Christian, Elizabeth Margaret (2018) The effectiveness of the ACHIEVER adult resilience curriculum in promoting teacher wellbeing. <i>Dissertation Abstracts International Section A: Humanities and Social Sciences</i> 79(2ae): no-specified	- Dissertation
Contratto, Erin, Romp, Katherine, Estrada, Carlos A et al. (2017) Physician Order Entry Clerical Support Improves Physician Satisfaction and Productivity. <i>Southern medical journal</i> 110(5): 363-368	- Study does not have a control group
Cook, Royer F, Billings, Douglas W, Hersch, Rebekah K et al. (2007) A field test of a web-based workplace health promotion program to improve dietary practices, reduce stress, and increase physical activity: randomized controlled trial. <i>Journal of medical Internet research</i> 9(2): e17	- Study does not have a control group
Cordoza, Makayla, Ulrich, Roger S, Manulik, Bette J et al. (2018) Impact of Nurses Taking Daily Work Breaks in a Hospital Garden on Burnout. <i>American journal of critical care : an official publication, American Association of Critical-Care Nurses</i> 27(6): 508-512	- Study does not report usable data
Costantini, Arianna Demerouti, Evangelia Ceschi, Andrea Sartori, Riccardo (2020) Implementing Job Crafting Behaviors: Exploring the Effects of a Job Crafting Intervention Based on the Theory of Planned Behavior. <i>JOURNAL OF APPLIED BEHAVIORAL SCIENCE</i>	- Study does not report usable data

Study	Code [Reason]
Da Silva Junior, Domingos Isidorio Ferreira, Maria Cristina Pizarro de Freitas, Clarisa Pinto (2019) EFFECTS OF AN INTERVENTION PROGRAM BASED ON JOB CRAFTING BEHAVIORS ON THE WORK ENGAGEMENT OF TEACHERS. ACCION PSICOLOGICA 16(2): 119-128	- Study does not report usable data
Dahl-Jorgensen, C and Saksvik, PO (2005) The impact of two organizational interventions on the health of service sector workers. International journal of health services : planning, administration, evaluation 35(3): 529-549	- Study does not report usable data
de Bloom, Jessica; Kinnunen, Ulla; Korpela, Kalevi (2014) Exposure to nature versus relaxation during lunch breaks and recovery from work: development and design of an intervention study to improve workers' health, well-being, work performance and creativity. BMC public health 14: 488	- Protocol only - Study intervention is not an organisational intervention
de Bloom, Jessica, Sianoja, Marjaana, Korpela, Kalevi et al. (2017) Effects of park walks and relaxation exercises during lunch breaks on recovery from job stress: Two randomized controlled trials. Journal of Environmental Psychology 51: 14-30	- Study intervention is not an organisational intervention
DeJoy, David M, Wilson, Mark G, Vandenberg, Robert J et al. (2010) Assessing the impact of healthy work organization intervention. Journal of Occupational and Organizational Psychology 83(1): 139-165	- Study does not report usable data
Di Tecco, C., Jain, A., Valenti, A. et al. (2017) An evaluation of the impact of a policy-level intervention to address psychosocial risks on organisational action in Italy. Safety Science 100: 103-109	- Study is observational in design
Dobson, Keith S, Markova, Veronika, Wen, Alainna et al. (2020) Effects of the Anti-stigma Workplace Intervention "Working Mind" in a Canadian Health-Care Setting: A Cluster-Randomized Trial of Immediate Versus Delayed Implementation: Effets d'une intervention en milieu de travail anti-stigmatisés, l'Esprit au travail, dans un milieu canadien de soins de santé: un essai randomisé en grappes d'une mise en oeuvre immédiate plutôt que reportée. Canadian journal of psychiatry. Revue canadienne de psychiatrie: 706743720961738	- Study could not be retrieved

Study	Code [Reason]
Dunn, Patrick M, Arnetz, Bengt B, Christensen, John F et al. (2007) Meeting the imperative to improve physician well-being: assessment of an innovative program. <i>Journal of general internal medicine</i> 22(11): 1544-52	- Study completed before 2007
Dyrbye, Liselotte N, Shanafelt, Tait D, Gill, Priscilla R et al. (2019) Effect of a Professional Coaching Intervention on the Well-being and Distress of Physicians: A Pilot Randomized Clinical Trial. <i>JAMA internal medicine</i>	- Study intervention is not an organisational intervention
Egan, Toby Marshall and Song, Zhaoli (2008) Are facilitated mentoring programs beneficial? A randomized experimental field study. <i>Journal of Vocational Behavior</i> 72(3): 351-362	- Study does not report usable data
Elo, AL, Ervasti, J, Kuosma, E et al. (2008) Evaluation of an organizational stress management program in a municipal public works organization. <i>Journal of occupational health psychology</i> 13(1): 10-23	- Study does not have a control group
Emmanuel, F.J.; Vala, Y.; Dodia, T. (2021) Study on effectiveness of staff welfare program regarding occupational stress during covid 19 pandemic among nursing officers. <i>Medico-Legal Update</i> 21(1): 263-268	- Study intervention is not an organisational intervention
Farokhzadian, J.; Sabzi, A.; Mangolian Shahrababaki, P. (2018) Improving the self-efficacy of teachers in schools: Results of health promotion program. <i>International Journal of Adolescent Medicine and Health</i> : 20170170	- Study conducted in a non-OECD - BRICS country
Feda, Denise Marie Grant (2008) Written violence policies and assault deterrents in Minnesota Schools: Impact on educators' risk of physical assault. <i>Dissertation Abstracts International: Section B: The Sciences and Engineering</i> 69(1b): 256	- Dissertation
Fukuda, Koji, Terada, Seishi, Hashimoto, Mamoru et al. (2018) Effectiveness of educational program using printed educational material on care burden distress among staff of residential aged care facilities without medical specialists and/or registered nurses: Cluster quasi-randomization study. <i>Geriatrics & gerontology international</i> 18(3): 487-494	- Study intervention is not an organisational intervention
Gabbe, Steven G, Webb, Lynn E, Moore, Donald E Jr et al. (2008) Can mentors prevent and reduce burnout in new chairs of departments of	- Study does not report usable data

Study	Code [Reason]
obstetrics and gynecology: results from a prospective, randomized pilot study. American journal of obstetrics and gynecology 198(6): 653e1-7	
Giaver, Fay; Vaag, Jonas Rennemo; Wennes, Grete (2017) Choral singing as an arts-based organisational intervention: A qualitative study of employees' experiences. Arts & Health: An International Journal of Research, Policy and Practice 9(1): 26-41	- Qualitative study conducted outside of the-UK
Gidwani, Risha, Nguyen, Cathina, Kofoed, Alexis et al. (2017) Impact of Scribes on Physician Satisfaction, Patient Satisfaction, and Charting Efficiency: A Randomized Controlled Trial. Annals of family medicine 15(5): 427-433	- Study does not have any mental wellbeing outcomes
Gill, Michael J; Roulet, Thomas J; Kerridge, Stephen P (2018) Mentoring for mental health: A mixed-method study of the benefits of formal mentoring programmes in the English police force. Journal of Vocational Behavior 108: 201-213	- Study does not report usable data
Gregory, Sean T; Menser, Terri; Gregory, Brian T (2018) An Organizational Intervention to Reduce Physician Burnout. Journal of healthcare management / American College of Healthcare Executives 63(5): 338-352	- Study design not appropriate
Hall, LM; Doran, D; Pink, L (2008) Outcomes of interventions to improve hospital nursing work environments. The Journal of nursing administration 38(1): 40-46	- Study does not have a control group
Hamilton, Jacqueline (2010) Effects of an Employee Wellness Program on physiological risk factors, job satisfaction, and monetary savings in a South Texas university. Dissertation Abstracts International: Section B: The Sciences and Engineering 71(3b): 1635	- Dissertation
Hammer, Leslie B. Johnson, Ryan C. Crain, Tori L. Bodner, Todd Kossek, Ellen Ernst Davis, Kelly D. Kelly, Erin L. Buxton, Orfeu M. Karuntzos, Georgia Chosewood, L. Casey Berkman, Lisa (2016) Intervention Effects on Safety Compliance and Citizenship Behaviors: Evidence from the Work, Family, and Health Study. JOURNAL OF APPLIED PSYCHOLOGY 101(2): 190-208	- Study does not report usable data

Study	Code [Reason]
Harju, Lotta K. Kaltiainen, Janne Hakanen, Jari J. (2021) The double-edged sword of job crafting: The effects of job crafting on changes in job demands and employee well-being. HUMAN RESOURCE MANAGEMENT	- Study does not have a control group
Haukka, Eija Pehkonen, Irmeli Leino-Arjas, Paivi Viikari-Juntura, Eira Takala, Esa-Pekka Malmivaara, Antti Hopsu, Leila Mutanen, Pertti Ketola, Ritva Virtanen, Tuija Holtari-Leino, Merja Nykanen, Jaana Stenholm, Sari Ojajarvi, Anneli Riihimaki, Hilikka (2010) Effect of a participatory ergonomics intervention on psychosocial factors at work in a randomised controlled trial. OCCUPATIONAL AND ENVIRONMENTAL MEDICINE 67(3): 170-177	- Study completed before 2007
Head, Elise Garcia (2016) The use of peer mentoring to decrease stress in student registered nurse anesthetists. Dissertation Abstracts International: Section B: The Sciences and Engineering 77(3be): no-specified	- Dissertation
Holt, Maxine and Powell, Susan (2015) Health and well-being in small and medium-sized enterprises (SMEs). What public health support do SMEs really need? Perspectives in public health 135(1): 49-55	- Study is not an intervention study
Hopman, Juliette A. B., van Lier, Pol A. C., van der Ende, Jan et al. (2018) Impact of the Good Behavior Game on special education teachers. Teachers and Teaching 24(4): 350-368	- Study intervention is not an organisational intervention
Ipsen, C.; Gish, L.; Poulsen, S. (2015) Organizational-level interventions in small and medium-sized enterprises: Enabling and inhibiting factors in the PoWRS program. Safety Science 71(pc): 264-274	- Study does not have a control group
Jarman, Lisa, Martin, Angela, Venn, Alison et al. (2016) Workplace Health Promotion and Mental Health: Three-Year Findings from Partnering Healthy@Work. PloS one 11(8): e0156791	- Study does not have a control group
Jenny, Gregor J, Brauchli, Rebecca, Inauen, Alice et al. (2015) Process and outcome evaluation of an organizational-level stress management intervention in Switzerland. Health promotion international 30(3): 573-85	- Study does not have a control group
Johnson, Carolyn C, Lai, Yen-Ling, Rice, Janet et al. (2010) ACTION Live: Using process evaluation to describe implementation of a worksite wellness	- Study is concerned iwth physical activity and physical health is primary outcome

Study	Code [Reason]
program. Journal of Occupational and Environmental Medicine 52(suppl1): 14-s21	
Kahonen, Kari, Naatanen, Petri, Tolvanen, Asko et al. (2012) Development of sense of coherence during two group interventions. Scandinavian journal of psychology 53(6): 523-7	- Study population is selected and so is not a universal intervention
Kanste, Outi, Lipponen, Kaija, Kaariainen, Maria et al. (2010) Effects of network development on attitudes towards work and well-being at work among health care staff in northern Finland. International journal of circumpolar health 69(4): 394-403	- Study completed before 2007
Kawakami, Norito and Tsutsumi, Akizumi (2016) The Stress Check Program: a new national policy for monitoring and screening psychosocial stress in the workplace in Japan. Journal of occupational health 58(1): 1-6	- Study does not have a control group
Kelly EL, Moen P, Oakes JM et al. (2014) Changing Work and Work-Family Conflict: Evidence from the Work, Family, and Health Network*. American sociological review 79(3): 485-516	- Study does not report usable data
Ketelaar, Sarah M. Gartner, Fania R. Bolier, Linda Smeets, Odile Nieuwenhuijsen, Karen Sluiter, Judith K. (2013) Mental Vitality @ Work-A Workers' Health Surveillance Mental Module for Nurses and Allied Health Care Professionals Process Evaluation of a Randomized Controlled Trial. JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE 55(5): 563-571	- Study population is selected and so is not a universal intervention
Klein Hesselink, J; de Leede, J; Goudswaard, A (2010) Effects of the new fast forward rotating five-shift roster at a Dutch steel company. Ergonomics 53(6): 727-738	- Study does not have any mental wellbeing outcomes
Kobayashi, Yuka, Kaneyoshi, Akiko, Yokota, Atsuko et al. (2008) Effects of a worker participatory program for improving work environments on job stressors and mental health among workers: a controlled trial. Journal of occupational health 50(6): 455-70	- Study completed before 2007
Koivu, Aija; Saarinen, Pirjo; Hyrk?s, Kristiina (2012) Does clinical supervision promote medical-surgical nurses' well-being at work? A quasi-	- Study completed before 2007

Study	Code [Reason]
experimental 4-year follow-up study. Journal of nursing management 20: 401-13	
Kooij, DTAM, van Woerkom, M, Wilkenloh, J et al. (2017) Job crafting towards strengths and interests: The effects of a job crafting intervention on person-job fit and the role of age. The Journal of applied psychology 102(6): 971-981	- Study does not have any mental wellbeing outcomes
Koshy, Simi, Feustel, Paul J, Hong, Michael et al. (2010) Scribes in an ambulatory urology practice: patient and physician satisfaction. The Journal of urology 184(1): 258-62	- Study does not have any mental wellbeing outcomes
Kossek, Ellen Ernst Thompson, Rebecca J. Lawson, Katie M. Bodner, Todd Perrigino, Matthew B. Hammer, Leslie B. Buxton, Orfeu M. Almeida, David M. Moen, Phyllis Hurtado, David A. Wipfli, Brad Berkman, Lisa F. Bray, Jeremy W. (2019) Caring for the Elderly at Work and Home: Can a Randomized Organizational Intervention Improve Psychological Health? JOURNAL OF OCCUPATIONAL HEALTH PSYCHOLOGY 24(1): 36-54	- Study does not report usable data
Kraaijeveld, R. A. Schaafsma, F. G. Ketelaar, S. M. Boot, C. R. L. Bultmann, U. Anema, J. R. (2016) Implementation of the participatory approach for supervisors to prevent sick leave: a process evaluation. INTERNATIONAL ARCHIVES OF OCCUPATIONAL AND ENVIRONMENTAL HEALTH 89(5): 847-856	- Qualitative study conducted outside of the-UK
Kuijpers, Evy; Kooij, Dorien T A M; van Woerkom, Marianne (2020) Align your job with yourself: The relationship between a job crafting intervention and work engagement, and the role of workload. Journal of occupational health psychology 25(1): 1-16	- Study does not report usable data
Landsbergis, Paul A. and Vivona-Vaughan, Eleanor (1995) Evaluation of an Occupational Stress Intervention in a Public Agency. Journal of Organizational Behavior 16(1): 29-48	- Study does not report usable data
Lantieri, Linda, Kyse, Eden Nagler, Harnett, Susanne et al. (2011) Building inner resilience in teachers and students. Personality, stress, and coping: Implications for education.: 267-292	- Study does not have employer involvement

Study	Code [Reason]
Lee, Soomi; Lawson, Katie M; Damaske, Sarah (2019) Crossover of Resources and Well-Being within Employee-Partner Dyads: Through Increased Schedule Control. <i>Community, work & family</i> 22(4): 391-411	- Study does not have any mental wellbeing outcomes
Li HC, Wang LS, Lin YH et al. (2011) The effect of a peer-mentoring strategy on student nurse stress reduction in clinical practice. <i>International nursing review</i> 58(2): 203-210	- Study conducted in an non-OECD - BRICS country
Linden, Michael, Muschalla, Beate, Hansmeier, Thomas et al. (2014) Reduction of sickness absence by an occupational health care management program focusing on self-efficacy and self-management. <i>Work (Reading, Mass.)</i> 47(4): 485-9	- Study does not have any mental wellbeing outcomes
Linzer, M, Poplau, S, Brown, R et al. (2017) Do Work Condition Interventions Affect Quality and Errors in Primary Care? Results from the Healthy Workplace Study. <i>Journal of general internal medicine</i> 32(1): 56-61	- Study does not have any mental wellbeing outcomes
Lowensteyn, Ilka, Berberian, Violette, Berger, Claudie et al. (2019) The Sustainability of a Workplace Wellness Program That Incorporates Gamification Principles: Participant Engagement and Health Benefits After 2 Years. <i>American journal of health promotion : AJHP</i> 33(6): 850-858	- Study does not have a control group
Lucas, B, Trick, W, Evans, A et al. (2011) Emotional Exhaustion, Life Stress, and Perceived Control Among Medicine Ward Attending Physicians: A Randomized Trial of 2- Versus 4-Week Ward Rotations. <i>Journal of Hospital Medicine</i>	- Conference abstract.
Marino M, Killerby M, Lee S et al. (2016) The Effects of a Cluster Randomized Controlled Workplace Intervention on Sleep and Work-Family Conflict Outcomes in an Extended Care Setting. <i>Sleep health</i> 2(4): 297-308	- Study does not report usable data
Martin, Angela Kilpatrick, Michelle Scott, Jenn Cocker, Fiona Dawkins, Sarah Brough, Paula Sanderson, Kristy (2020) Protecting the Mental Health of Small-to-Medium Enterprise Owners A Randomized Control Trial Evaluating a Self-Administered Versus Telephone Supported Intervention. <i>JOURNAL OF OCCUPATIONAL AND ENVIRONMENTAL MEDICINE</i> 62(7): 503-510	- Study used an active control group

Study	Code [Reason]
Massey, Jennifer; Brooks, Meghan; Burrow, Jeff (2014) Evaluating the Effectiveness of Mental Health First Aid Training Among Student Affairs Staff at a Canadian University. <i>Journal of Student Affairs Research and Practice</i> 51(3): 323-336	- Study does not have any mental wellbeing outcomes
Mazenod, Anna (2014) Engaging employers in workplace training-lessons from the English train to gain programme. <i>International Journal of Training and Development</i> 18(1): 53-65	- Study does not have any mental wellbeing outcomes
McCoy, K., Stinson, K., Scott, K. et al. (2014) Health promotion in small business: A systematic review of factors influencing adoption and effectiveness of worksite wellness programs. <i>Journal of Occupational and Environmental Medicine</i> 56(6): 579-587	- Systematic review
Medina, Maria Del Consuelo, Calderon, Angelica, Blunk, Dan I et al. (2018) Organizational Wellness Program Implementation and Evaluation: A Holistic Approach to Improve the Wellbeing of Middle Managers. <i>Journal of occupational and environmental medicine</i> 60(6): 515-520	- Study data is unclear
Mellor, N., Mackay, C., Packham, C. et al. (2011) 'Management Standards' and work-related stress in Great Britain: Progress on their implementation. <i>Safety Science</i> 49(7): 1040-1046	- Study Intervention is outside the scope of this guideline
Meng, Annette; Borg, Vilhelm; Clausen, Thomas (2020) Enhancing the social capital in industrial work teams: results from a participatory intervention. <i>Industrial health</i> 58(5): 433-442	- Study used a non-equivalent control group
Meyer, Denny, Jayawardana, Madawa W, Muir, Samuel D et al. (2018) Promoting Psychological Well-Being at Work by Reducing Stress and Improving Sleep: Mixed-Methods Analysis. <i>Journal of medical Internet research</i> 20(10): e267	- Study does not have a control group
Meyers, Maria Christina and van Woerkom, Marianne (2017) Effects of a strengths intervention on general and work-related well-being: The mediating role of positive affect. <i>Journal of Happiness Studies: An Interdisciplinary Forum on Subjective Well-Being</i> 18(3): 671-689	- Study does not have employer involvement

Study	Code [Reason]
Mikkelsen, A and Saksvik, PO (1999) Impact of a participatory organizational intervention on job characteristics and job stress. <i>International journal of health services : planning, administration, evaluation</i> 29(4): 871-893	- Study does not report usable data
Mikkelsen, Aslaug; Saksvik, Per Øystein; Landsbergis, Paul (2000) The impact of a participatory organizational intervention on job stress in community health care institutions. <i>Work & Stress</i> 14(2): 156-170	- Study does not report usable data
Moll, Sandra E, VandenBussche, Jessica, Brooks, Katelyn et al. (2018) Workplace Mental Health Training in Health Care: Key Ingredients of Implementation. <i>Canadian journal of psychiatry. Revue canadienne de psychiatrie</i> : 706743718762100	- Study does not have a control group
Munz, David C.; Kohler, Jennifer M.; Greenberg, Carl I. (2001) Effectiveness of a Comprehensive Worksite Stress Management Program: Combining Organizational and Individual Interventions. <i>International Journal of Stress Management</i> 8(1): 49-62	- Study does not report usable data - Study does not have any mental wellbeing outcomes
Naghieh A, Montgomery P, Bonell CP et al. (2015) Organisational interventions for improving wellbeing and reducing work-related stress in teachers. <i>The Cochrane database of systematic reviews</i> : CD010306	- Systematic review
Nakao, Mutsuhiro, Nishikitani, Mariko, Shima, Satoru et al. (2007) A 2-year cohort study on the impact of an Employee Assistance Programme (EAP) on depression and suicidal thoughts in male Japanese workers. <i>International archives of occupational and environmental health</i> 81(2): 151-7	- Study completed before 2007
Oprea, Bogdan Teodor, Barzin, Liubița, Vîrgă Delia et al. (2019) Effectiveness of job crafting interventions: A meta-analysis and utility analysis. <i>European Journal of Work and Organizational Psychology</i>	- Systematic review
Ornek, Ozlem Koseoglu Esin, Melek Nihal (2020) Effects of a work-related stress model based mental health promotion program on job stress, stress reactions and coping profiles of women workers: a control groups study. <i>BMC PUBLIC HEALTH</i> 20(1)	- Study used a non-equivalent control group

Study	Code [Reason]
Osatuke, Katerine, Moore, Scott C, Ward, Christopher et al. (2009) Civility, Respect, Engagement in the Workforce (CREW). <i>The Journal of Applied Behavioral Science</i> 45(3): 384-410	- Study does not have any mental wellbeing outcomes
Ouellette, Rachel R., Frazier, Stacy L., Shernoff, Elisa S. et al. (2018) Teacher Job Stress and Satisfaction in Urban Schools: Disentangling Individual-, Classroom-, and Organizational-Level Influences. <i>Behavior Therapy</i> 49(4): 494-508	- Study does not have a control group
Peters, Susan E, Nielsen, Karina M, Nagler, Eve M et al. (2020) Ensuring Organization-Intervention Fit for a Participatory Organizational Intervention to Improve Food Service Workers' Health and Wellbeing: Workplace Organizational Health Study. <i>Journal of occupational and environmental medicine</i> 62(2): e33-e45	- Qualitative study conducted outside of the-UK
Petrou, Paraskevas Demerouti, Evangelia Schaufeli, Wilmar B. (2015) Job Crafting in Changing Organizations: Antecedents and Implications for Exhaustion and Performance. <i>JOURNAL OF OCCUPATIONAL HEALTH PSYCHOLOGY</i> 20(4): 470-480	- Study does not have a control group
Pettker, Christian M, Thung, Stephen F, Raab, Cheryl A et al. (2011) A comprehensive obstetrics patient safety program improves safety climate and culture. <i>American journal of obstetrics and gynecology</i> 204(3): 216e1-6	- Study does not have a control group
Pillemer, Karl, Meador, Rhoda, Henderson, Charles Jr et al. (2008) A facility specialist model for improving retention of nursing home staff: results from a randomized, controlled study. <i>The Gerontologist</i> 48specno1: 80-9	- Study does not have any mental wellbeing outcomes
Rajaratnam, Augustine S, Sears, Lindsay E, Shi, Yuyan et al. (2014) Well-being, health, and productivity improvement after an employee well-being intervention in large retail distribution centers. <i>Journal of occupational and environmental medicine</i> 56(12): 1291-6	- Study does not have a control group
Razzi, Catherine C and Bianchi, Ann L (2019) Incivility in nursing: Implementing a quality improvement program utilizing cognitive rehearsal training. <i>Nursing forum</i> 54(4): 526-536	- Study does not have any mental wellbeing outcomes

Study	Code [Reason]
Reavley, Nicola J, McCann, Terence V, Cvetkovski, Stefan et al. (2014) A multifaceted intervention to improve mental health literacy in employees of a multi-campus university: A cluster randomised trial. <i>Journal of Public Mental Health</i> 13(1): 25-39	- Study does not have employer involvement
Reavley, Nicola J, Morgan, Amy J, Fischer, Julie-Anne et al. (2018) Effectiveness of eLearning and blended modes of delivery of Mental Health First Aid training in the workplace: randomised controlled trial. <i>BMC psychiatry</i> 18(1): 312	- Study used an active control group
Reeves, Aaron, McKee, Martin, Mackenbach, Johan et al. (2017) Introduction of a National Minimum Wage Reduced Depressive Symptoms in Low-Wage Workers: A Quasi-Natural Experiment in the UK. <i>Health economics</i> 26(5): 639-655	- Study does not have employer involvement
Resnick, Barbara, Gruber-Baldini, Ann L, Galik, Elizabeth et al. (2009) Changing the philosophy of care in long-term care: testing of the restorative care intervention. <i>The Gerontologist</i> 49(2): 175-84	- Study does not have any mental wellbeing outcomes
Resnick, Barbara, Gruber-Baldini, Ann L, Zimmerman, Sheryl et al. (2009) Nursing home resident outcomes from the Res-Care intervention. <i>Journal of the American Geriatrics Society</i> 57(7): 1156-65	- Study does not have any mental wellbeing outcomes
Reynolds, S (1997) Psychological well-being at work: is prevention better than cure? <i>Journal of psychosomatic research</i> 43(1): 93-102	- Study does not report usable data
Rickard, Greg, Lenthall, Sue, Dollard, Maureen et al. (2012) Organisational intervention to reduce occupational stress and turnover in hospital nurses in the Northern Territory, Australia. <i>Collegian (Royal College of Nursing, Australia)</i> 19(4): 211-21	- Study does not have a control group
Romig, MC, Latif, A, Gill, RS et al. (2012) Perceived benefit of a telemedicine consultative service in a highly staffed intensive care unit. <i>Journal of critical care</i> 27(4): 426e9	- Study completed before 2007
Runyan, Christine, Savageau, Judith A, Potts, Stacy et al. (2016) Impact of a family medicine resident wellness curriculum: a feasibility study. <i>Medical education online</i> 21: 30648	- Study does not have a control group

Study	Code [Reason]
Saadat, H., Snow, D.L., Ottenheimer, S. et al. (2012) Wellness program for anesthesiology residents: A randomized, controlled trial. <i>Acta Anaesthesiologica Scandinavica</i> 56(9): 1130-1138	- Study intervention is not an organisational intervention
SCHAUBROECK, JOHN, GANSTER, DANIEL C., SIME, WESLEY E. et al. (1993) A field experiment testing supervisory role clarification. <i>Personnel Psychology</i> 46(1): 1-25	- Study does not report usable data
Schwarz, Ulrica von Thiele Nielsen, Karina M. Stenfors-Hayes, Terese Hasson, Henna (2017) Using kaizen to improve employee well-being: Results from two organizational intervention studies. <i>HUMAN RELATIONS</i> 70(8): 966-993	- Study does not report usable data
Searle, Rosalind H and Patent, Volker (2013) Recruitment, retention and role slumping in child protection: The evaluation of in-service training initiatives. <i>British Journal of Social Work</i> 43(6): 1111-1129	- Study does not have any mental wellbeing outcomes
Seppala, Piia, Hakanen, Jari J, Tolvanen, Asko et al. (2018) A job resources-based intervention to boost work engagement and team innovativeness during organizational restructuring: For whom does it work? <i>Journal of Organizational Change Management</i> 31(7): 1419-1437	- Study does not report usable data
Shea, J.A., Dinges, D.F., Small, D.S. et al. (2014) A randomized trial of a three-hour protected nap period in a medicine training program: Sleep, alertness, and patient outcomes. <i>Academic Medicine</i> 89(3): 452-459	- Study Intervention is outside the scope of this guideline
Skingley, Ann and Ross, Louise (2018) Effects of singing groups on staff well-being: a feasibility study. <i>Nursing standard (Royal College of Nursing (Great Britain))</i> : 1987) 33(3): 58-63	- Study does not have employer involvement
Smith, Mark R; Fogg, Louis F; Eastman, Charmane I (2009) A compromise circadian phase position for permanent night work improves mood, fatigue, and performance. <i>Sleep</i> 32(11): 1481-9	- Study does not have employer involvement
Snetselaar, Linda Ahrens, Lois Johnston, Kenton Smith, Karen Hollinger, Donna Hockenberry, Jason (2016) A Participatory Integrated Health Promotion and Protection Worksite Intervention A Cluster Randomized Controlled Trial. <i>TOPICS IN CLINICAL NUTRITION</i> 31(1): 36-46	- Study does not have any mental wellbeing outcomes

Study	Code [Reason]
Solenhill, Madeleine, Grotta, Alessandra, Pasquali, Elena et al. (2016) The Effect of Tailored Web-Based Feedback and Optional Telephone Coaching on Health Improvements: A Randomized Intervention Among Employees in the Transport Service Industry. <i>Journal of medical Internet research</i> 18(8): e158	- Study is concerned iwth physical activity and physical health is primary outcome
Spence Laschinger, Heather K, Leiter, Michael P, Day, Arla et al. (2012) Building empowering work environments that foster civility and organizational trust: testing an intervention. <i>Nursing research</i> 61(5): 316-25	- Study does not have any mental wellbeing outcomes
Stuart, Allison Rebecca (2016) Positive health education: A mixed methods study on the efficacy of adding self-compassion and resilience to a non-diet worksite wellness program. <i>Dissertation Abstracts International Section A: Humanities and Social Sciences</i> 77(6ae): no-specified	- Dissertation
Sun, Jing; Buys, Nicholas; Wang, Xinchao (2013) Effectiveness of a workplace-based intervention program to promote mental health among employees in privately owned enterprises in China. <i>Population health management</i> 16(6): 406-14	- Study does not have a control group
Tan, Leona, Harvey, Samuel B, Deady, Mark et al. (2020) Workplace Mental Health Awareness Training: A Cluster Randomized Controlled Trial. <i>Journal of occupational and environmental medicine</i> publishaheadofprint	- Study does not report usable data
Terry, J (2010) Experiences of instructors delivering the mental health first aid training programme: A descriptive qualitative study. <i>Journal of Psychiatric and Mental Health Nursing</i> 17(7): 594-602	- Study is not related to employment
Thrive at Work Wellbeing Programme, Collaboration (2019) Evaluation of a policy intervention to promote the health and wellbeing of workers in small and medium sized enterprises - a cluster randomised controlled trial. <i>BMC public health</i> 19(1): 493	- Protocol only
Tims, Maria Bakker, Arnold B. Derks, Daantje (2015) Job crafting and job performance: A longitudinal study. <i>EUROPEAN JOURNAL OF WORK AND ORGANIZATIONAL PSYCHOLOGY</i> 24(6): 914-928	- Study could not be retrieved

Study	Code [Reason]
Totterdell, Peter and Smith, Lawrence (1992) Ten-hour days and eight-hour nights: Can the Ottawa Shift System reduce the problems of shiftwork? <i>Work & Stress</i> 6(2): 139-152	- Study Intervention is outside the scope of this guideline
Tsutsumi, Akizumi, Nagami, Makiko, Yoshikawa, Toru et al. (2009) Participatory intervention for workplace improvements on mental health and job performance among blue-collar workers: a cluster randomized controlled trial. <i>Journal of occupational and environmental medicine</i> 51(5): 554-63	- Study completed before 2007
Tveito, Torill H and Eriksen, Hege R (2009) Integrated health programme: a workplace randomized controlled trial. <i>Journal of advanced nursing</i> 65(1): 110-9	- Study completed before 2007
van Heugten, Kate (2010) Bullying of social workers: Outcomes of a grounded study into impacts and interventions. <i>British Journal of Social Work</i> 40(2): 638-655	- Qualitative study conducted outside of the-UK
van Holland, B.J., Reneman, M.F., Soer, R. et al. (2018) Effectiveness and Cost-benefit Evaluation of a Comprehensive Workers' Health Surveillance Program for Sustainable Employability of Meat Processing Workers. <i>Journal of occupational rehabilitation</i> 28(1): 107-120	- Study population is selected
Van Horne, Sam; Downing, Vanessa; Farley, Heather (2020) Supporting Well-being Through the Implementation of Education and a Relaxing Retreat Space. <i>The Journal of nursing administration</i> 50(12): 655-662	- Study does not have a control group
van Wingerden, Jessica; Bakker, Arnold B; Derks, Daantje (2017) Fostering employee well-being via a job crafting intervention. <i>Journal of Vocational Behavior</i> 100: 164-174	- Study does not report usable data
Van Wingerden, Jessica; Derks, Daantje; Bakker, Arnold B (2017) The impact of personal resources and job crafting interventions on work engagement and performance. <i>Human Resource Management</i> 56(1): 51-67	- Study does not report usable data
Viola, Antoine U, James, Lynette M, Schlangen, Luc J M et al. (2008) Blue-enriched white light in the workplace improves self-reported alertness, performance and sleep quality. <i>Scandinavian journal of work, environment & health</i> 34(4): 297-306	- Study does not have a control group

Study	Code [Reason]
von Thiele Schwarz, Ulrica, Augustsson, Hanna, Hasson, Henna et al. (2015) Promoting employee health by integrating health protection, health promotion, and continuous improvement: a longitudinal quasi-experimental intervention study. <i>Journal of occupational and environmental medicine</i> 57(2): 217-25	- Study does not have any mental wellbeing outcomes
von Vultee, PJ and Arnetz, B (2004) The impact of management programs on physicians' work environment and health. A prospective, controlled study comparing different interventions. <i>Journal of health organization and management</i> 18(1): 25-37	- Study does not report usable data
Wacker, Renata Dziobek, Isabel (2018) Preventing Empathic Distress and Social Stressors at Work Through Nonviolent Communication Training: A Field Study with Health Professionals. <i>JOURNAL OF OCCUPATIONAL HEALTH PSYCHOLOGY</i> 23(1): 141-150	- Study intervention is not an organisational intervention
Wallbank, Sonya (2012) Health visitors' needs - national perspectives from the Restorative Clinical Supervision Programme: <i>The Journal of the Health Visitors' Association</i> . <i>Community Practitioner</i> 85(4): 29-32	- Non-systematic review
Wayment, Heidi A; Huffman, Ann H; Eiler, Brian A (2019) A brief "quiet ego" workplace intervention to reduce compassion fatigue and improve health in hospital healthcare workers. <i>Applied nursing research : ANR</i> 49: 80-85	- Study does not have a control group
Williams, Paige; Kern, Margaret L; Waters, Lea (2017) The Role and Reprocessing of Attitudes in Fostering Employee Work Happiness: An Intervention Study. <i>Frontiers in psychology</i> 8: 28	- Study does not reported outcomes for the control group
Winslow, Carolyn J, Kaplan, Seth A, Bradley-Geist, Jill C et al. (2017) An examination of two positive organizational interventions: For whom do these interventions work? <i>Journal of occupational health psychology</i> 22(2): 129-137	- Study does not report usable data
Wolfe, R. Mac (2018) Ninth-grade content teams: Should school districts invest time and resources in team building for ninth-grade content teams? <i>Dissertation Abstracts International Section A: Humanities and Social Sciences</i> 79(2ae): no-specified	- Dissertation

Study	Code [Reason]
Young, John (2016) A comparison between the effects of the one-hour and twelve-hour Massachusetts municipal basic recruit officer course mental health training on officer's de-escalation skills, self-efficacy, and stigmatizing attitudes. Dissertation Abstracts International: Section B: The Sciences and Engineering 77(3be): no-specified	- Dissertation
Yu-ping, Zhang, Huang, Xin, Shuang-yan, Xu et al. (2019) Can a one-on-one mentorship program reduce the turnover rate of new graduate nurses in China? A longitudinal study. Nurse Education in Practice 40	- Study does not have any mental wellbeing outcomes

Appendix K – Research recommendations – full details

K.1.1 Research recommendation

What is the long term impact and cost effectiveness of employee assistance programme provision on mental wellbeing?

K.1.1.1 Why this is important.

Evidence from the UK showed that organisation-wide interventions may help to improve mental wellbeing and stress outcomes for employees and may also benefit employers. The committee agreed that employee assistance programmes are a good option for supporting employees but recognised there was a lack of published evidence about the effectiveness of employee assistance programmes and have recommended more research into this intervention.

K.1.1.2 Rationale for research recommendation

Importance to 'patients' or the population	Poor mental wellbeing at work is a significant public and political concern. Organisational-level approaches are the best starting point when considering strategies to improve mental wellbeing at work and are regarded as a good option for supporting employees
Relevance to NICE guidance	The committee highlighted that employee assistance programmes are a good option for supporting employees but recognised there was a lack of published evidence identified about their effectiveness.
Relevance to the NHS	The outcome would increase understanding of the effectiveness of employee assistance programmes further developing an understanding of organisational universal intervention options with which to address employees at risk of poor mental wellbeing in organisations including the NHS.
National priorities	High – outlined in the NHS long term plan
Current evidence base	There was an identified lack of published evidence on the effectiveness of employee assistance programmes
Equality considerations	None known

K.1.1.3 Modified PICO table

Population	<ul style="list-style-type: none"> Everyone aged 16 years or older in full or part time employment. Employers from micro, small, medium and/or large organisation across private and public sector
Intervention	Employee assistance programmes
Comparator	Usual care or no intervention
Outcome	Employee outcomes: <ul style="list-style-type: none"> Any validated measure of mental wellbeing

	<ul style="list-style-type: none"> • Job stress, burnout or fatigue • Symptoms of mental health conditions such as depression, anxiety, insomnia • Absenteeism • Presenteeism • Productivity • Job satisfaction, engagement or motivation • Quality of life • Uptake of support services <p>Employer outcomes</p> <ul style="list-style-type: none"> • Productivity • Absenteeism • Presenteeism
Study design	<ul style="list-style-type: none"> • Quantitative • Mixed methods
Timeframe	Short, medium and long term
Additional information	None

K.1.2 Research recommendation

Which mental wellbeing and productivity outcomes should be used in a core outcome set for research into workplace mental wellbeing?

K.1.2.1 Why this is important.

The committee agreed, based on their experience, that it is important for any interventions to be evaluated and monitored as part of an ongoing strategy of employee engagement, and that validated measures of wellbeing need to be part of this process. The committee also observed from the evidence that a wide range of outcome measures were used, and noted that this could make it difficult to evaluate and compare findings. The committee discussed that it could be useful for researchers conducting studies, as well as employers who would like to evaluate any interventions that they use, to be able to use to a core outcome set. The committee noted that further research is needed to understand how data and outcomes could best be used to improve mental wellbeing in the workplace. In particular, research could investigate which outcomes would be useful in a core outcome set for research into workplace mental wellbeing.

K.1.2.2 Rationale for research recommendation

Importance to 'patients' or the population	Mental wellbeing in the workplace interventions should be evaluated and monitored as part of an ongoing strategy of employee engagement. Further research is needed to understand how data and outcomes could best be used to improve mental wellbeing in the workplace.
Relevance to NICE guidance	The committee noted that research could investigate which outcomes would be useful in a core outcome set for research into workplace mental wellbeing.
Relevance to the NHS	The outcome would increase understanding of mental wellbeing in organisations including the NHS and inform approaches to research.
National priorities	High – outlined in the NHS long term plan

Current evidence base	An identified lack of a core outcome set for research into workplace mental wellbeing.
Equality considerations	None known

K.1.2.3 Modified SPIDER table

Sample	<ul style="list-style-type: none"> Everyone aged 16 years or older in full or part time employment. Employers from micro, small, medium and/or large organisation across private and public sector
Phenomenon of Interest	Which outcomes should be used in a core outcome set for research into workplace mental wellbeing?
Study Design	<ul style="list-style-type: none"> Consensus designs, for example Delphi
Evaluation	Views and experiences of researchers, employers and employees regarding: <ul style="list-style-type: none"> Core outcome sets Barriers and facilitators to detailed reporting on mental wellbeing in the workplace. What outcomes are important and why
Research type	Qualitative or mixed methods

K.1.3 Research recommendation

What are the key characteristics of an organisation and its employees that need to be included in reporting research into workplace mental wellbeing?

K.1.3.1 Why this is important.

The committee agreed, based on their experience, that it is important for any interventions to be evaluated and monitored as part of an ongoing strategy of employee engagement, and that validated measures of wellbeing need to be part of this process. The committee noted that further research is needed to understand how data and outcomes could best be used to improve mental wellbeing in the workplace. From the evidence, the committee noted that studies generally did not adequately report on key characteristics of the organisations and their employees, and that this made it difficult for the committee to judge the generalisability of the findings. The committee discussed that it would be useful for researchers in the field to understand what the key characteristics of an organisation and its employees are that need to be included in reporting research into workplace mental wellbeing.

K.1.3.2 Rationale for research recommendation

Importance to 'patients' or the population	Mental wellbeing in the workplace interventions should be evaluated and monitored as part of an ongoing strategy of employee engagement. Further research is needed to understand how data and outcomes could best be used to improve mental wellbeing in the workplace.
Relevance to NICE guidance	The committee noted that research is required understand what the key characteristics of an organisation and its employees are that need to

	be included in reporting research into workplace mental wellbeing.
Relevance to the NHS	The outcome would increase understanding of mental wellbeing in organisations including the NHS and inform approaches to research.
National priorities	High – outlined in the NHS long term plan
Current evidence base	An identified lack of detailed reporting of the nature of an organisation and its employees regarding workplace mental wellbeing.
Equality considerations	None known

K.1.3.3 Modified SPIDER table

Sample	<ul style="list-style-type: none"> • Everyone aged 16 years or older in full or part time employment. • Employers from micro, small, medium and/or large organisation across private and public sector
Phenomenon of Interest	What are the key characteristics of an organisation and its employees that need to be included in reporting research into workplace mental wellbeing??
Study Design	<ul style="list-style-type: none"> • Studies with a qualitative component including focus groups and interview-based studies. • Mixed-methods studies containing relevant qualitative data
Evaluation	Views and experiences of researchers, employers and employees regarding: <ul style="list-style-type: none"> • Core outcome sets • Barriers and facilitators to detailed reporting on mental wellbeing in the workplace. • What outcomes are important and why
Research type	Qualitative or mixed methods