National Institute for Health and Care Excellence

Centre for Guidelines

Surveillance programme

Surveillance review consultation document

10-year surveillance review of PH16 'Mental wellbeing in over 65s: occupational therapy and physical activity interventions'

2-year surveillance review of NG32 'Older people: independence and mental wellbeing'

Background information

Mental wellbeing in over 65s: occupational therapy and physical activity interventions (2008) NICE guideline PH16

Guideline issue date: October 2008

This guideline provides recommendations on promoting mental wellbeing in people aged over 65 via practical support for everyday activities based on occupational therapy principles and methods. This includes working with older people and their carers to agree what kind of support they need. There are 4 recommendations which cover occupational therapy interventions, physical activity, walking schemes and training for practitioners.

Previous surveillance reviews of PH16:

- The first surveillance review in November 2011 concluded that no update was required.
- The second surveillance review in March 2015 also concluded that no update was required but did recommend an editorial refresh.

Older people: independence and mental wellbeing (2015) NICE guideline NG32

Guideline issue date: December 2015

This guideline provides recommendations on interventions to maintain and improve the mental wellbeing and independence of people aged 65 or older and how to identify those most at risk of a decline. There are 5 recommendations covering principles of good practice, group-based activities, one-to-one activities, volunteering and identifying people most at risk of a decline.

There have been no previous surveillance reviews of NG32.

Surveillance proposal for consultation

- PH16 will be partially updated: recommendation 2 on physical activity interventions will be updated. The remaining 3 recommendations will not be updated.

- PH16 will be edited to reflect current government guidance on the amount of physical activity undertaken each week, appropriate examples of physical activity, reference to walking group organiser's responsibilities rather than 'walking the way to health initiative' leaders and cross-references to relevant NICE guidelines.

- We will not update NG32 at this time.

Reason for proposal

We found a total of 52 new studies, 1 report and 3 pieces of on-going research through surveillance of this guideline:

- A literature search for studies (quantitative only) published between 1st January 2014 to 5th October 2017 reporting on the effectiveness of interventions for adults aged 65 years and over on mental health and wellbeing outcomes.

    - In relation to PH16, there was evidence to indicate that physical activity interventions such as yoga, Pilates and tai chi that focus on relaxation

and balance, are effective at improving mental health and well-being in older adults. These types of physical activity are not currently recommended within PH16, recommendation 2 on physical activity, as such it is recommended that this is updated. None of the new evidence was thought to have an effect on the other recommendations within PH16.

    - None of this new evidence was thought to have an effect on current recommendations in NG32.

- We considered all evidence highlighted by topic experts for any potential impact on the guideline scope and remit, with 2 studies and 1 on-going piece of research meeting inclusion criteria.

- We checked for ongoing and newly published research from NIHR and Cochrane and new policy developments. No published studies were included as evidence; but 2 pieces of on-going research and 1 report was identified.

- Ongoing research was identified on occupational therapy interventions [53, 54] and a befriending initiative [55]. Publications of this work will be looked at when PH16 and NG32 undergo their next surveillance reviews, if available.

- We found some new evidence that related to gaps in the evidence identified in PH16, however this new evidence was not considered to fully address these gaps. The evidence related to:

    - Evaluations of environmental interventions (for example, adaptive equipment or assistive technologies) impact on mental wellbeing.

    - The effect on mental wellbeing of community interventions to improve the physical and social environment (for example, street lighting) that were specifically aimed at older people.

    - Long-term evidence for effectiveness of occupational therapy or physical activity interventions in older adults on mental health and wellbeing outcomes.

- We did not find any new evidence that related to other gaps in the evidence or research recommendations within PH16.

- We did not find any new evidence that related to gaps in the evidence or research recommendations in NG32.

We considered the views of topic experts, including those who helped to develop the guideline and other correspondence we have received since the publication of the guideline.

For PH16 3 experts responded, 2 explicitly stated that the guideline should be updated:

- Areas for update related to new legislation and new systems, changes in guidance on recommended levels of physical activity, return on investment (ROI) evidence (no references provided) and the view that the guideline should focus on interventions beyond physical activity, focusing on other interventions that promote mental wellbeing. The former issues will be addressed via an editorial refresh (see Appendix A for details); interventions that are not based on physical activity are covered within Older people: independence and mental wellbeing (2015) NICE guideline NG32; and issues around ROI cannot be assessed for impact on the guideline as no evidence was provided in this area.

- Other issues that were noted, had no supporting evidence provided but included highlighting the absence of any recommendations on assessment, referencing of online reliable information and use of Apps to support physical activity (see Appendix A for discussion of these issues).

Five experts responded to the request for views and evidence concerning the need to update NG32. Three thought the guideline did not need updating, 1 did not indicate whether or not they thought the guideline should be updated and 1 expert said it should be updated.

Overall decision

After considering all the new evidence, views of topic experts and related work in development within NICE, we are proposing that PH16 is partially updated and that NG32 is not updated.

Further information

See Appendix A for further information.

For details of the process and update decision that are available, see ensuring that published guidelines are current and accurate in 'Developing NICE guidelines: the manual'.

Appendix A: summary of new evidence

PH16

Summary of new evidence from 10-year surveillance	Summary of new intelligence from 10-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
PH6 – 01. Recommendation 1 Occupational therapy interventions **evidence statements: 8 and 17**		
Seven studies (1 SR, 2 RCTs, 2 non-RCTs and 2 BA studies) were identified evaluating the effectiveness of occupation therapy (OT) interventions on mental health and well-being: A systematic review of 8 studies on re-ablement services for older community-living people reported that, compared to conventional home care, re-ablement services were associated with less use of home care, higher likelihood of living at home, improved activities of daily living skills, quality of life and physical health, increased physical activity and lower costs. [1] An RCT with adults aged 65 years or older randomised to a multi-component occupation-based lifestyle intervention designed to improve mental well-being based on NICE recommendations (n=136) or usual care (n=126) found a non-significant increase in mental wellbeing (SF-26 MH score) 6 months after the intervention. It should be noted that study participants were 'mentally well at baseline'. [2] An RCT with frail community-dwelling adults aged 65 or older (n=153) randomised to a case management intervention delivered by nurses and physiotherapists over 12 months, with 1 or more home visits per month or a control group, found no significant differences in loneliness, life satisfaction or depressive symptoms using an ITT analysis at 6 and 12 month follow-up; significant improvements were found in a complete case analysis in favour of the	Initial intelligence gathering identified the following: Older people with social care needs and multiple long-term conditions (2015) NICE guideline NG22 provides recommendations on planning and delivering social care and support for older people who have multiple long-term conditions. A topic expert highlighted A preventative lifestyle intervention for older adults (lifestyle matters): a randomised controlled trial [2], which was also identified in the literature search. This study indicates that an intervention based on PH16 recommendations is not effective at improving mental wellbeing in over 65s, however it also notes that the participants had high baseline levels of mental wellbeing. The expert also noted their involvement in a study that is still publishing: Lifestyle Matters trial (results of which are also reported in the RCT above). A topic expert noted that there is a lack of any recommendations on assessment prior to offering or involving older people in activities (no references provided). This area will be considered at the next surveillance review.	**New evidence was identified that does not have an impact on the recommendation.** Recommendation 1 recommends that older people are offered regular group and/or individual sessions to encourage them to identify, construct, rehearse and carry out daily routines and activities that help to maintain or improve their health and wellbeing; that older people's knowledge and awareness of where to get reliable information and advice on a broad range of topics such as maintaining healthcare needs, nutrition, staying active, accessing services and benefits, should be improved by providing information directly, inviting local advisers to give informal talks, or arranging trips and social activities. The recommendation also highlights the importance of involving people in their care. There is mixed evidence of effectiveness of occupational therapy interventions on mental health and wellbeing in older adults, but overall it appears to be in favour of occupational therapies improving the mental health and wellbeing of older people [1-7]. Only 2 studies reported on the outcomes of information communication technology (ICT) interventions, both of which indicated that these can lead to improvements in wellbeing [5,6]. Given the limited body of evidence on ICT interventions, it is recommended that this is not the focus of an update at this time. Older people: independence and mental wellbeing (2015) NICE guideline NG32 does

Summary of new evidence from 10-year surveillance	Summary of new intelligence from 10-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
intervention for loneliness and life satisfaction at 6 months follow-up and for depressive symptoms at 12 months. [3] A non-RCT with 'elderly' adults allocated to an in-home rehabilitation group that received a weekly physical treatment program and basic nursing care in the home (n=100) or a control group that received basic nursing care (n=100) over 1 year, found that quality of life and activities of daily living significantly improved in the intervention group; while there was only a slight improvement in quality of life (QoL) in the control group at 9 months, with 'almost no effects' at the other time-points. [4] A non-RCT with adults >65 years old in an IT welfare intervention (n=100) versus a control group (n=100), found that the intervention group had better balance (stats=NR) and significantly lower levels of depression and higher social participation. [5] A BA study with older adults (n=13) using a home-based information communication technology (ICT) programme on an iPad trained by occupational therapists found a 'significant trend' in ICT activities across 6 months, with social connectedness activities modestly increasing. [6] A BA study with low-income adults aged 65 and older (n=281) in The Community Aging in Pace, Advancing Better Living for Elders (CAPABLE) programme, which uses an inter-professional team, including OTs, to help participants achieve their goals, reported that symptoms of depression and the ability to perform activities of daily living improved. [7]	A topic expert also requested an update highlighting where online reliable information can be found (no references provided). On-going research: The development and feasibility of a new service to promote health and well-being in older people who are starting to become frailer: The HomeHealth study	recommend 'considering' the use of ICT, and it is recommended that there is a cross-reference to this guideline (see recommendation 2 below).

Summary of new evidence from 10-year surveillance	Summary of new intelligence from 10-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
PH6 – 02. Recommendation 2 Physical activity **evidence statements: 1, 2, 3 and 17**		
Twenty studies (2 SRs, 9 RCTs, 2 non-RCTs, 5 BA and 2 cross-sectional studies) were identified evaluating the effectiveness of physical activity interventions on mental health and well-being: A systematic review of 53 studies (n=2051 adults aged 70 years and over) on aerobic training interventions found 3 studies that reported on QoL outcomes. These reported a significant effect of aerobic training on QoL. [8] A systematic review of 15 studies on relaxation interventions in older adults found that these interventions often led to reductions in depression and anxiety when compared to controls, The authors reported that 'progressive muscle relaxation training, music intervention, and yoga had the strongest intervention effects on depression. Music intervention, yoga, and combined relaxation training most effectively reduced anxiety symptoms among older adults' and the effects can last for 14 to 24 weeks after the interventions. [9] A pilot RCT with older adults (n=47) randomised to a 12-week yoga course or control found that at 3 months follow-up, yoga led to a significant improvement in mental well-being. [10] An RCT with 'frail older people' (n=NR) randomised to a 14 week yoga programme, 14 week tai chi programme or usual care activity reported an improvement in quality of life in the tai chi group (stats=NR). [11] An RCT with older adults with osteoporosis randomised to a balance training programme or control group found that at 3 months follow-up (n=68)	Initial intelligence gathering identified the following: Physical activity: brief advice for adults in primary care (2013) NICE guideline PH44, recommendation 2 provides guidance on delivering and following-up on brief advice and provides a link to current government guidance on physical activity (however it should be noted that they are being reviewed for potential update in 2018). Older people: independence and mental wellbeing (2015) NICE guideline NG32 provides guidance on maintaining and improving the mental wellbeing and independence of people aged 65 or older and how to identify those most at risk of a decline. Topic experts noted that the recommendation in PH16 to 'Advise older people and their carers how to exercise safely for 30 minutes a day (which can be broken down into 10-minute bursts) on 5 days each week or more' is not in line with the current guidelines which focus on 150 minutes per week, Topic experts also noted that 'balance activities are recommended for those at risk of falls' (no references were provided), they questioned whether yoga and Pilates should be explicitly mentioned as examples of exercises that older people could use. They also said that 'Housework is no longer promoted as a form of moderate intensity physical activity, as it is increasingly not of sufficient intensity to increase	**New evidence was identified that may change the recommendation.** Recommendation 2 recommends that older people and their carers are offered tailored exercise and physical activity programmes in the community which include **moderate intensity exercises, strength and resistance, toning and stretching exercises** that are in line with the person's preferences and to encourage regular attendance. The recommendation states that activity should be done for at least 30 minutes a day, 5 days a week. There is a body of evidence on physical activity interventions that focus on relaxation and balance (yoga, tai chi, Pilates, Qigong) that indicates these are effective at improving mental health and well-being in older adults [9-14]. While the recommendation includes toning ad stretching exercises, it could be updated with the addition of relaxation and balance exercise, highlighting these specific interventions as examples. The remaining evidence is overall supportive of physical activity interventions leading to improvements in mental health and well-being in older adults, and is in line with the current recommendation [4, 8, 15-22]. There is also evidence that indicates physical activity interventions that include other leisure activities such as singing, music, social activities or cognitive function activities are effective at improving wellbeing [23-26]. These types of activity are recommended in Older people: independence and mental wellbeing (2015) NICE

Summary of new evidence from 10-year surveillance	Summary of new intelligence from 10-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
the mental component sum of the SF-36 improved significantly from baseline in the intervention group, and the physical component sum improved in both groups, but no statistically significant differences were found between groups. [12] A BA study with elderly females (n=148) participating in a 16 weeks Pilates programme reported a significant improvement in self-confidence, communication efficiency, optimistic trait, anger management and depression at the end of the programme. [13] A BA study with community-dwelling older adults (n=45) participating in a 1 hour long Qigong session twice a week for 8 weeks reported significant improvements in depression and spiritual wellbeing at the end of the intervention. [14] An RCT with adults aged 65 years and older (n=NR) randomised to a vigorous physical activity programme group (VAG) or to a postural gymnastic group (PGG) found that both groups had low baseline depressive symptoms scores (PHQ-9); at the end of the study, both groups had a higher level of QoL (SF-12) 'than the normative standardised sample'; at 12 weeks follow-up, only the VAG group 'maintained significantly-higher scores than those of the normative sample'. [15] An RCT with frail sedentary elderly (n=100) randomised to a supervised-facility multicomponent exercise program (MEP: proprioception, aerobic, strength, and stretching exercises for 65 minutes, 5 days per week for 24 weeks) or a control found that the intervention improved cognitive, emotional and social networking determinants, however these do not appear to be significant. [16]	heart rate. Also “shopping” isn’t a physical activity. Include walking as a form of daily activity, as it is more the most accessible and prevalent physical activity for older adults.’ A topic expert requested recommendations on the use of Apps to support physical activity (no references provided).	guideline NG32. Recommendation 2 should have a cross-reference to NG32 added. There should also be a cross-reference to Physical activity: brief advice for adults in primary care (2013) NICE guideline PH44, recommendation 2 The recommendation should be refreshed in line with current government guidance on the amount of physical activity undertaken each week (150 minutes per week); it is recommended that shopping and housework are removed as examples of exercise, waking is included as an example instead. In relation to physical activity Apps, these will be addressed in the update of Behaviour change: individual approaches (2014) NICE guideline PH49.

Summary of new evidence from 10-year surveillance	Summary of new intelligence from 10-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
An RCT with older adults randomised to a home-based physical strength training plus nutrition intervention (PTN; n=39) or social support intervention (SOSU; n=41) only found significant differences between the groups in QoL on the past, present and future activities domain on the WHOQOL instrument in favour of PTN. Within the PTN group there was improvement in overall QoL, social relations and social participation (stats=NR); but there were no significant effects on QoL within the SOSU group. [17] A BA study with 31 older adults in residential care involved in a moderate-intensity aerobic and muscle-strengthening activity reported a significant improvement in anxiety, social dysfunction and severe depression.[18] An RCT with elderly women (n=66) randomised to a 6 week stationary walking intervention or control reported an improvement in QoL post intervention, results in the control group are not clearly reported. [19] An RCT with older adults (n=120) randomised to an 8 week physical exercise programme or control were significantly happier after the intervention, while there were no changes in happiness in the control group. [20] A RCT with older people with frailty randomised to the 12 week Home-based Older People's Exercise (HOPE) programme or control, using an intention-to-treat analysis (n=40 in HOPE and 30 controls) found no difference in health-related QoL or depression. [21] A non-RCT with 'elderly' adults allocated to an in-home rehabilitation group that received a weekly physical treatment programme and basic nursing		

Summary of new evidence from 10-year surveillance	Summary of new intelligence from 10-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
care in the home (n=100) or a control group that received basic nursing care (n=100) over 1 year, found that quality of life and activities of daily living significantly improved in the intervention group; while there was only a slight improvement in QoL in the control group at 9 months, with 'almost no effects' at the other time-points. [4] A non RCT study with older adults (n=27) allocated to a twice-weekly physical activity combined with laughter exercises versus a 12-week wait list control reported a significant improvement in mental health (SF-36) in the intervention group. [22] A BA study with community-dwelling older adults (n=15) taking part in sessions involving singing familiar songs, physical exercise to music and observation of historical pictures over 10 weeks, reported no significant differences in the Mini Mental State Examination or Behavioral Rating Scale for the Elderly at the end of the intervention, but did report a significantly higher score on the physical component summary of SF-8.[23] A BA study with elderly adults (healthy and with mild cognitive impairment; n=50) on the Long Lasting Memories programmes (cognitive exercises with physical activity using an IT platform) found a significant improvement after the training in global cognitive function, verbal memory, attention, episodic memory and symptoms of depression. [24] A cross-sectional study with adults aged 65 and older (n=105) participating in either solely social groups or social groups plus physical activity reported that there were no significant differences in mental health in the physically active group, findings for the social only group not reported. [25]		

Summary of new evidence from 10-year surveillance	Summary of new intelligence from 10-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
A cross-sectional study with elderly people (n=181) attending a Brazilian government programme that encourages physical and leisure activity (Academia de Cidade program) reported a significant, positive association between QoL and duration of participation in the programme. [26]		
PH6 – 03. Recommendation 3 Walking schemes **evidence statements: 4 and 18**		
One study on walking schemes was identified: A BA study with older adults with visual impairment (n=30; data for 19) attending a day centre rehab programme involving walking groups, language courses and memory games found no changes in depression at the end of 12 months in the programme, the only significant change was an improvement in cognitive scores.[27]	Initial intelligence gathering identified the following: Physical activity: walking and cycling (2012) NICE guideline PH41 provides recommendations on programmes that encourage people to increase the amount they walk or cycle for travel or recreation. Previous surveillance review in 2015 identified that 'Walking the way to health initiative' was no longer a prominent initiative.	**New evidence was identified that may have an impact on the recommendation: refresh** Recommendation 3 highlights that a range of walking schemes of low to moderate intensity with a choice of local routes to suit different abilities should be offered, older people should be encouraged and supported to attend regularly. Recommendations on the content of the walking schemes are provided, including that these have a trained person leading walks, there is flexibility in the timing and location of walks to meet the participants needs, walks should last 1 hour, with at least 30–40 minutes of walking plus stretching and warm-up/cool-down exercises. While Physical activity: walking and cycling (2012) NICE guideline PH41 is not specific to over 65s, it does provide far more details on walking programmes (recommendations 6 and 7) than is provided in recommendation 3, it is therefore recommended to add a cross-reference to PH41 to this recommendation. Reference to 'Walking the way to health initiative' walk leaders should be changed to ‘walking group organisers’. Only one study was identified assessing the effect of a multi-component walking-based intervention, while

Summary of new evidence from 10-year surveillance	Summary of new intelligence from 10-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
		this indicated that there were no improvements in mental health after 12 months of the programme, this on its own, does not indicate that the current recommendation is incorrect.
PH6 – 04. Recommendation 4 Training **evidence statements: IDE (inference derived from the evidence)**		
No studies were identified.	No evidence.	**No new evidence was identified, no changes** Recommendation 4 recommends that occupational therapists are involved in the design and development of training schemes for those working with older people, and that these schemes should include: knowledge and application of the principles and methods of occupational therapy and health and wellbeing promotion, communication skills, information on how to monitor and redesign services to meet the needs of older people. Recommended skills practitioners should have include good communication skills and the ability to encourage older people to undertake daily routines and activities that help to maintain/improve health and wellbeing.
Research recommendations		
RR – 01 How can older people who might benefit most from interventions to promote mental wellbeing be identified?		
No studies were identified.	No evidence.	**No new evidence was identified, no changes**
RR – 02 How is the effectiveness of interventions to promote the mental wellbeing of older people affected by place of residence, advanced age, mobility or physical health, income, ethnicity, cultural background, sexual orientation, social networks and language or learning disabilities?		
No studies were identified.	No evidence.	**No new evidence was identified, no changes**

Summary of new evidence from 10-year surveillance	Summary of new intelligence from 10-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
RR – 03 What measures of the mental wellbeing of older people and changes over time could be used consistently across studies? What is the association between standardised measures of emotional and social wellbeing and quality of life and self-reported outcomes, and how could such measures be used in economic appraisals?		
No studies were identified.	No evidence.	**No new evidence was identified, no changes**
RR – 04 What are the most effective and cost-effective ways of improving the mental wellbeing of the most vulnerable and disadvantaged older people? This includes those with physical or learning disabilities, those on very low incomes or living in social or rural isolation (including older people from minority ethnic groups).		
No studies were identified.	No evidence.	**No new evidence was identified, no changes**
RR – 05 How does the effectiveness of interventions depend on the characteristics of those delivering the intervention, the involvement of older people in their design and delivery or the involvement of family members and/or carers?		
No studies were identified.	No evidence.	**No new evidence was identified, no changes**
Gaps in the evidence (additional to recommendations for research)		
There were few evaluations that determined which interventions were most effective; or whether interventions that focused directly on mental wellbeing (for example, maintaining quality of life or self-esteem) were more effective than those that focused on improving independence and ability to do day-to-day tasks.		
No studies were identified.	No evidence.	**No new evidence was identified, no changes**
No evaluations were found of the effect on mental wellbeing of environmental interventions (for example, adaptive equipment or assistive technologies).		
A non-RCT with adults >65 years old in an IT welfare intervention (n=100) versus a control group (n=100), found that the intervention group had better balance (stats=NR) and significantly lower levels of depression and higher social participation. [5] A BA study with older adults (n=13) using a home-based information communication technology (ICT) programme on an iPad trained by occupational therapists found a 'significant trend' in ICT activities across 6 months, with social connectedness activities modestly increasing. [6]	No evidence.	**New evidence was identified that does not have an impact.** Three studies reported on the outcomes of information communication technology (ICT) interventions. [5, 6, 24] While they all indicated that these can lead to improvements in mental health and wellbeing, there remains a limited body of evidence on ICT interventions.

Summary of new evidence from 10-year surveillance	Summary of new intelligence from 10-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
A BA study with elderly adults (healthy and with mild cognitive impairment; n=50) on the Long Lasting Memories programmes (cognitive exercises with physical activity using an IT platform) found a significant improvement after the training in global cognitive function, verbal memory, attention, episodic memory and symptoms of depression. [24]		
No evaluations were found of the effect on mental wellbeing of community interventions to improve the physical and social environment (for example, street lighting) that were specifically aimed at older people. No evaluations were found of the impact of access to community facilities and services (such as benefits advice or educational and volunteering opportunities) on the mental wellbeing of older people.		
One study was identified on the impact of an community environmental intervention on the mental wellbeing of older people: A cross-sectional study with adults aged over 65 years old (n=NR) living in intervention streets (residential street improvements as part of Sustrans DIY streets) or comparison streets, found that the intervention did not impact on quality of life. [28]	A topic expert noted that 'there are many Areas of Outstanding Natural Beauty and National Parks that support schemes to attract older people and those with dementia enabling them to get out and about' and said that 'It would be good to reference these as well' (no references to evidence provided)	**New evidence was identified that does not have an impact.** There remains limited evidence in this area.
There was little evaluation of the specific component of an intervention that would ensure continued effectiveness (for example, disaggregating the effect of social interactions from physical exercise).		
No studies were identified.	No evidence.	**No new evidence was identified, no changes**
There was a lack of long-term evidence for effectiveness and cost effectiveness.		
An RCT with frail community-dwelling adults aged 65 or older (n=153) randomised to a case management intervention delivered by nurses and physiotherapists over 12 months, with 1 or more home visits per month or a control group, found no significant differences in loneliness, life satisfaction or depressive symptoms using an ITT analysis at 6 and	No evidence.	**New evidence was identified that does not have an impact.** There remains limited evidence in this area.

Summary of new evidence from 10-year surveillance	Summary of new intelligence from 10-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
12 month follow-up; significant improvements were found in a complete case analysis in favour of the intervention for loneliness and life satisfaction at 6 months follow-up and for depressive symptoms at 12 months. [3]		
In many cases better quality research is required before the wider applicability of the interventions can be determined.		
No studies were identified.	No evidence.	**No new evidence was identified, no changes**

NG32

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
NG32-01 **Recommendation 1.1 Principles of good practice** **evidence statements 1.1.1, 1.1.2; review 3; review 4; Expert Paper (EP) 1, EP3, EP4, EP6**		
No studies were identified.	No evidence.	**No new evidence was identified, no changes** Recommendation 1 covers basic principles of good practice, including: supporting/publicising/providing a range of group, one-to-one and volunteering activities that meet the needs and interests of local older people; co-production; ensuring activities take place at regular times and locations, provide the opportunity to socialise and complement other activities that may support different aspects of older people's independence and mental wellbeing, such as their physical health, their sense of belonging to a community ('social connectedness') and their sense of purpose; ensuring activities are inclusive and take account of a range of different needs.

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
NG32-02 **Recommendation 1.2 Group-based activities** **evidence statements 1.1.1, 1.1.2, 1.1.5, 1.1.7, 1.2.1, 1.2.2, 1.2.3, 1.4.1, 1.4.2, 1.6.1, 1.6.2, 1.6.3, 1.6.4; review 3; review 4; EP3, economic modelling report**		
Twenty studies (5 SRs, 1 review, 6 RCTs, 2 non-RCTs, 5 BA studies and 1 survey) were identified that assessed the effectiveness of group-based interventions in older adults on mental health and well-being; and 6 studies were identified (3 SRs, 2 reviews and 1 BA) that assessed the effectiveness of activities, training or support that encourage older people to use information and communication technologies: **Interventions involving music & singing** A systematic review of 39 studies on the relationship between music and singing interventions and wellbeing, found that a third of studies included older people, and that these showed 'evidence that participatory music and singing programmes can help to maintain wellbeing and prevent isolation, depression and mental ill health in older people'. [29] A systematic review of wellbeing outcomes of music and singing for adults (n=1,364 participants of varied ages with health conditions) reported that there was moderate quality evidence that 'targeted, culturally relevant music interventions, including playing a musical instrument and singing, can decrease depression in older people with chronic conditions in residential and community settings.' [30] A survey study of older people (n=NR) comparing participation in musical versus other activities reported that participation in music-based activities resulted in significantly more positive responses in purpose, autonomy, control and social affirmation. [31]	Initial intelligence gathering identified the following on-going research: Promotion of mental well-being in older people A topic expert highlighted A preventative lifestyle intervention for older adults (lifestyle matters): a randomised controlled trial [2], however it was considered to be more relevant to PH16 as it was for an intervention based on recommendations in Mental wellbeing in over 65s: occupational therapy and physical activity interventions (2008) NICE guideline PH16. The study has been considered as part of the surveillance review of PH16. .	**New evidence was identified that does not have an impact on the recommendation.** Recommendation 2 recommends that the following group activities are provided: singing programmes; arts and crafts and other creative activities; intergenerational activities (e.g. older people helping with reading in schools or young people providing older people with support to use new technologies); tailored community-based physical activity programmes including walking schemes (recommendations 2 and 3 in PH16 are referenced here). The recommendation states that the following could be considered: technical support that encourages the use of information and communication technologies (ICT) such as mobile telephones, internet-enabled TVs and computers; and activities related to hobbies and interests, education and other learning opportunities. Overall, the evidence on group-based interventions for older adults supports the current recommendation to provide singing, arts and crafts, other creative activities and inter-generational activities to older adults to support mental health and wellbeing; and supports the use of these alongside physical activity [9, 27, 29-45]. The evidence on ICT supports the recommendation to consider offering this intervention as there still remains some inconsistency concerning the effectiveness of ICT-based interventions in improving mental health and well-being among older adults [46-51].

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
Music and physical activity A systematic review of 15 studies on relaxation interventions in older adults found that these interventions often led to reductions in depression and anxiety when compared to controls, The authors reported that 'progressive muscle relaxation training, music intervention, and yoga had the strongest intervention effects on depression. Music intervention, yoga, and combined relaxation training most effectively reduced anxiety symptoms among older adults' and the effects can last for 14 to 24 weeks after the interventions. [9] A BA study with community-dwelling older adults (n=15) taking part in sessions involving singing familiar songs, physical exercise to music and observation of historical pictures over 10 weeks, reported no significant differences in the Mini Mental State Examination or Behavioral Rating Scale for the Elderly at the end of the intervention, but did report a significantly higher score on the physical component summary of SF-8. [23] **Dance and arts** A BA study with older people (n=21) participating in a 3 month dance and arts programme reported improvements in QoL 'reaching statistical significance' at the end of the programme. [32] **Reminiscence-based interventions** A systematic review of 5 studies on interventions with both music and reminiscence activities reported that these interventions had a positive effect on wellbeing in four of the studies. [33] An RCT with elderly women (n=29) randomised to a narrative group reminiscence intervention or a control group discussions for 6 sessions, found a significant		

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
improvement in happiness scores after the 3rd and 6th sessions in the intervention group and no difference in happiness in the control group. [34] An RCT with 'seniors' (n=40) randomised to a secular song group, religious song group or standard story reminiscence group run over 6 weeks, found no evidence of a main effect of change in anxiety or life satisfaction at the end of the interventions, but reported a time by type of intervention effect whereby 'initial fit with the story reminiscence group was associated with ... greater life satisfaction, while fit with the religious song reminiscence group was associated with greater life satisfaction and less anxiety'. [35] A non-RCT with older adults participating in a reminiscence intervention programme on coping strategies (n=150) or control (n=NR) reported significant improvements in problem-solving coping, positive reappraisal, social support seeking, and avoidance coping in the intervention compared to control group. Effects declined after 3 months, but there was higher problem-solving coping, positive reappraisal and lower overt emotional expression reported in the intervention vs control group (stats=NR). [36] **Social activity-based interventions** A systematic review of cost-effectiveness of interventions that aim to reduce loneliness in older people reported that there was 'mixed evidence for the cost effectiveness of befriending interventions and the benefits of participation in social activities, ranging from cost saving to cost ineffective interventions' but signposting and navigation services may be cost effective. [37]		

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
A scoping review of 31 studies on the effects of Men's Sheds and other gendered social activities on the health and wellbeing of older men reported that there was 'some limited evidence that Men's Sheds and other gendered social activities may have impact on the mental health and wellbeing of older men' and that key components of successful interventions were 'accessibility, range of activities, local support and skilled coordination'. [38] An RCT with community living 67-92 year olds with severe mobility limitations (n=121) randomised to an individualised outdoor activity intervention involving volunteers assisting the participant in attending recreational out-of-home activities once a week for 3 months or waiting list control reported that depressive symptoms did not change in the intervention group, but that sub-group analysis showed that those with minor depressive symptoms at baseline showed a reduction in depressive symptoms in the intervention group and an increase in the control group. [39] An RCT with adults aged 75-79 years (n=223) randomised to a 6 month social intervention (choice of supervised exercise, social activity, or personal counselling) or control reported no change in number of depressive symptoms, a significant decrease in loneliness and melancholy and significant increase in attachment and guidance in both the intervention and control groups, with only social integration significantly increasing in the intervention group but not in controls. [40] A BA study with low income older adults (n=52) participating in a programme designed to facilitate community participation (Let's Go) reported significant improvements in social activities, social life and relationships at 4 weeks and 6 months. [41]		

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
A BA study of a social capital intervention involving co-ordinated action to build a network between primary healthcare centres and community assets in a neighbourhood plus a group-based programme promoting social capital among lonely older people (n=38) through social support and participation, reported a significant decrease in loneliness and increase in social participation and support, which was also evident at 2 years follow-up. [42] **Memory-based interventions** An RCT with healthy older adults (n=113) and those with amnestic mild cognitive impairment (n=106) randomised to a 6 week memory group or waitlist control, found intervention effects for wellbeing in both groups. [43] An RCT with adults aged 65 years or older with memory difficulties (n=44) randomised to health promotion, cognitive training or a participation-centred course reported that all 3 interventions seemed to decrease loneliness. [44] A BA study with older adults with visual impairment (n=30; data for 19) attending a day centre rehab programme involving walking groups, language courses and memory games found no changes in depression at the end of 12 months in the programme, the only significant change was an improvement in cognitive scores. [27] **Inter-generational activities** A non-RCT with over 65 year olds receiving training and volunteering to read picture books to children within schools (n=26) or control group (n=54) found that sense of meaningfulness significantly increased in the intervention group over time, and that participation in the intervention was associated with a		

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
sense of manageability, which was significantly associated with depressive mood. [45] **Information and communication technologies** A systematic review of 21 studies on technology-based interventions aiming to promote mental health and wellbeing in people aged 65 years and older reported that the evidence base was inconsistent; it highlighted that 3 of the 6 studies with high or moderate quality, which focused on computer/internet training, reported statistically significant positive effects on life satisfaction, experienced social support and depression. The authors noted that there is a 'need for more methodologically rigorous studies'. [46] A systematic review of 12 reviews including 22 studies evaluating e-interventions for social isolation or loneliness reported 'inconsistent and weak evidence on using e-Interventions for loneliness in older people'. [47] A systematic review of studies investigating the link between internet use and mental health in older adults (18 quantitative and 14 qualitative) reported that findings from synthesising quantitative data indicated 'an overall positive association between Internet use and mental health and its psychosocial covariates in later life'. [48] A literature review of publications (n=NR) on information and communication technologies in ambient assisted living projects in elderly adults reported that these interventions can 'successfully contribute to all dimensions of elderly's quality of life' but that further research is required. [49] A scoping review of studies (n=NR) on older people's use of information and communication technology on QoL reported inconsistent findings, the authors stated		

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
that 'Studies which have rigorously assessed the impact of older people's use of ICT on their QOL mostly demonstrate little effect'. [50] A BA study with adults aged 65 years and older (n=144) helped to use the internet either by volunteers in their own home over 8 visits (home) or in small group sessions over 6 visits (group) found that, compared to baseline, number of contacts with others significantly increased, loneliness scores decreased and mental wellbeing improved. [51]		
NG32-03 **Recommendation 1.3 One-to-one activities** **evidence statements 1.3.1, 2.6; review 3**		
Two studies (SR[37] and RCT[52]) were identified that assessed the effectiveness of befriending interventions: A systematic review of cost-effectiveness of interventions that aim to reduce loneliness in older people reported that there was 'mixed evidence for the cost effectiveness of befriending interventions and the benefits of participation in social activities, ranging from cost saving to cost ineffective interventions' but signposting and navigation services may be cost effective. [37] An RCT with adults aged over 74 years randomised to a telephone befriending intervention (n=24) or a control (n=30) found non-significant improvements in 6 month mental health scores (SF-36), however the trial was not sufficiently powered and closed early due to poor recruitment of volunteers to deliver the intervention. [52]	Initial intelligence gathering identified the following on-going research: Putting Life in Years (PLINY): Telephone friendship groups research study. Evaluation of the effectiveness and cost effectiveness of an intervention to promote mental wellbeing in community living older people A topic expert highlighted a study: Only available to a selected few? Is it feasible to rely on a volunteer workforce for complex intervention delivery? Which reports on the problems recruiting and retaining a volunteer workforce within RCT identified in the literature search [52].	**New evidence was identified that does not have an impact on the recommendation.** Recommendation 3 recommends offering the following 1-to-1 activities: programmes to help people develop and maintain friendships; befriending opportunities that involve brief visits, telephone calls or the use of other media; and information on national or local services offering support and advice by telephone and other media. There is inconclusive evidence of the effectiveness [52] or cost-effectiveness [37] of befriending interventions, but this is based on only 2 studies; and this is an area of on-going research, which will be looked at on publication.

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
NG32-04 **Recommendation 1.4 Volunteering** **evidence statements 1.2.1, 1.2.3, 2.2; review 3; review 4; EP4**		
One study was identified that assessed the effectiveness of volunteering: A non-RCT with over 65 year olds receiving training and volunteering to read picture books to children within schools (n=26) or control group (n=54) found that sense of meaningfulness significantly increased in the intervention group over time, and that participation in the intervention was associated with a sense of manageability, which was significantly associated with depressive mood. [45]	No evidence.	**New evidence was identified that does not have an impact on the recommendation.** Recommendation 4 states that older people should be made aware of the value and benefits of volunteering; be provided with opportunities to volunteer; and actions should be taken to encourage volunteering, such as varying the length and times of volunteering sessions to suit individual ability or preference, providing training, supervision and ongoing support. The 1 new study identified that assesses the effectiveness of volunteering on older adults mental health and well-being, supports the current recommendation on the benefits of volunteering [45].
NG32-05 **Recommendation 1.5 Identifying those most at risk of a decline in their independence and mental wellbeing** **evidence statements review 3; EP1, EP2, EP3, EP5, EP6**		
No studies were identified.	Initial intelligence gathering identified the following: Older people with social care needs and multiple long-term conditions (2015) NICE guideline NG22, recommendation 1.5 highlights what can be done by practitioners to prevent social isolation.	**No new evidence was identified, no changes** Recommendation 5 recommends that service providers and others are made aware of the effect that poor mental wellbeing and lack of independence can have on an older person's mental and physical health and their social interactions; that staff in contact with older people are aware of the importance of maintaining and improving their independence and mental wellbeing, can identify those most at risk of a decline in their independence and mental wellbeing and give those most at risk information on activities that might help them. It highlights that more information is provided in the implementation section of the guideline.

Summary of new evidence from 2-year surveillance	Summary of new intelligence from 2-year surveillance (from topic experts or initial internal intelligence gathering)	Impact
Research recommendations		
RR – 01 In the UK, which activity-based interventions are most effective and cost effective at protecting older people who are at risk of a decline in their independence and mental wellbeing?		
No studies were identified.	No evidence.	**No new evidence was identified, no changes**
RR – 02 In the UK, what are the most effective ways to identify older people who at risk of a decline in their independence and mental wellbeing?		
No studies were identified.	No evidence.	**No new evidence was identified, no changes**
RR – 03 In the UK, what are the key components of a local coordination role to ensure best value for money in promoting older people's independence and mental wellbeing?		
No studies were identified.	No evidence.	**No new evidence was identified, no changes**
RR – 04 In the UK, what are the most effective ways of involving older people in developing interventions to promote their independence and mental wellbeing?		
No studies were identified.	No evidence.	**No new evidence was identified, no changes**
RR – 05 In the UK, which factors or processes in an intervention influence older people's mental wellbeing? How do these factors interact with one another and does the importance differ for different groups?		
No studies were identified.	No evidence.	**No new evidence was identified, no changes**
RR – 06 In the UK, which mid-life groups are currently at most risk of losing their independence or experiencing poor mental wellbeing in later life? And which interventions are most effective and cost effective in preparing these people for later life?		
No studies were identified.	No evidence.	**No new evidence was identified, no changes**
Gaps in the evidence		
The needs of different populations as they age. In particular how interventions can be tailored for different stages of someone's life.		
No studies were identified.	No evidence.	**No new evidence was identified, no changes**

References

1. Pettersson C, Iwarsson S: **Evidence-based interventions involving occupational therapists are needed in re-ablement for older community-living people: a systematic review**. *British Journal of Occupational Therapy* 2017, **80**(5):273-285.
2. Mountain G, et a: **A preventative lifestyle intervention for older adults (lifestyle matters): a randomised controlled trial**. *Age and Ageing* 2017, **46**(4):627-634.
3. Taube E, Kristensson J, Midlov P, Jakobsson U: **The use of case management for community-dwelling older people: the effects on loneliness, symptoms of depression and life satisfaction in a randomised controlled trial**. *Scand J Caring Sci* 2017, **12**:12.
4. Imanishi M, Tomohisa H, Higaki K: **Impact of continuous in-home rehabilitation on quality of life and activities of daily living in elderly clients over 1 year**. *Geriatrics & gerontology international* 2017, **08**:08.
5. Kim D, Yang Y: **The effect of using welfare IT convergence contents on physical function, depression, and social participation in the elderly**. *J Phys Ther Sci* 2016, **28**(3):886-890.
6. Arthanat S, Vroman KG, Lysack C: **A home-based individualized information communication technology training program for older adults: a demonstration of effectiveness and value**. *Disabil* 2016, **11**(4):316-324.
7. Szanton SL, Leff B, Wolff JL, Roberts L, Gitlin LN: **Home-Based Care Program Reduces Disability And Promotes Aging In Place**. *Health Aff (Millwood)* 2016, **35**(9):1558-1563.
8. Bouaziz W, Vogel T, Schmitt E, Kaltenbach G, Geny B, Lang PO: **Health benefits of aerobic training programs in adults aged 70 and over: a systematic review**. *Arch Gerontol Geriatr* 2017, **69**:110-127.
9. Klainin-Yobas P, et a: **Effects of relaxation interventions on depression and anxiety among older adults: a systematic review**. *Aging and Mental Health* 2015, **19**(12):1043-1055.
10. Tew GA, Howsam J, Hardy M, Bissell L: **Adapted yoga to improve physical function and health-related quality of life in physically-inactive older adults: a randomised controlled pilot trial**. *BMC Geriatrics* 2017, **17**(1):131.
11. Saravanakumar P, Higgins IJ, Van Der Riet PJ, Marquez J, Sibbritt D: **The influence of tai chi and yoga on balance and falls in a residential care setting: a randomised controlled trial**. *Contemp Nurse* 2014:5231-5255.
12. Dohrn IM, Hagstromer M, Hellenius ML, Stahle A: **Short- and Long-Term Effects of Balance Training on Physical Activity in Older Adults With Osteoporosis: A Randomized Controlled Trial**. *J Geriatr Phys Ther* 2017, **40**(2):102-111.
13. Roh SY: **Effect of a 16-week Pilates exercise program on the ego resiliency and depression in elderly women**. *Journal of Exercise Rehabilitation* 2016, **12**(5):494-498.
14. Chang PS, Knobf MT, Oh B, Funk M: **Physical and psychological effects of Qigong exercise in community-dwelling older adults: An exploratory study**. *Geriatr Nurs* 2017, **16**:16.
15. Mura G, Sancassiani F, Migliaccio GM, Collu G, Carta MG: **The association between different kinds of exercise and quality of life in the long term. Results of a randomized controlled trial on the elderly**. *Clin Pract Epidemol Ment Health* 2014, **10**:36-41.
16. Tarazona-Santabalbina FJ, Gomez-Cabrera MC, Perez-Ros P, Martinez-Arnau FM, Cabo H, Tsaparas K, Salvador-Pascual A, Rodriguez-Manas L, Vina J: **A Multicomponent Exercise Intervention that Reverses Frailty and Improves Cognition, Emotion, and Social Networking in the Community-Dwelling Frail Elderly: A Randomized Clinical Trial**. *J Am Med Dir Assoc* 2016, **17**(5):426-433.
17. Kapan A, Winzer E, Haider S, Titze S, Schindler K, Lackinger C, Dorner TE: **Impact of a lay-led home-based intervention programme on quality of life in community-dwelling pre-frail and frail older adults: a randomized controlled trial**. *BMC Geriatrics* 2017, **17**(1):154.
18. Matlabi H, Shaghaghi A, Amiri S: **A Pilot Physical Activity Initiative to Improve Mental Health Status amongst Iranian Institutionalized Older People**. *Health promot* 2014, **4**(1):68-76.
19. Dehi M, Aghajari P, Shahshahani M, Takfallah L, Jahangiri L: **The effect of stationary walking on the quality of life of the elderly women: a randomized controlled trial**. *J Caring Sci* 2014, **3**(2):103-111.
20. Khazaee-pool M, Sadeghi R, Majlessi F, Foroushani A: **Effects of physical exercise programme on happiness among older people**. *Journal of Psychiatric and Mental Health Nursing* 2015, **22**(1):47-57.
21. Clegg A, Barber S, Young J, Iliffe S, Forster A: **The Home-based Older People's Exercise (HOPE) trial: a pilot randomised controlled trial of a home-based exercise intervention for older people with frailty**. *Age Ageing* 2014, **43**(5):687-695.
22. Greene CM, Morgan JC, Traywick LS, Mingo CA: **Evaluation of a Laughter-based Exercise Program on Health and Self-efficacy for Exercise**. *Gerontologist* 2016, **04**:04.

23. Fujita T, Ito A, Kikuchi N, Kakinuma T, Sato Y: **Effects of compound music program on cognitive function and QOL in community-dwelling elderly**. *J Phys Ther Sci* 2016, **28**(11):3209-3212.

24. Gonalez-Palau F, et a: **The effects of a computer-based cognitive and physical training program in a healthy and mildly cognitive impaired aging sample**. *Aging and Mental Health* 2014, **18**(7):838-846.

25. Millard J: **The health of older adults in community activities**. *Working with Older People* 2017, **21**(2):90-99.

26. da Fonte E, Feitosa PH, de Oliveira Neto LT, de Araujo CL, Figueiroa JN, Alves JG: **Effects of a physical activity program on the quality of life among elderly people in Brazil**. *Journal of Family Medicine & Primary Care* 2016, **5**(1):139-142.

27. Wittich W, Murphy C, Mulrooney D: **An adapted adult day centre for older adults with sensory impairment**. *British Journal of Visual Impairment* 2014, **32**(3):249-262.

28. Ward Thompson C, Curl A, Aspinall P, Alves S, Zuin A: **Do changes to the local street environment alter behaviour and quality of life of older adults? The 'DIY Streets' intervention**. *British Journal of Sports Medicine* 2014, **48**(13):1059-1065.

29. Daykin N, et a: **A systematic review of the wellbeing outcomes of music and singing in adults...Volume 1: music and singing for wellbeing in healthy adults**: What Works Centre for Wellbeing; 2016.

30. Daykin N, et a: **Systematic review: music, singing and wellbeing for adults living with diagnosed conditions**. London: What Works Centre for Wellbeing; 2016.

31. Hallam S, Creech A, Varvarigou M, McQueen H, Gaunt H: **Does active engagement in community music support the well-being of older people?** *Arts & Health: An International Journal of Research, Policy and Practice* 2014, **6**(2):101-116.

32. Skingley A, De'Ath S, Napleton L: **Evaluation of edna: arts and dance for older people**. *Working with Older People* 2016, **20**(1):46-56.

33. Istvandity L: **Combining music and reminiscence therapy interventions for wellbeing in elderly populations: A systematic review**. *Complement Ther Clin Pract* 2017, **28**:18-25.

34. Yousefi Z, Sharifi K, Tagharrobi Z, Akbari H: **The Effect of Narrative Reminiscence on Happiness of Elderly Women**. *Iran* 2015, **17**(11):e19612.

35. Haslam C, et a: **Social identification moderates cognitive health and well-being following story- and song-based reminiscence**. *Aging and Mental Health* 2014, **18**(4):425-434.

36. Satorres E, Viguer P, Fortuna FB, Melendez JC: **Effectiveness of instrumental reminiscence intervention on improving coping in healthy older adults**. *Stress health* 2017, **18**:18.

37. McDaid D, Bauer A, Park AL: **Making the case for investing in actions to prevent and/or tackle loneliness: a systematic review. A briefing paper**. London: London School of Economics. Personal Social Services Research Unit; 2017.

38. Milligan C, et a: **Older men and social activity: a scoping review of Men's Sheds and other gendered interventions**. *Ageing and Society* 2016, **36**(5):895-923.

39. Rantakokko M, et a: **The effect of out-of-home activity intervention delivered by volunteers on depressive symptoms among older people with severe mobility limitations: a randomized controlled trial**. *Aging and Mental Health* 2015, **19**(3):231-238.

40. Pynnonen K, Tormakangas T, Rantanen T, Tiikkainen P, Kallinen M: **Effect of a social intervention of choice vs. control on depressive symptoms, melancholy, feeling of loneliness, and perceived togetherness in older Finnish people: a randomized controlled trial**. *Aging Ment Health* 2016:1-8.

41. Mulry CM, Papetti C, De Martinis J, Ravinsky M: **Facilitating Wellness in Urban-Dwelling, Low-Income Older Adults Through Community Mobility: A Mixed-Methods Study**. *Am J Occup Ther* 2017, **71**(4):7104190030p7104190031-7104190030p7104190037.

42. Coll-Planas L: **Promoting social capital to alleviate loneliness and improve health among older people in Spain**. *Health and Social Care in the Community* 2017, **25**(1):145-157.

43. Kinsella GJ, Ames D, Storey E, Ong B, Pike KE, Saling MM, Clare L, Mullaly E, Rand E: **Strategies for improving memory: A randomized trial of memory groups for older people, including those with mild cognitive impairment**. *J Alzheimers Dis* 2015, **49**(1):31-43.

44. Cohen-Mansfield J, et a: **Interventions for older persons reporting memory difficulties: a randomized controlled pilot study**. *Int J Geriatr Psychiatry* 2015, **30**(5):478–486.

45. Murayama Y, et a: **The effect of intergenerational programs on the mental health of elderly adults**. *Aging and Mental Health* 2015, **19**(4):306-314.

46. Forsman AK, Nordmyr J, Matosevic T, Park AL, Wahlbeck K, McDaid D: **Promoting mental wellbeing among older people: technology-based interventions**. *Health Promot Internation* 2017, **30**:30.

47. Chipps J, Jarvis MA, Ramlall S: **The effectiveness of eInterventions on reducing social isolation in older persons: A systematic review of systematic reviews**. *J Telemed Telecare* 2017:1357633X17733773.

48. Forsman AK, Nordmyr J: **Psychosocial Links Between Internet Use and Mental Health in Later Life: A Systematic Review of Quantitative and Qualitative Evidence**. *J Appl Gerontol* 2015, **05**:05.

49. Siegel C, Dorner TE: **Information technologies for active and assisted living-Influences to the quality of life of an ageing society**. *Int J Med Inf* 2017, **100**:32-45.

50. Damant J, Knapp M, Freddolino P, Lombard D: **Effects of digital engagement on the quality of life of older people**. *Health Soc Care Community* 2017, **25**(6):1679-1703.

51. Jones RB, Ashurst EJ, Atkey J, Duffy B: **Older people going online: Its value and before-after evaluation of volunteer support**. *Journal of Medical Internet Research* 2015, **17**(5):No Pagination Specified.

52. Mountain GA, Hind D, Gossage-Worrall R, Walters SJ, Duncan R, Newbould L, Rex S, Jones C, Bowling A, Cattan M *et al*: **'Putting Life in Years' (PLINY) telephone friendship groups research study: pilot randomised controlled trial**. *Trials* 2014, **15**:141.

53. Lifestyle Matters trial

54. The development and feasibility of a new service to promote health and well-being in older people who are starting to become frailer: The HomeHealth study

55. Putting Life in Years (PLINY): Telephone friendship groups research study. Evaluation of the effectiveness and cost effectiveness of an intervention to promote mental wellbeing in community living older people