Appendix P: Forest Plots

Contents

A.1 Abbreviations

CSHQ	**Children's Sleep Habits Questionnaire**
EIBI	**Early Intensive Behavioural Intervention**
HHHR	**hand-held health record**
ICD-10	**International Statistical Classification of Diseases and Related Health Problems (10th edition)**
PAS-ADD	**Psychiatric Assessment Schedule for Adults with a Developmental Disability Checklist**
ROC	**Receiver operating characteristic**
SSTP	**Stepping Stones Triple-P**
TAU	**treatment as usual**

A.2 Risk markers associated with the development of behaviour that challenges

A.2.1 Auditory impairment

Figure 1: Auditory impairment versus no auditory impairment as a risk factor for all aggression (physical, verbal and destructive)

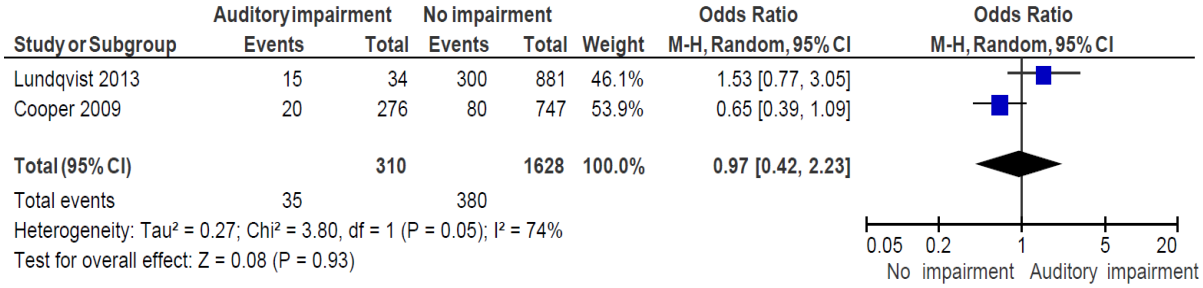


Figure 2: Auditory impairment versus no auditory impairment as a risk factor for self-injury

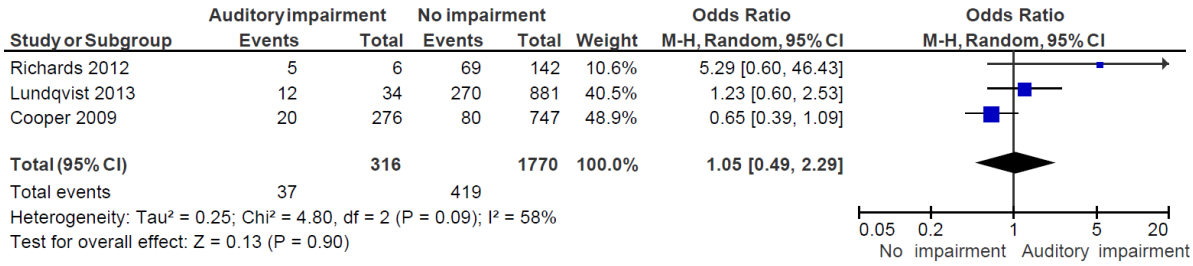
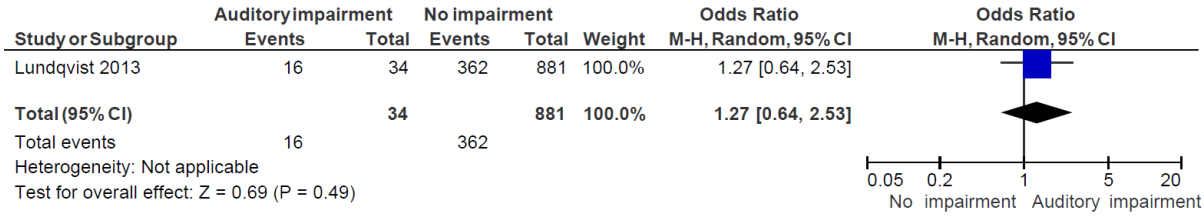


Figure 3: Auditory impairment versus no auditory impairment as a risk factor for stereotypy



A.2.2 Autism diagnosis

Figure 4: Autism diagnosis versus no autism diagnosis as a risk factor for all aggression (physical, verbal and destructive)

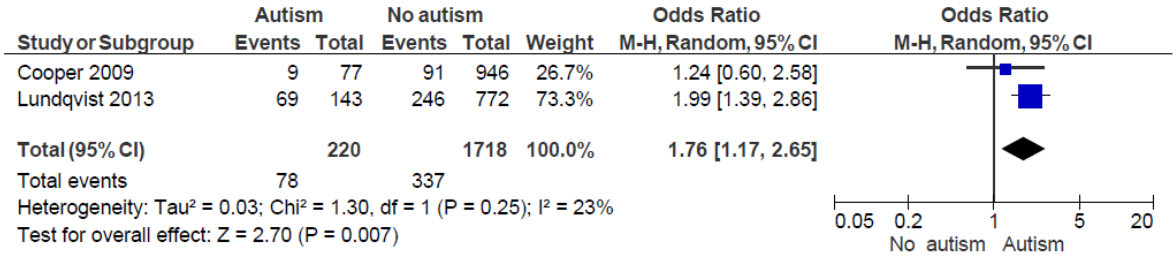


Figure 5: Autism diagnosis versus no autism diagnosis as a risk factor for physical aggression

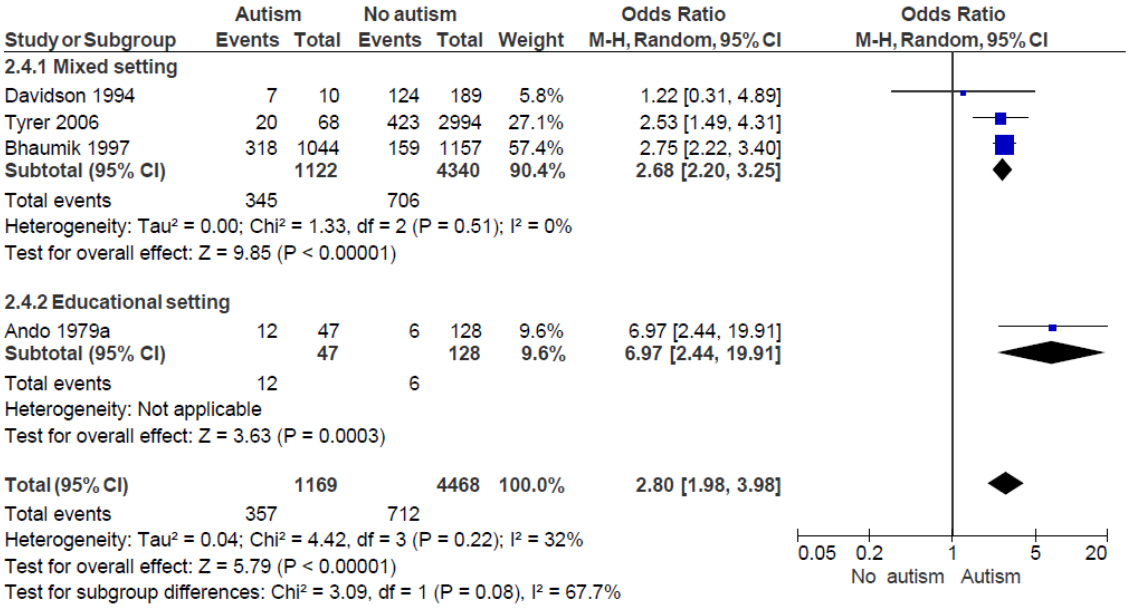


Figure 6: Autism diagnosis versus no autism diagnosis as a risk factor for destruction of property

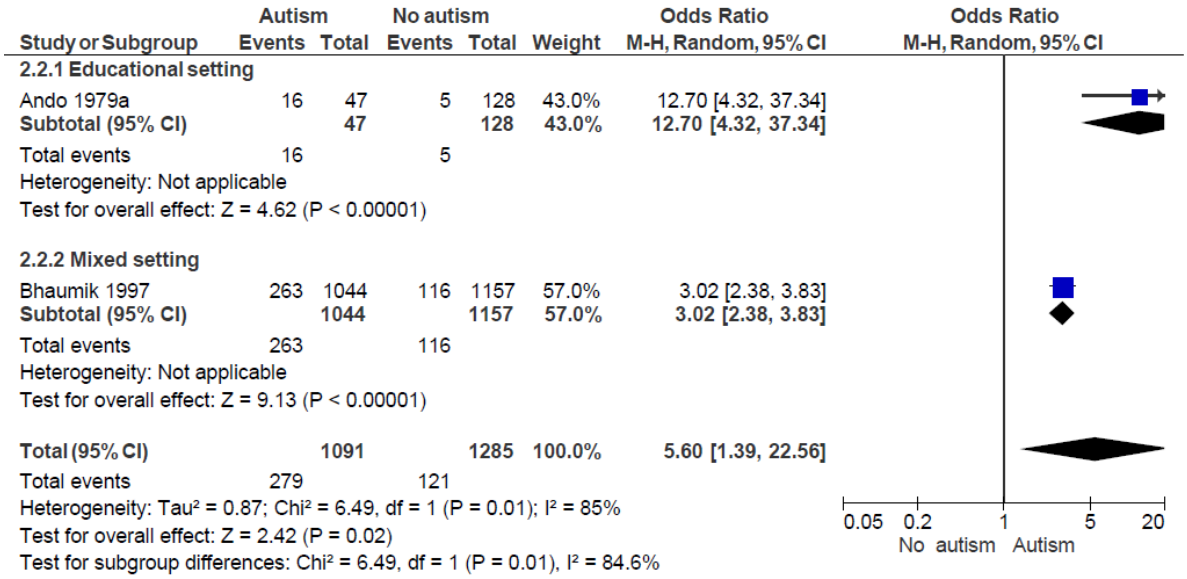
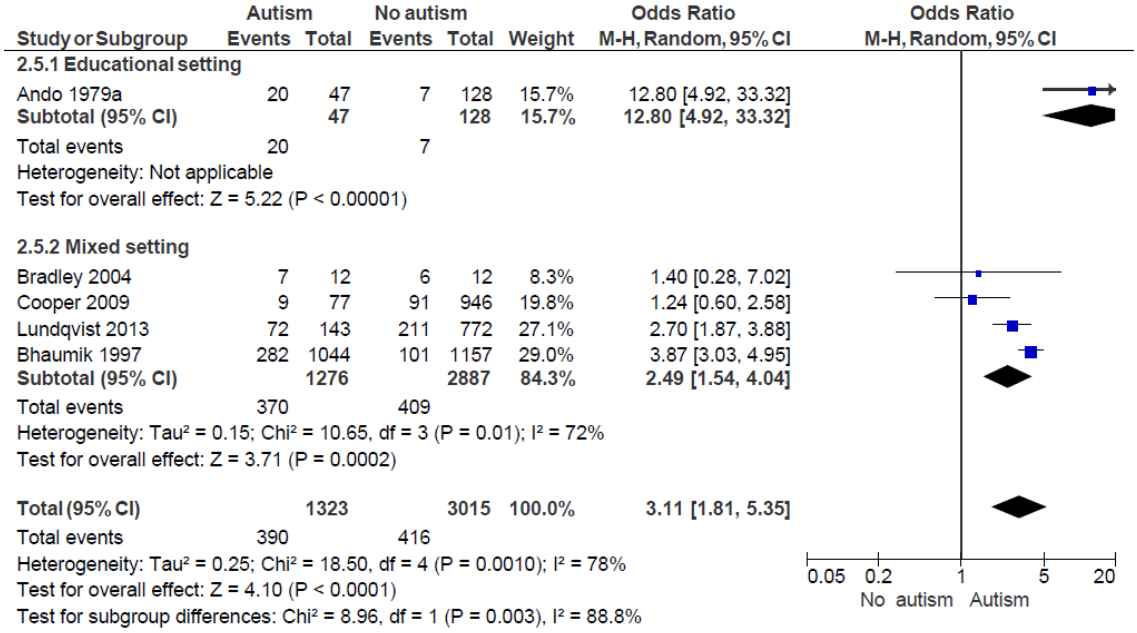


Figure 7: Autism diagnosis versus no autism diagnosis as a risk factor for self-injury



A.2.3 Degree of learning disability

Figure 8: Mild/moderate learning disability versus severe/profound learning disability as a risk factor for all aggression (physical, verbal and destructive)

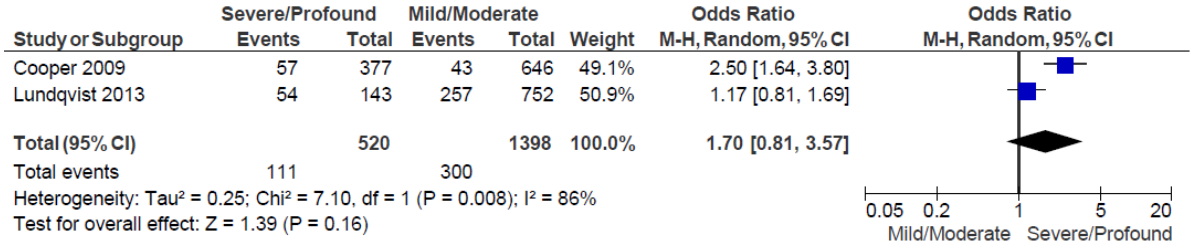


Figure 9: Mild/moderate learning disability versus severe/profound learning disability as a risk factor for physical aggression

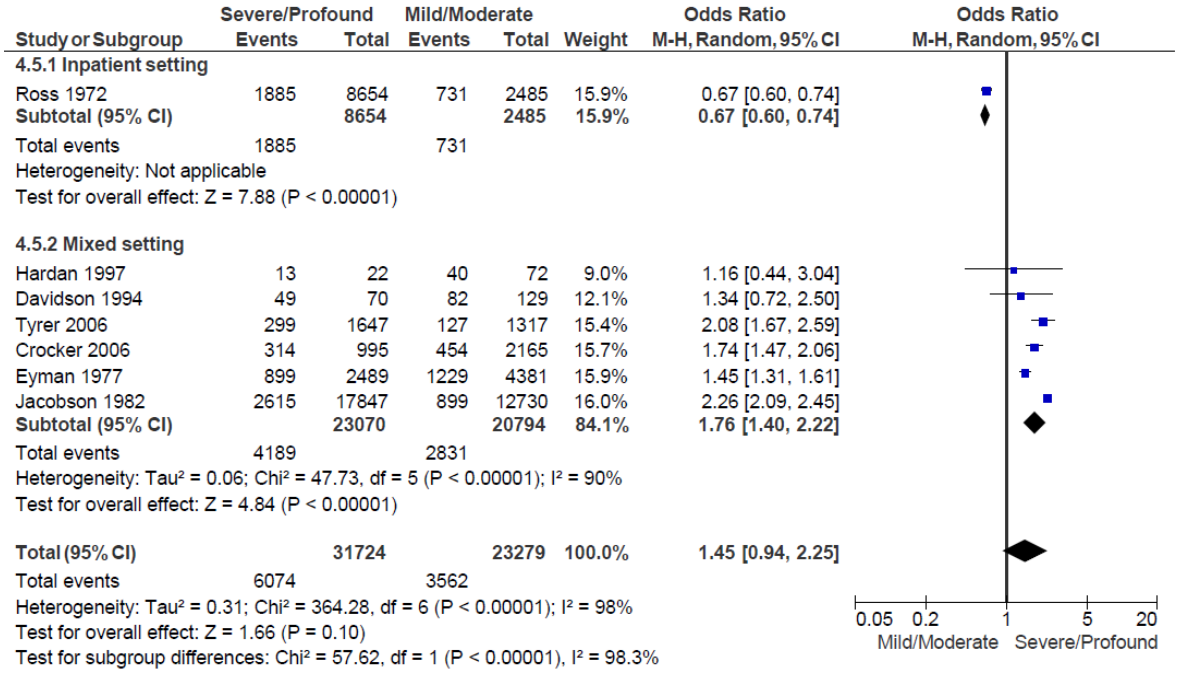


Figure 10: Mild/moderate learning disability versus severe/profound learning disability as a risk factor for verbal aggression

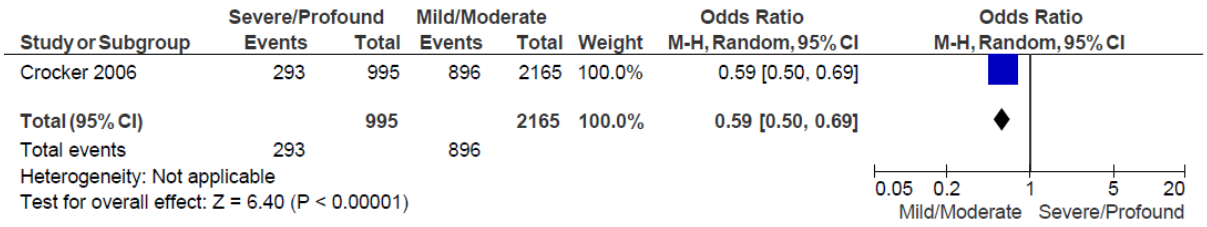


Figure 11: Mild/moderate learning disability versus severe/profound learning disability as a risk factor for all challenging behaviour (physical aggression, self-injury, destructive behaviour and aberrant behaviour [measured by the Aberrant Behaviour Checklist])

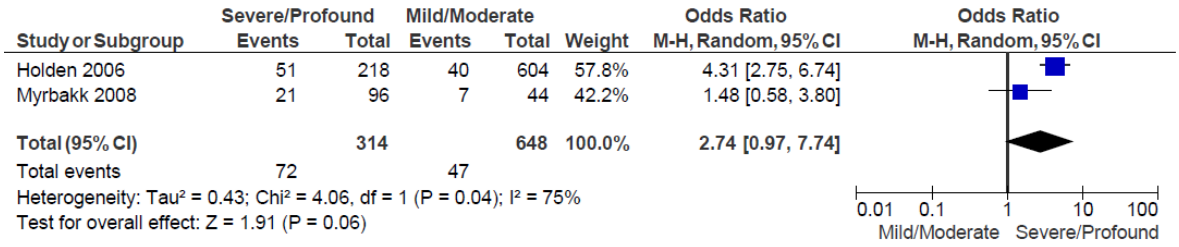


Figure 12: Mild/moderate learning disability versus severe/profound learning disability as a risk factor for destruction of property

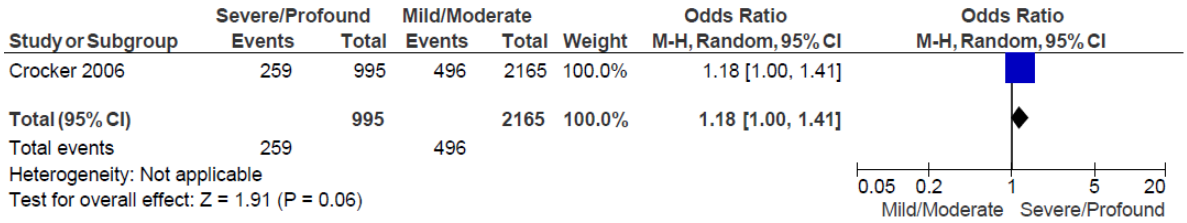


Figure 13: Mild/moderate learning disability versus severe/profound learning disability as a risk factor for inappropriate sexual behaviour

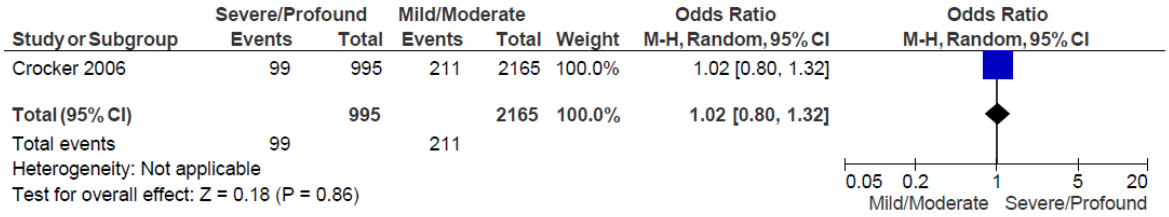


Figure 14: Mild/moderate learning disability versus severe/profound learning disability as a risk factor for self-injury

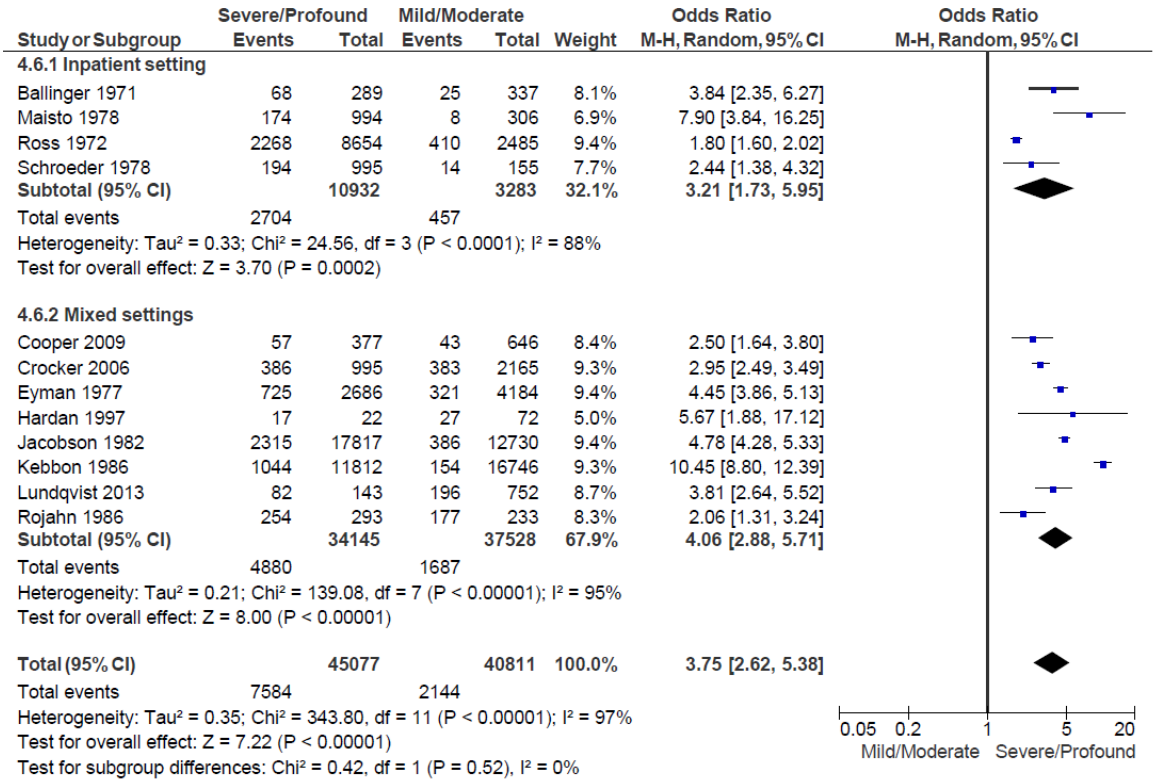
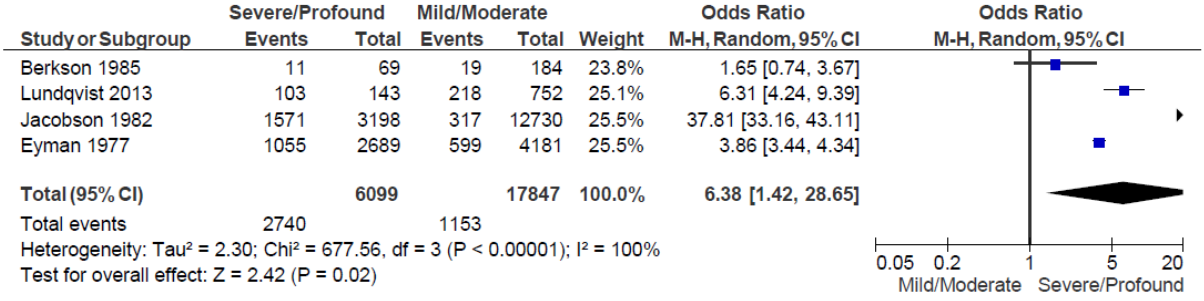


Figure 15: Mild/moderate learning disability versus severe/profound learning disability as a risk factor for stereotypy



A.2.4 Expressive communication

Figure 16: Expressive communication difficulties versus no expressive communication difficulties as a risk factor for all aggression (physical, verbal and destructive)

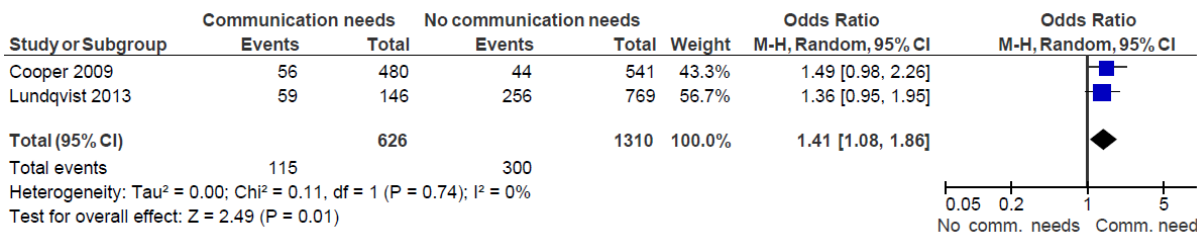


Figure 17: Expressive communication difficulties versus no expressive communication difficulties as a risk factor for physical aggression

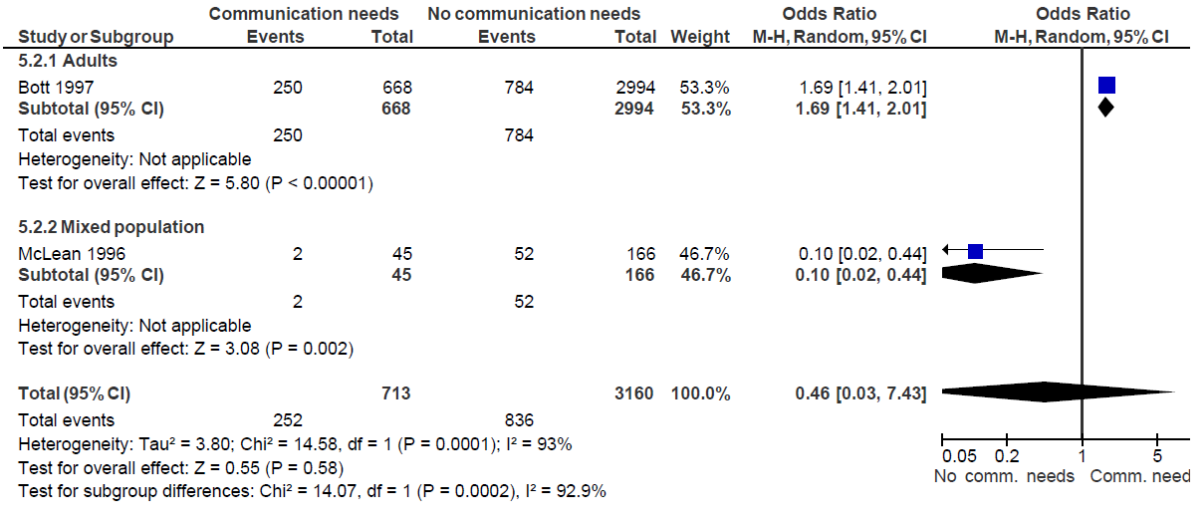


Figure 18: Expressive communication difficulties versus no expressive communication difficulties as a risk factor for self-injury

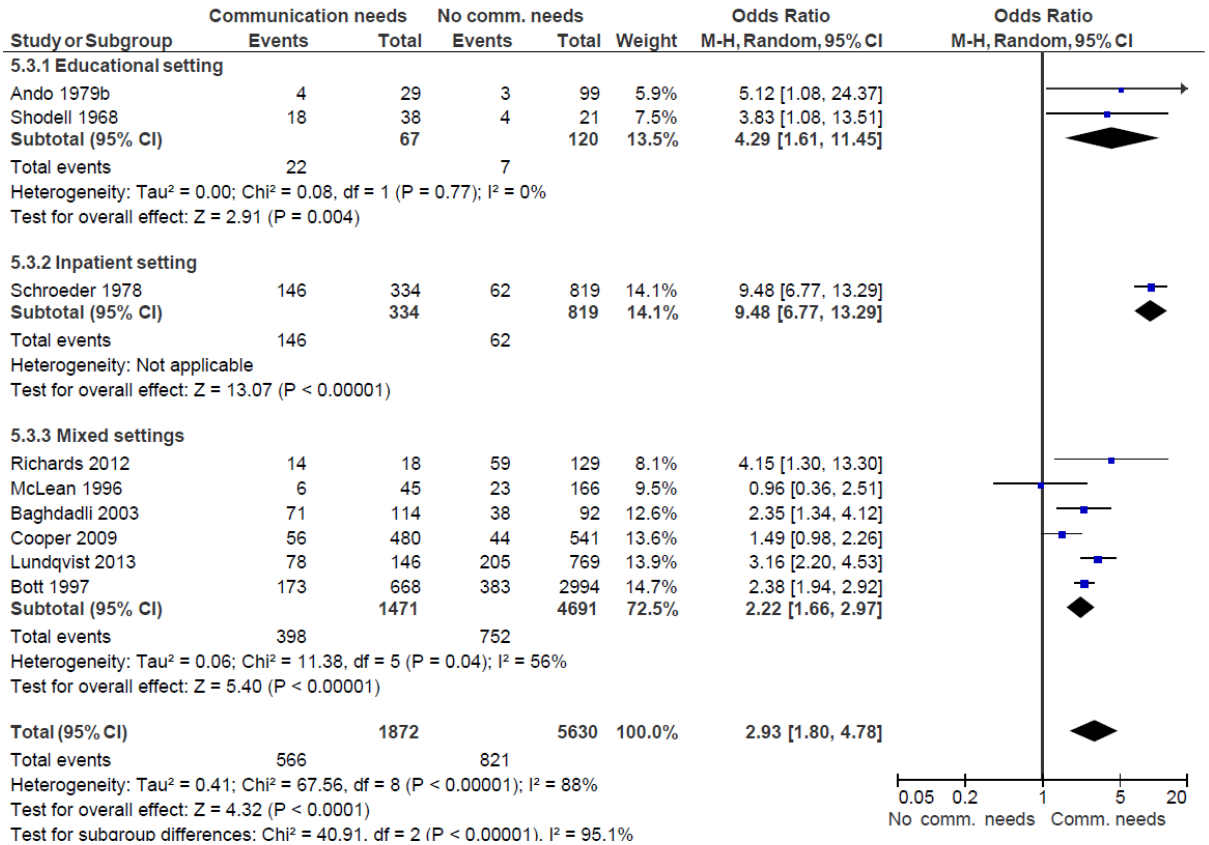
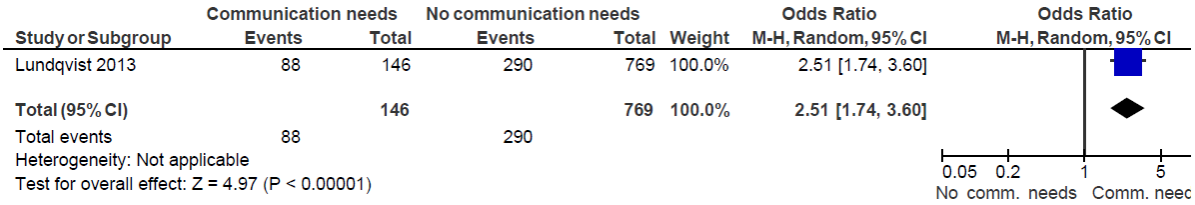
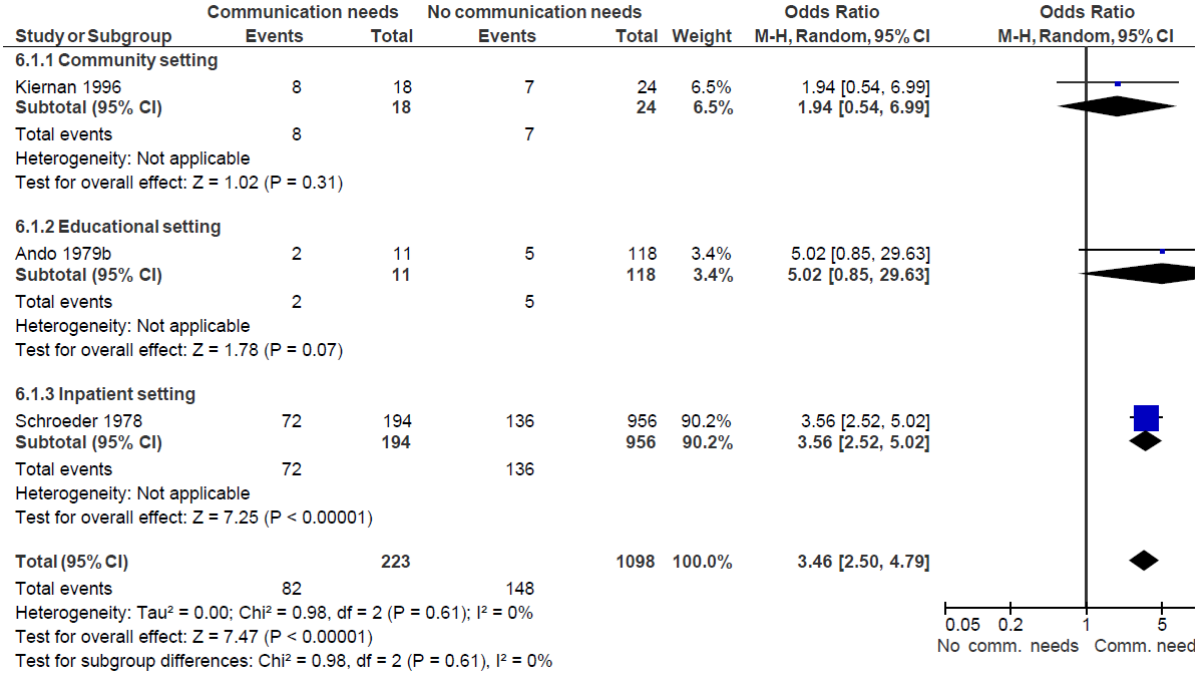


Figure 19: Expressive communication difficulties versus no expressive communication difficulties as a risk factor for stereotypy



A.2.5 Receptive communication

Figure 20: Receptive communication difficulties versus no receptive communication difficulties as a risk factor for self-injury



A.2.6 Gender

Figure 21: Male gender versus female gender as a risk factor for all aggression (physical, verbal and destructive)

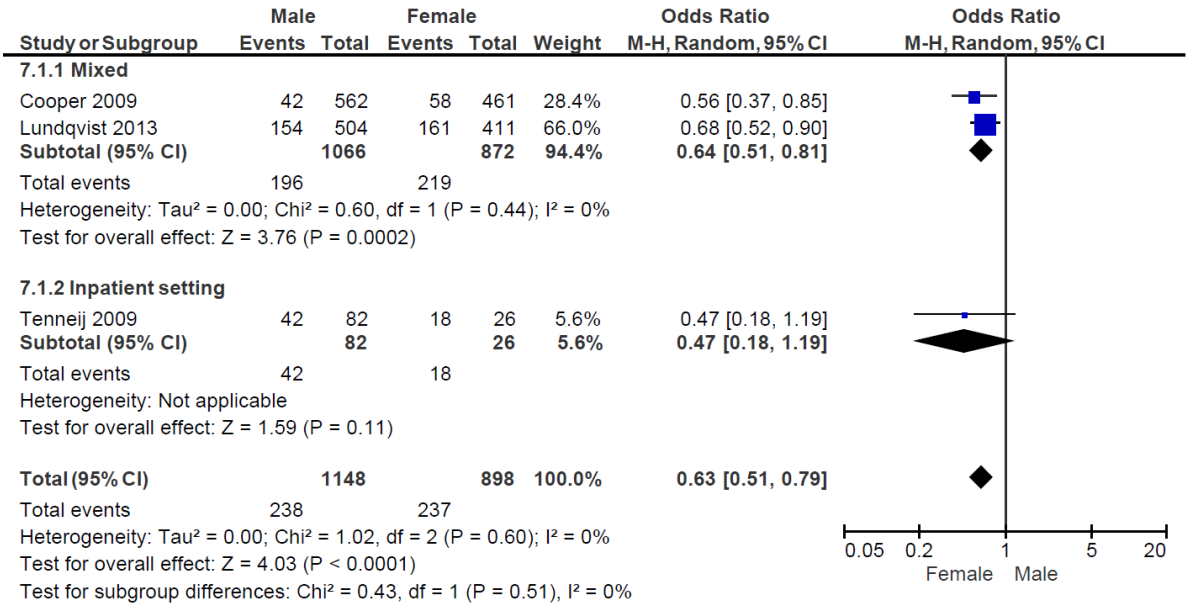


Figure 22: Male gender versus female gender as a risk factor for physical aggression

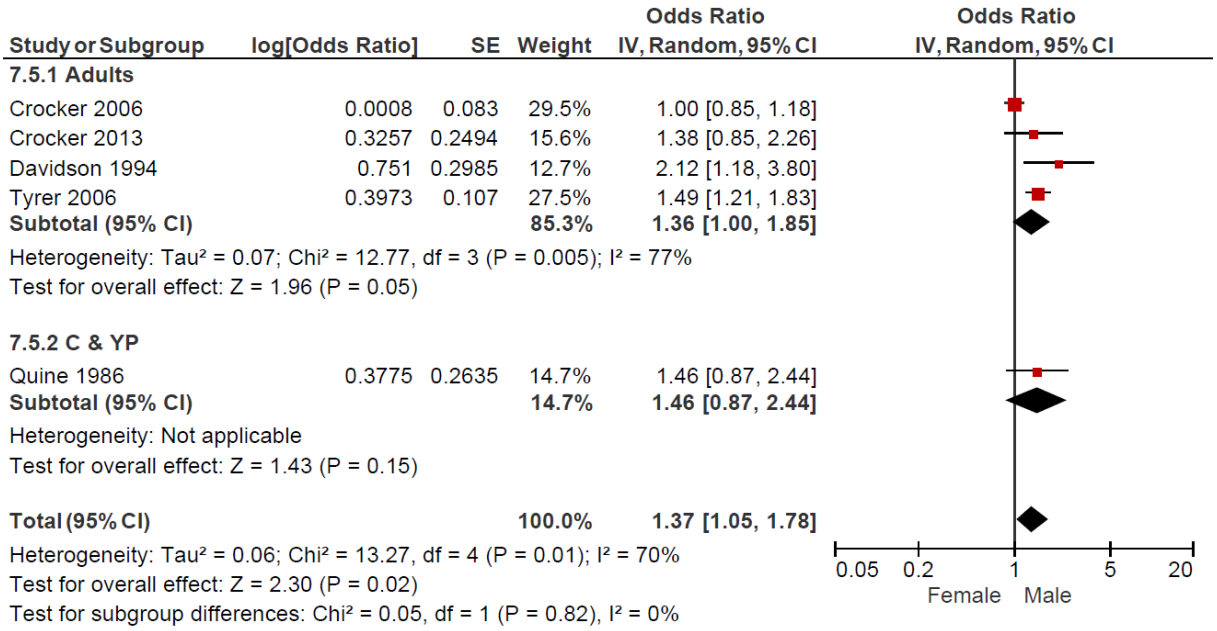


Figure 23: Male gender versus female gender as a risk factor for verbal aggression

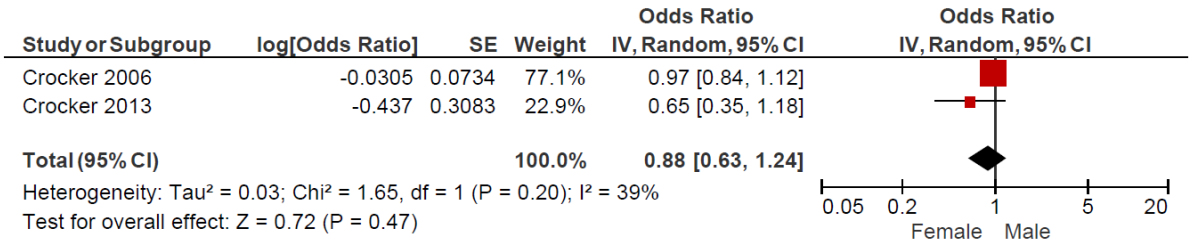


Figure 24: Male gender versus female gender as a risk factor for all challenging behaviour (aggression, self-injury, stereotypy and property destruction)

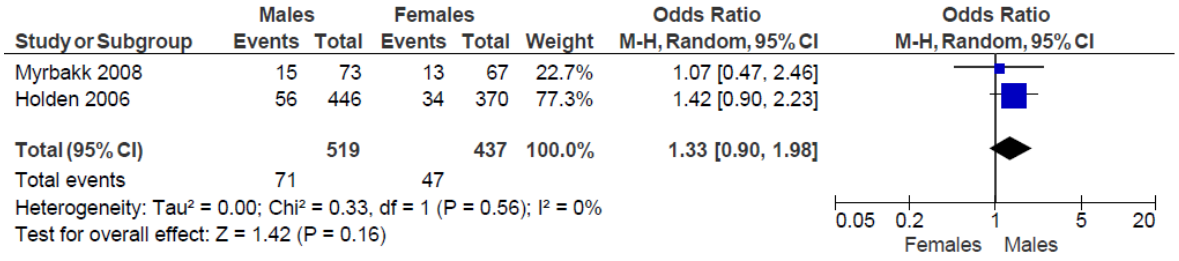


Figure 25: Male gender versus female gender as a risk factor for destruction of property

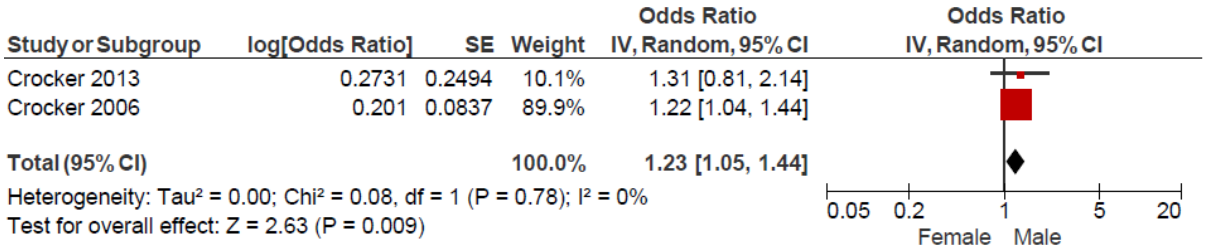


Figure 26: Male gender versus female gender as a risk factor for inappropriate sexual behaviour

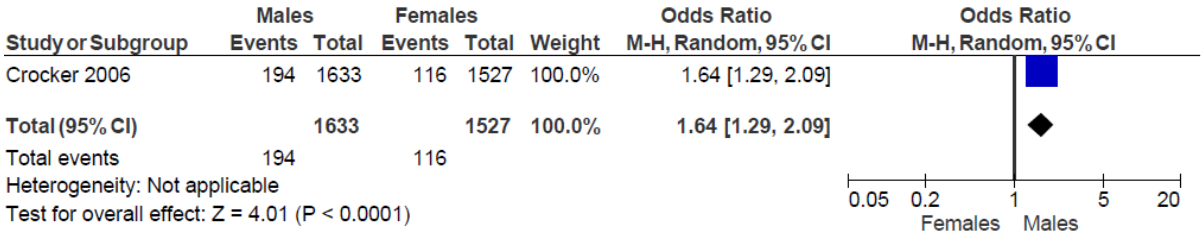


Figure 27: Male gender versus female gender as a risk factor for self-injury (by setting)

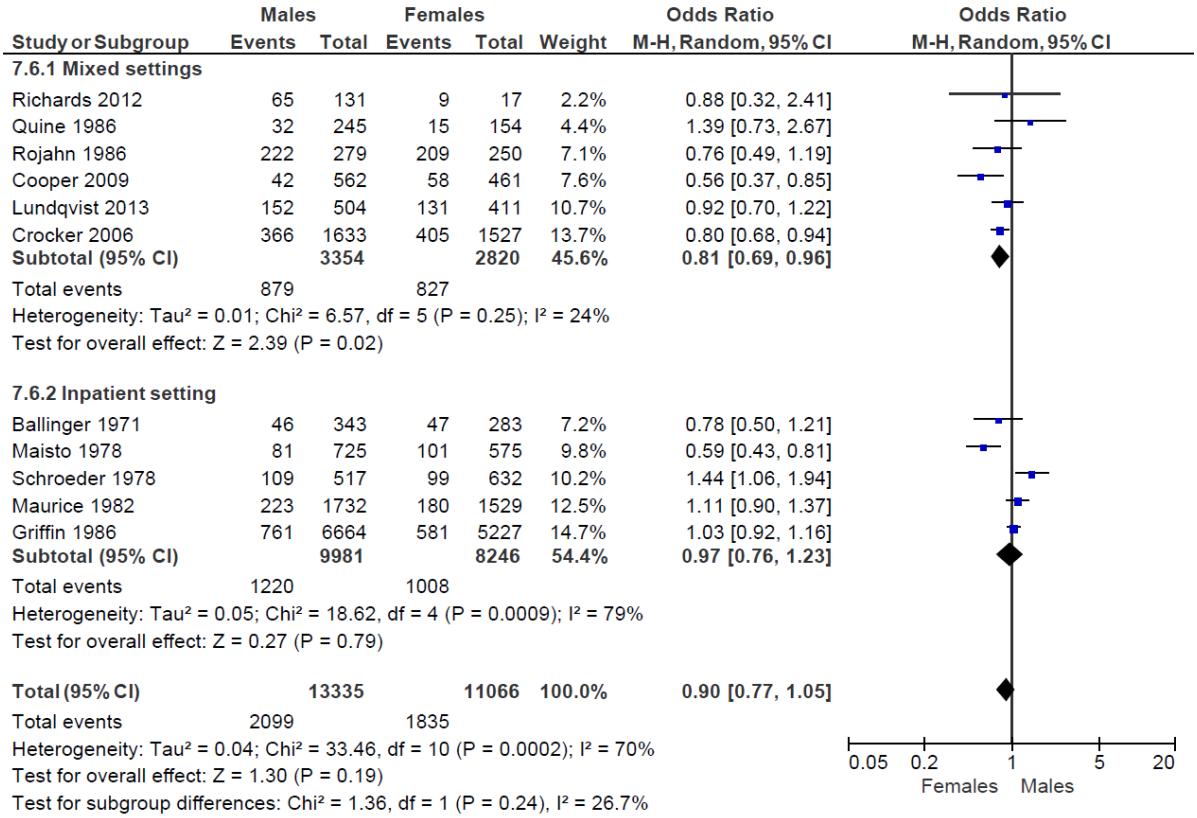


Figure 28: Male gender versus female gender as a risk factor for self-injury (by population)

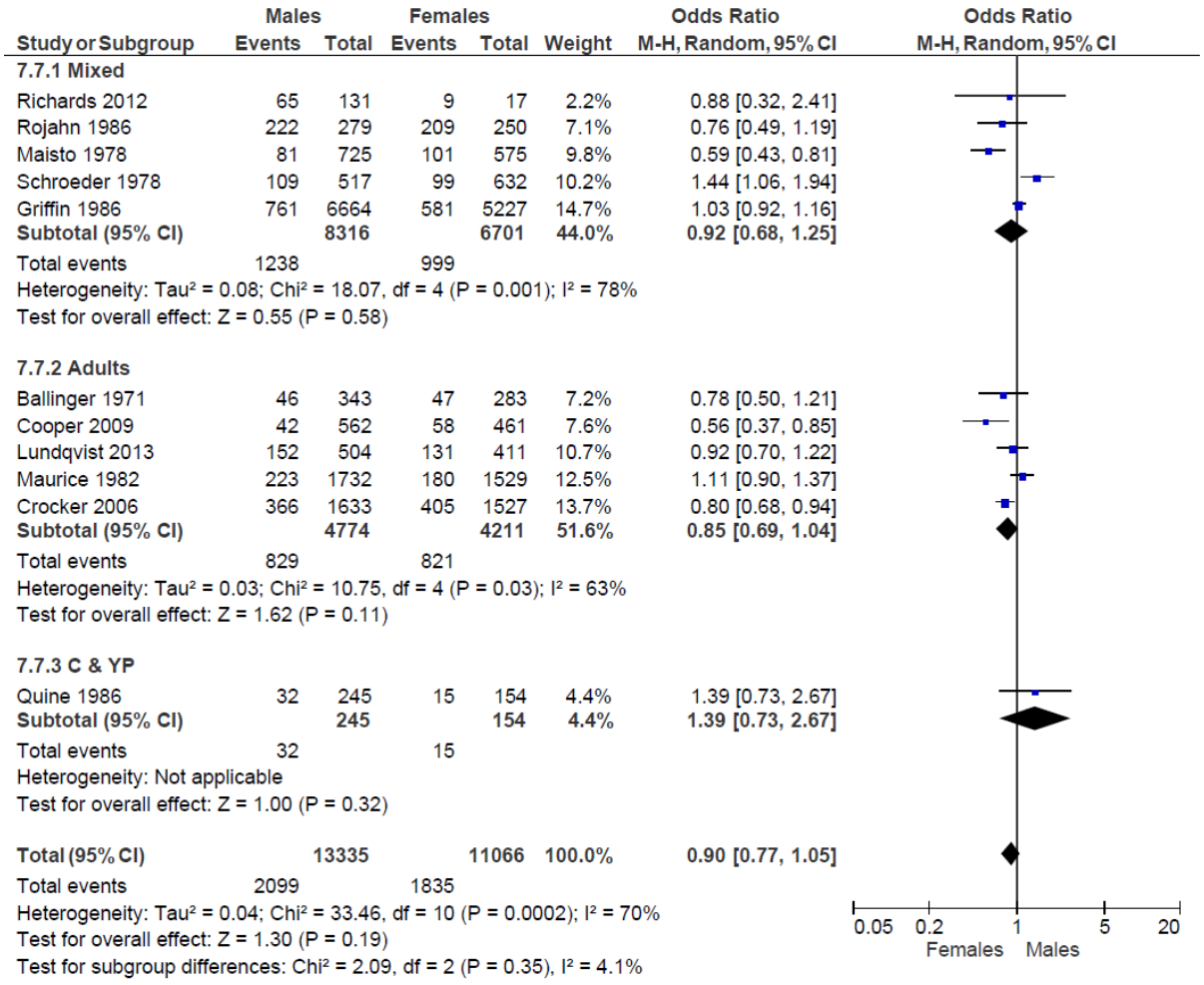
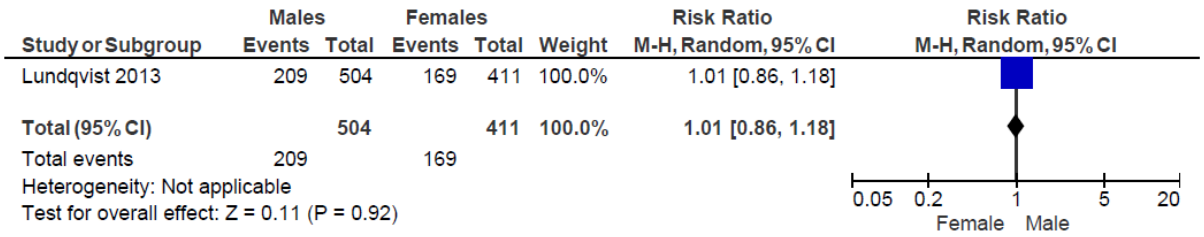


Figure 29: Male gender versus female gender as a risk factor for stereotypy



A.2.7 Mental health needs

Figure 30: Mental health needs versus no mental health needs as a risk factor for all aggression (physical, verbal and destructive)

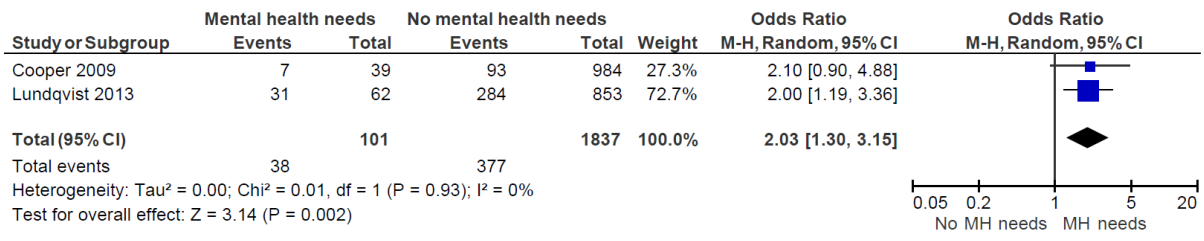


Figure 31: Mental health needs versus no mental health needs as a risk factor for physical aggression

Study or Subgroup	log[Odds Ratio]	SE	No MH needs Total	Control Total	Weight	Odds Ratio IV, Fixed, 95% CI
Crocker 2013	0.0284	0.0193	16	280	85.5%	1.03 [0.99, 1.07]
Jacobson 1982	0.7134	0.0469	3555	27023	14.5%	2.04 [1.86, 2.24]
Total (95% CI)			**3571**	**27303**	**100.0%**	**1.14 [1.10, 1.18]**

Heterogeneity: Chi² = 182.43, df = 1 (P < 0.00001); I² = 99%
Test for overall effect: Z = 7.15 (P < 0.00001)

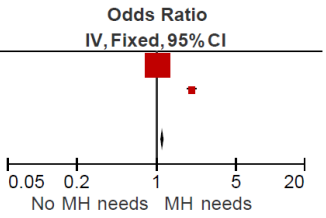


Figure 32: Mental health needs versus no mental health needs as a risk factor for verbal aggression

Study or Subgroup	log[Odds Ratio]	SE	MH needs Total	No MH needs Total	Weight	Odds Ratio IV, Fixed, 95% CI
Crocker 2013	0.5188	0.5426	16	280	1.2%	1.68 [0.58, 4.87]
Jacobson 1982	0.7981	0.0606	3555	27023	98.8%	2.22 [1.97, 2.50]
Total (95% CI)			**3571**	**27303**	**100.0%**	**2.21 [1.97, 2.49]**

Heterogeneity: Chi² = 0.26, df = 1 (P = 0.61); I² = 0%
Test for overall effect: Z = 13.19 (P < 0.00001)

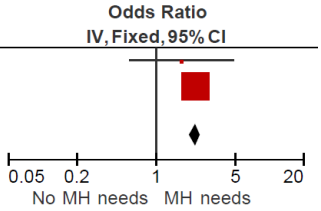


Figure 33: Mental health needs versus no mental health needs as a risk factor for destruction of property

Study or Subgroup	log[Odds Ratio]	SE	Weight	Odds Ratio IV, Random, 95% CI
Jacobson 1982	0.5927	0.0711	49.2%	1.81 [1.57, 2.08]
Crocker 2013	0.0488	0.0198	50.8%	1.05 [1.01, 1.09]
Total (95% CI)			**100.0%**	**1.37 [0.81, 2.34]**

Heterogeneity: Tau² = 0.15; Chi² = 54.31, df = 1 (P < 0.00001); I² = 98%
Test for overall effect: Z = 1.16 (P = 0.24)

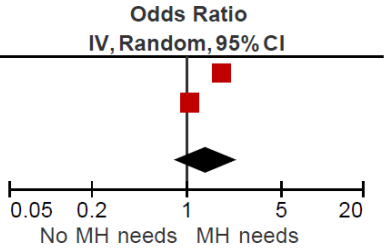


Figure 34: Mental health needs versus no mental health needs as a risk factor for self-injury

Study or Subgroup	Mental health needs Events	Total	No mental health needs Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
Cooper 2009	3	39	47	984	0.8%	1.66 [0.49, 5.59]
Lundqvist 2013	27	62	256	853	4.2%	1.80 [1.07, 3.03]
Jacobson 1982	420	3555	2387	27023	95.0%	1.38 [1.24, 1.54]
Total (95% CI)		**3656**		**28860**	**100.0%**	**1.40 [1.26, 1.56]**
Total events	450		2690			

Heterogeneity: Tau² = 0.00; Chi² = 1.01, df = 2 (P = 0.60); I² = 0%
Test for overall effect: Z = 6.14 (P < 0.00001)

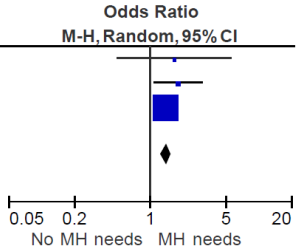
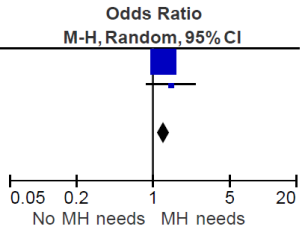


Figure 35: Mental health needs versus no mental health needs as a risk factor for stereotypy

Study or Subgroup	Mental health needs Events	Total	No mental health needs Events	Total	Weight	Odds Ratio M-H, Random, 95% CI
Jacobson 1982	262	3555	1623	27023	93.6%	1.25 [1.09, 1.43]
Lundqvist 2013	31	62	347	853	6.4%	1.46 [0.87, 2.44]
Total (95% CI)		**3617**		**27876**	**100.0%**	**1.26 [1.10, 1.43]**
Total events	293		1970			

Heterogeneity: Tau² = 0.00; Chi² = 0.34, df = 1 (P = 0.56); I² = 0%
Test for overall effect: Z = 3.43 (P = 0.0006)



A.2.8 Mobility impairment

Figure 36: Mobility impairment versus no mobility impairment as a risk factor for all aggression (physical, verbal and destructive)

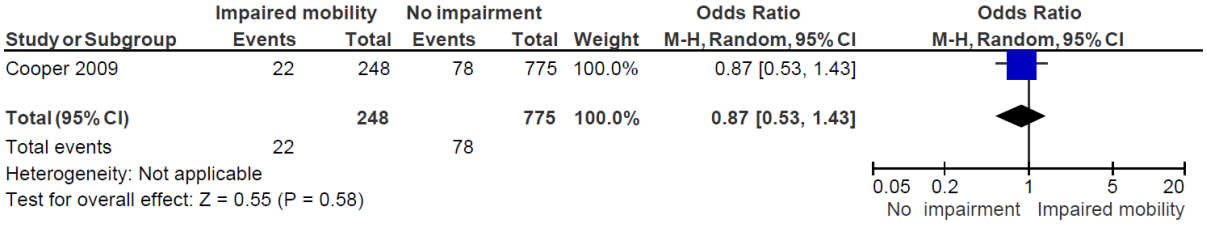
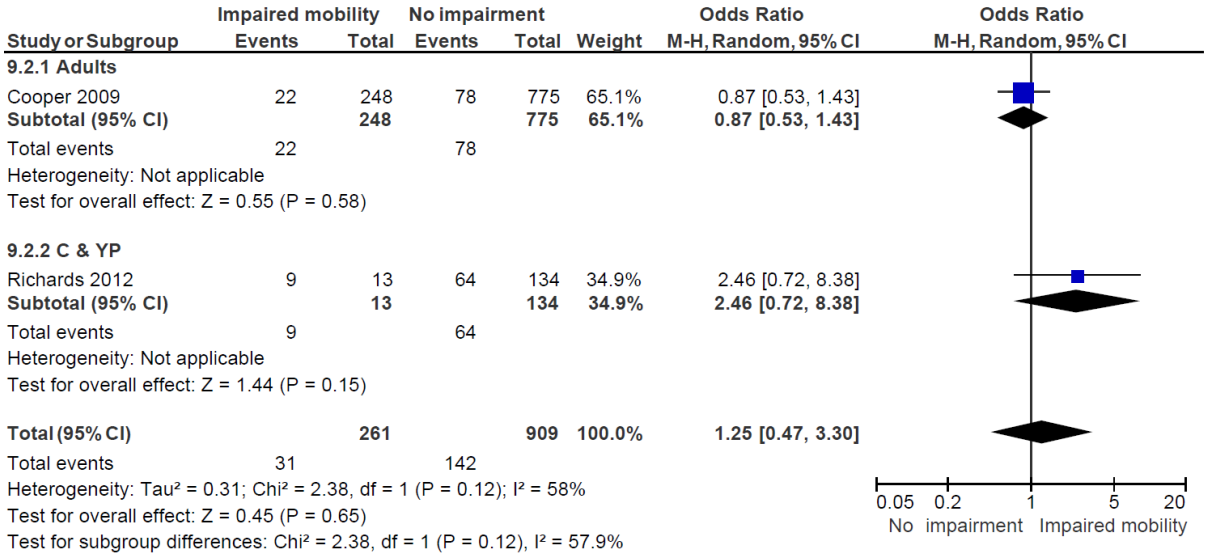


Figure 37: Mobility impairment versus no mobility impairment as a risk factor for self-injury



A.2.9 Visual impairment

Figure 38: Visual impairment versus no visual impairment as a risk factor for all aggression (physical, verbal and destructive)

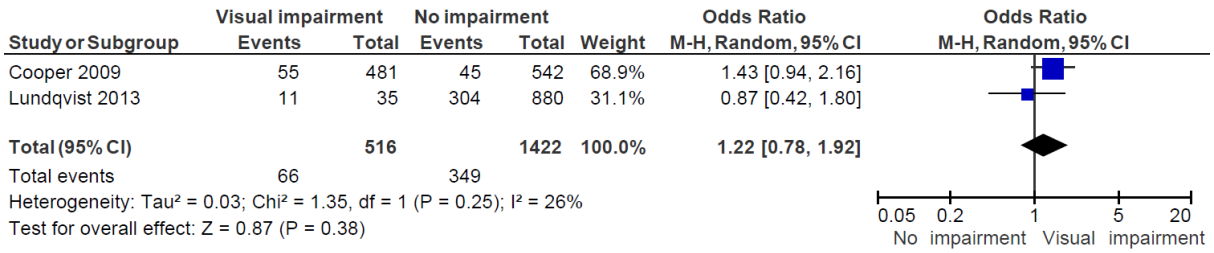


Figure 39: Visual impairment versus no visual impairment as a risk factor for self-injury

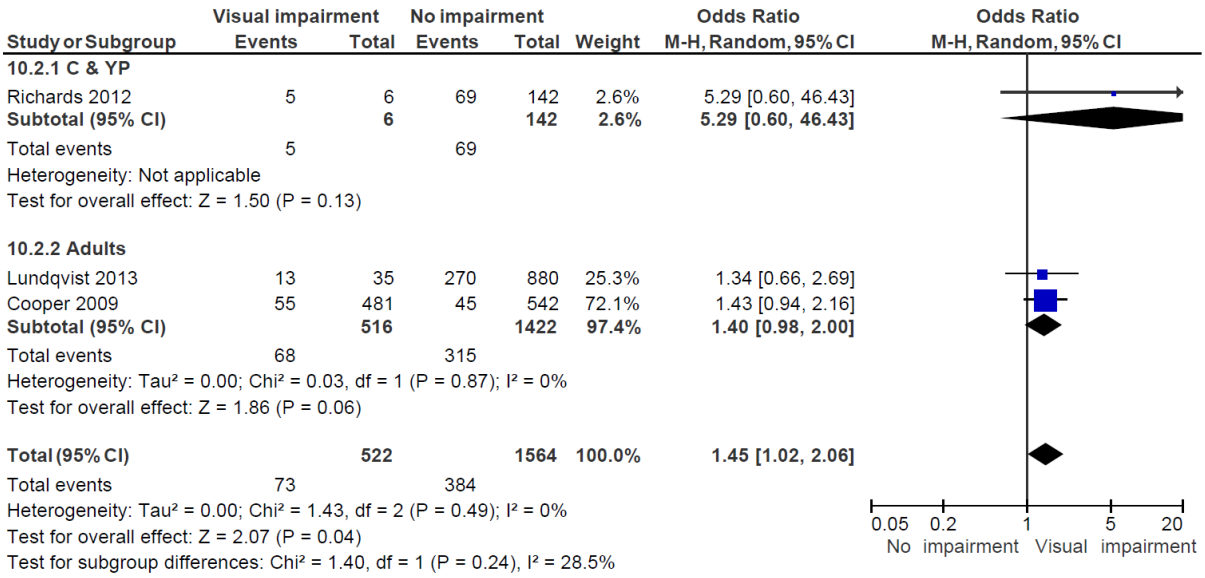
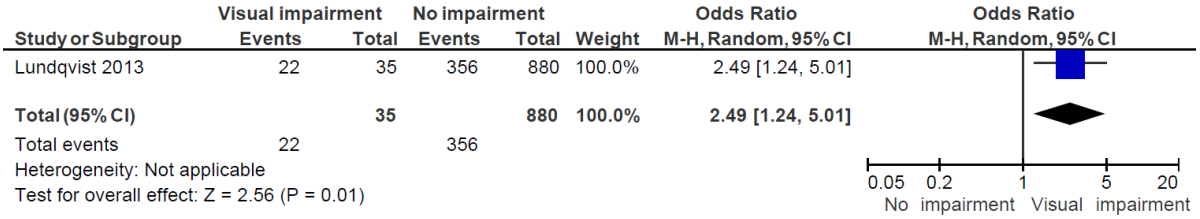


Figure 40: Visual impairment versus no visual impairment as a risk factor for stereotypy



A.3 Measures to assess mental health needs among individuals with learning disabilities

A.3.1 Psychiatric Assessment Schedule for Adults with a Developmental Disability Checklist (PAS-ADD Checklist)

Figure 41: Sensitivity and specificity of the PAS-ADD Checklist for the detection of mental health needs among adults with learning disabilities

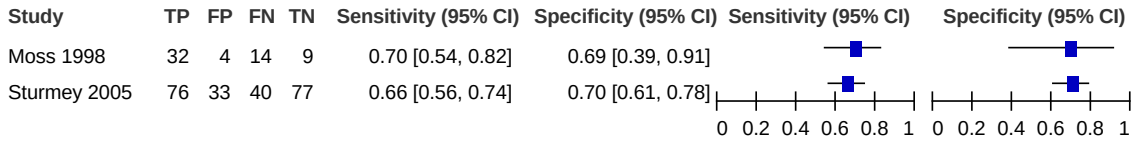
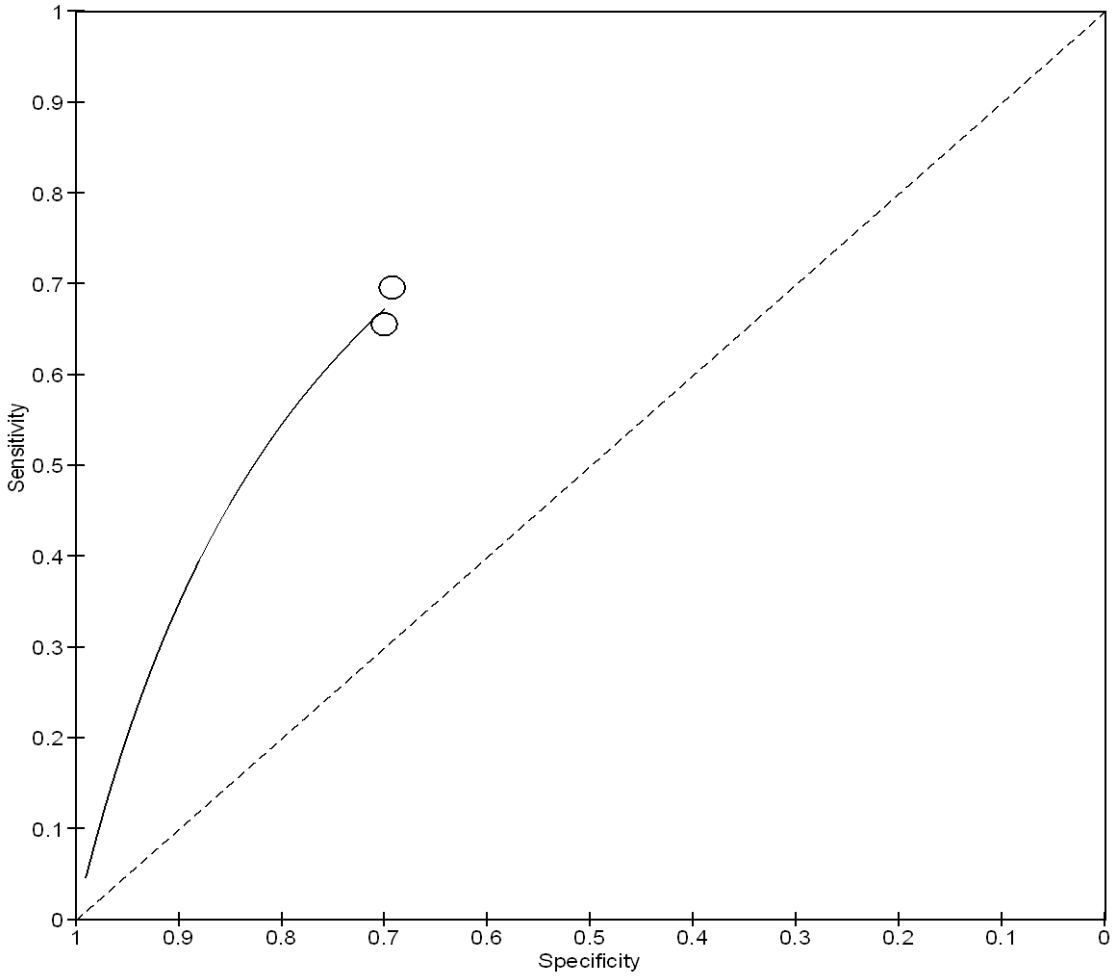


Figure 42: ROC curve for PAS-ADD Checklist (ICD-10 and psychiatric diagnosis [unspecified] reference standard)



A.4 Interventions aimed at the prevention of behaviour that challenges

A.4.1 Educational intervention versus attention control

Figure 43: Targeted behaviour that challenges (severity) – post-treatment

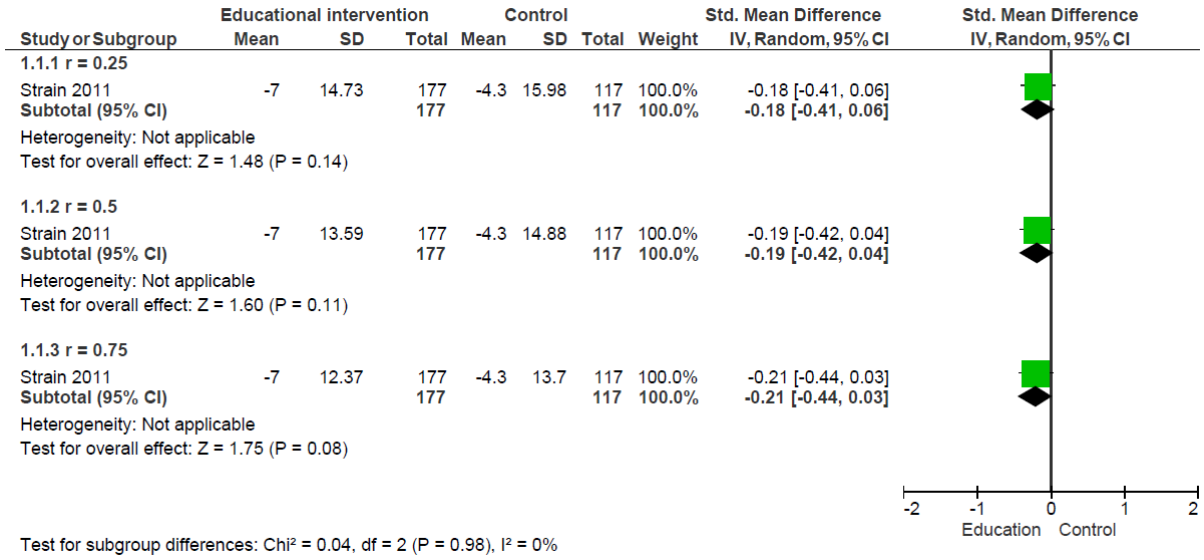


Figure 44: Adaptive functioning (social) – post-treatment

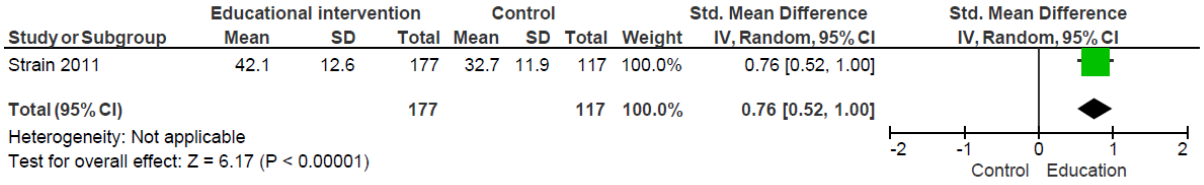
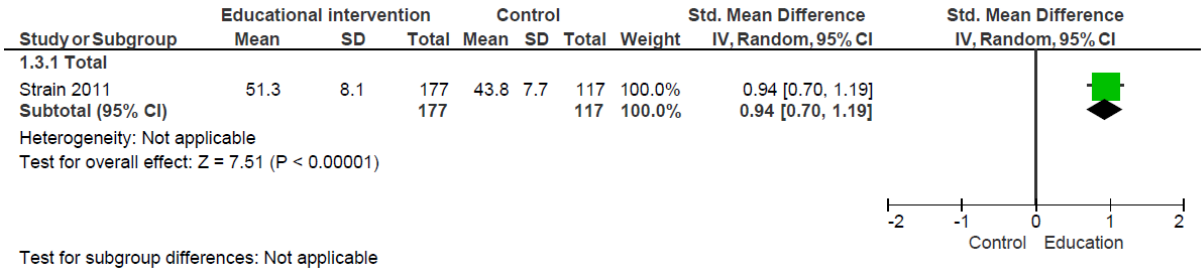


Figure 45: Adaptive functioning (communication) – post-treatment



A.4.2 Home-based EBI versus centre-based EBI

Figure 46: Targeted behaviour that challenges (severity) – post-treatment

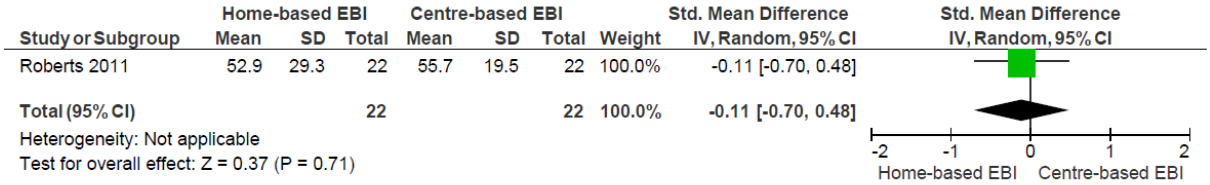


Figure 47: Adaptive functioning (social) – post-treatment

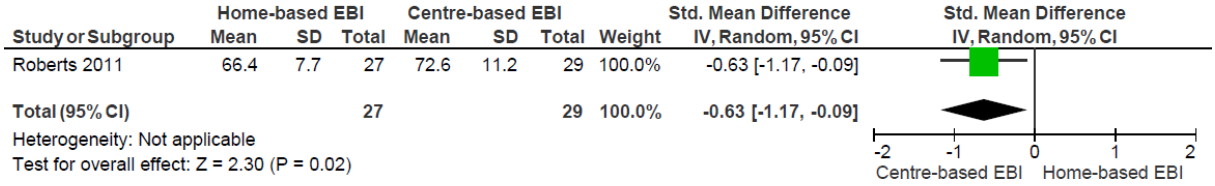
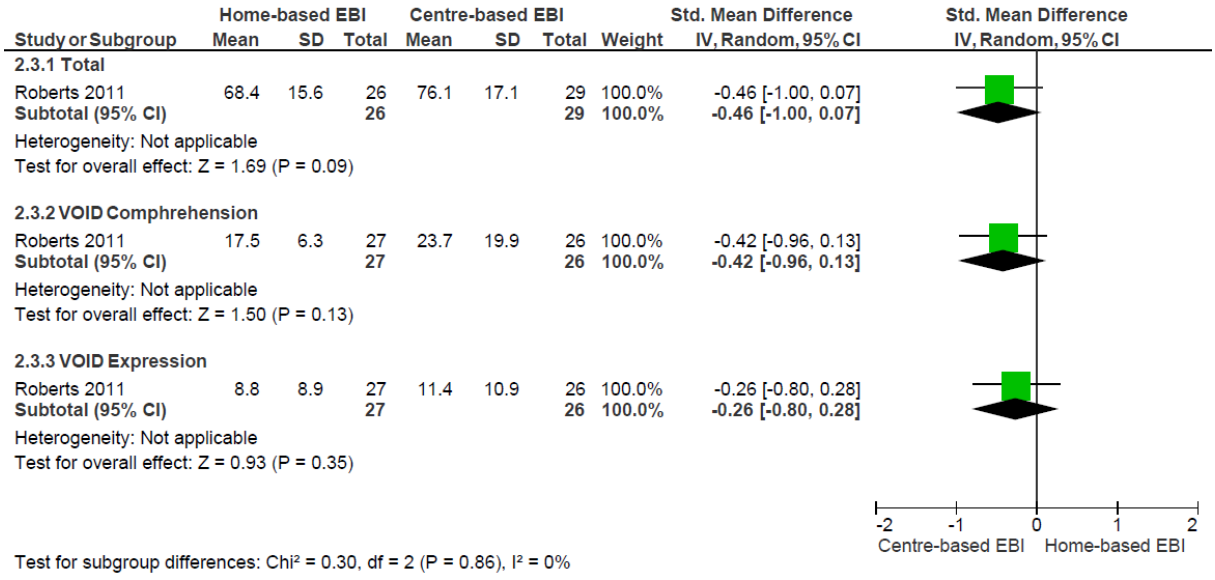


Figure 48: Adaptive functioning (communication) – post-treatment



A.4.3 EIBI versus parent training

Figure 49: Targeted behaviour that challenges (severity; parent report) – post-treatment

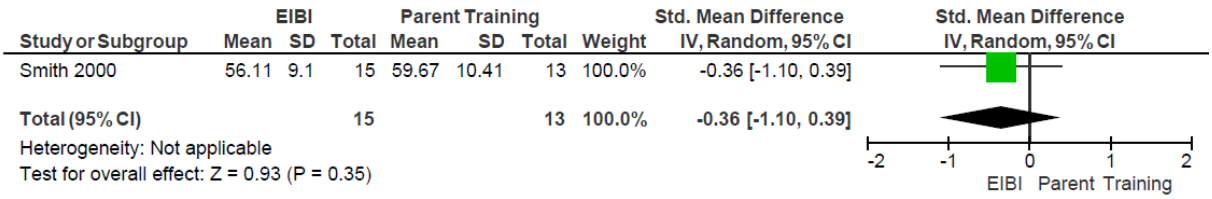


Figure 50: Targeted behaviour that challenges (severity; teacher report) – post-treatment

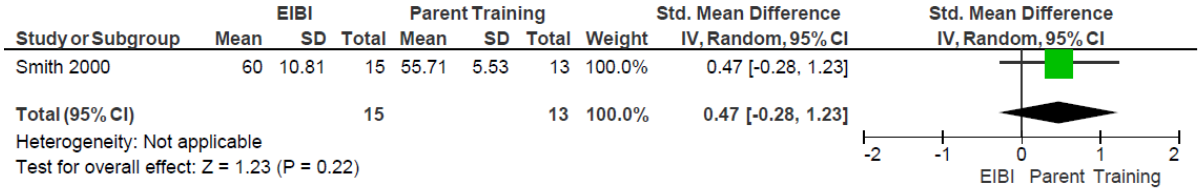


Figure 51: Adaptive functioning (communication) – post-treatment

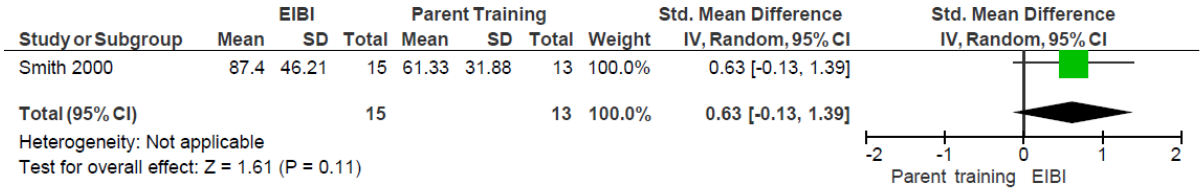
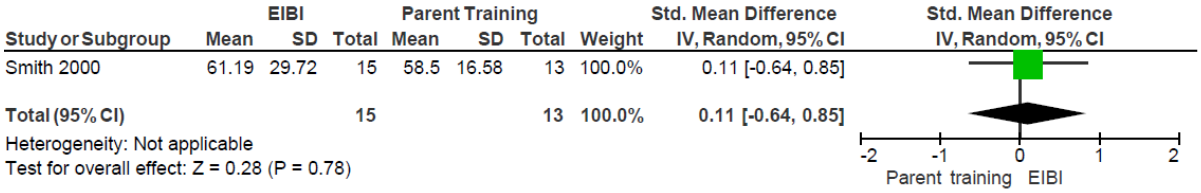
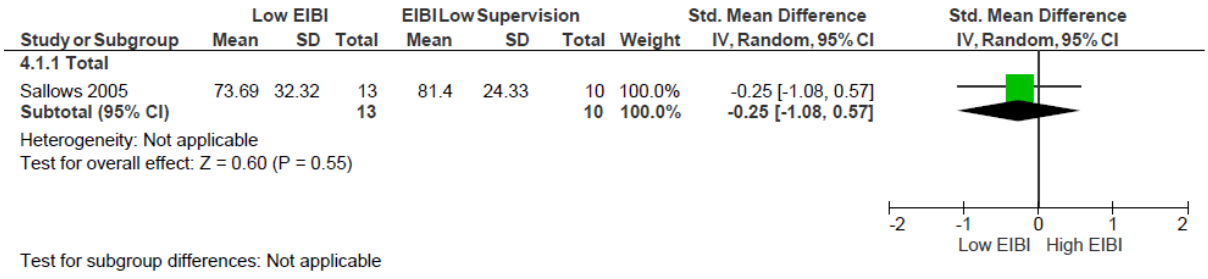


Figure 52: Adaptive functioning (global) – post treatment



1.1.1 High supervision EIBI (clinic-directed) versus low supervision EIBI (parent-directed)

Figure 53: Adaptive functioning (communication) – post-treatment



1.1.2 Parent training versus any control

Figure 54: Targeted behaviour that challenges (severity) – post-treatment

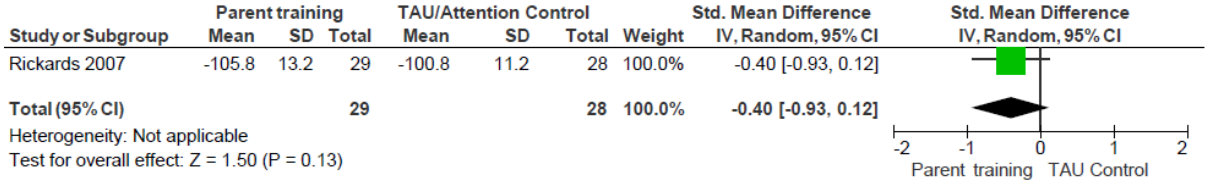


Figure 55: Targeted behaviour that challenges (severity) – follow-up

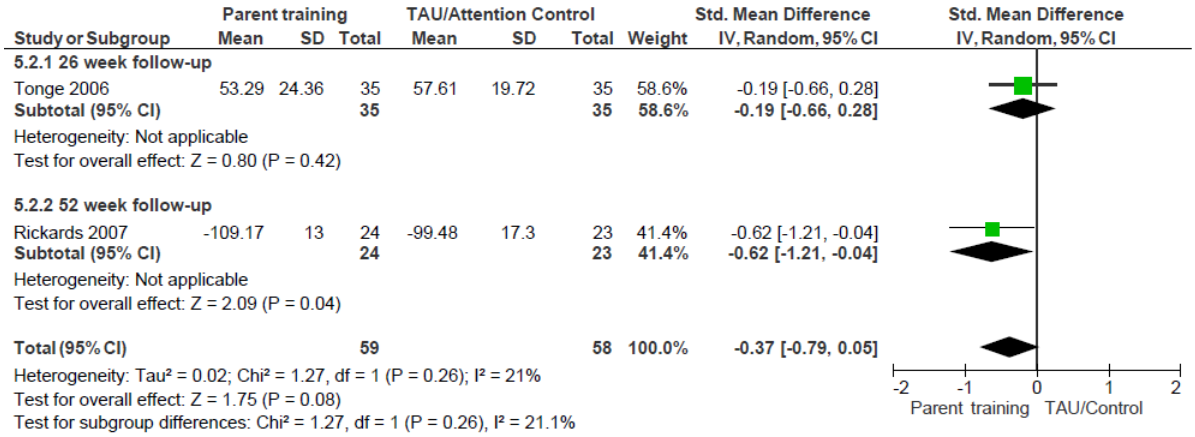


Figure 56: Adaptive functioning (global) – post-treatment

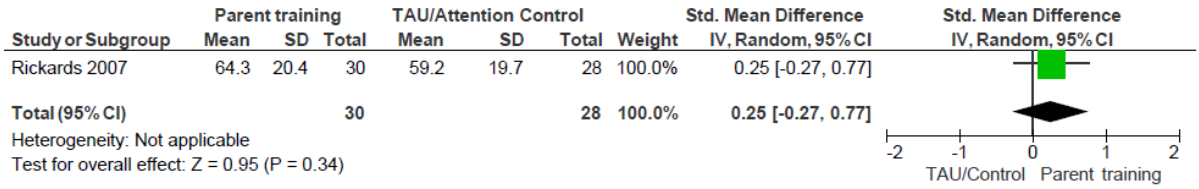


Figure 57: Adaptive functioning (global) – follow-up

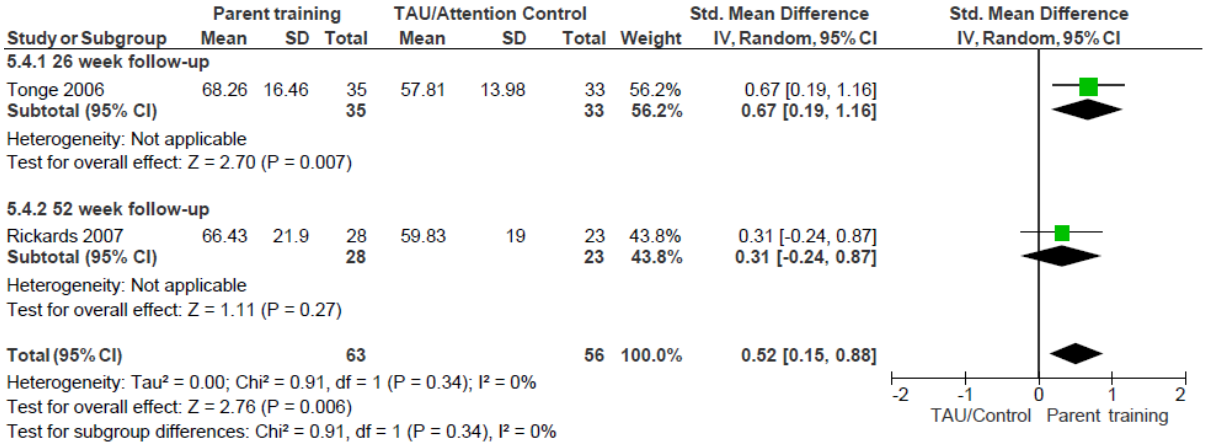
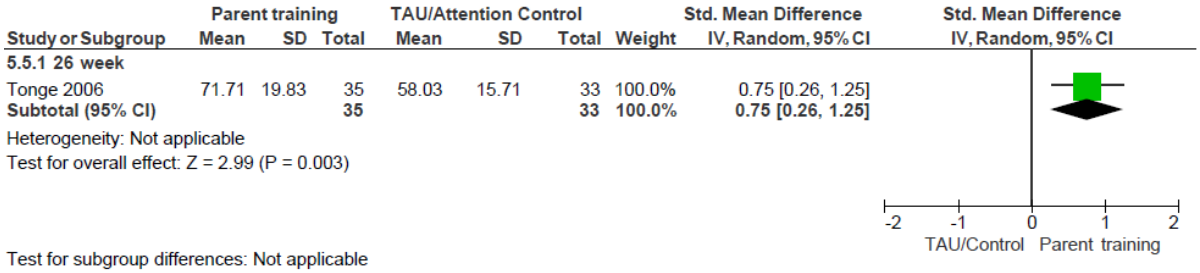


Figure 58: Adaptive functioning (communication) – follow-up



A.5 Interventions aimed at reducing health risks and increasing understanding of physical illness or mental health problems in relation to the prevention or management of the behaviour that challenges

A.5.1 Hand-held health records (HHHR) versus treatment as usual

Figure 59: Health promotion

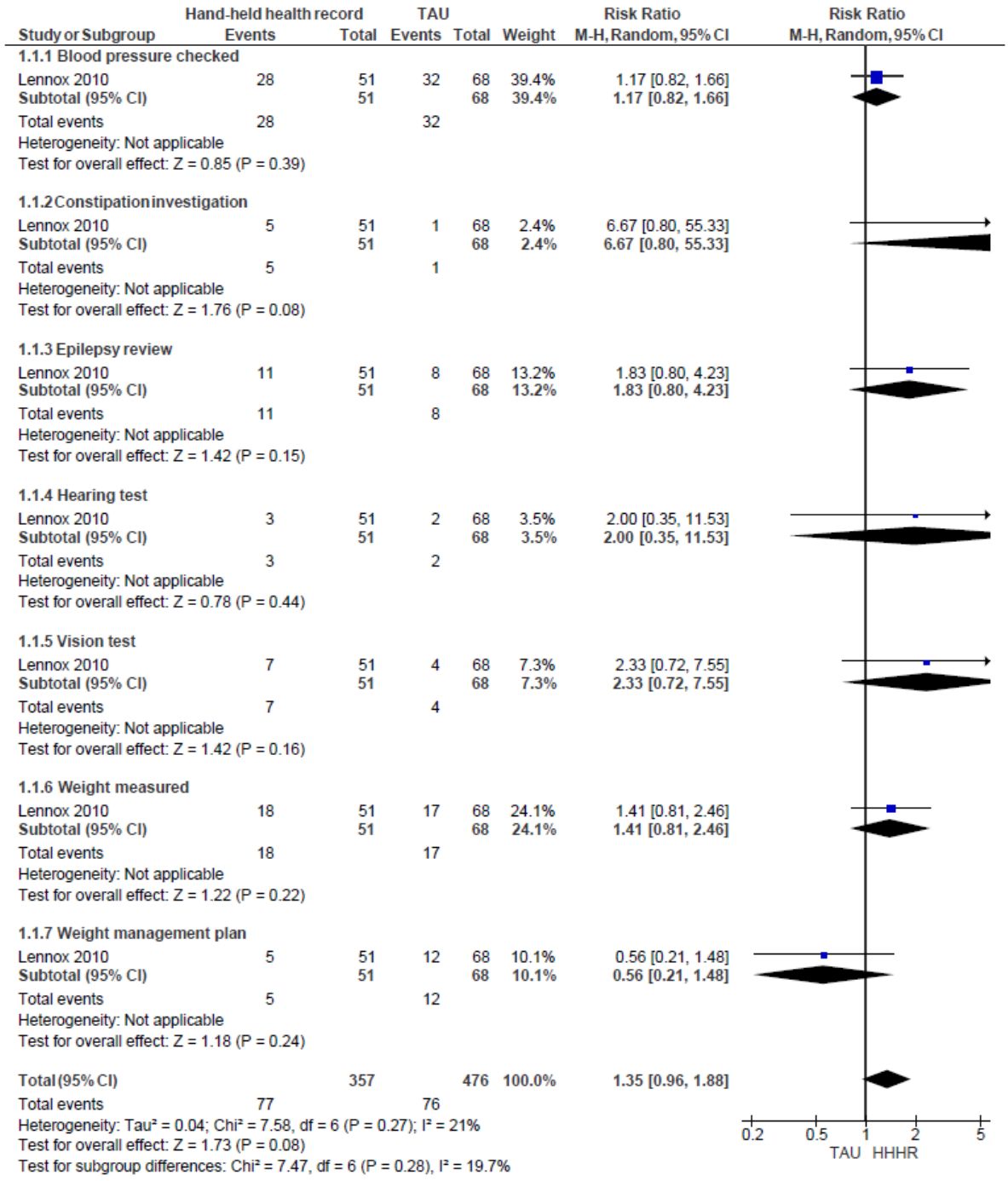


Figure 60: Carer knowledge of health problems

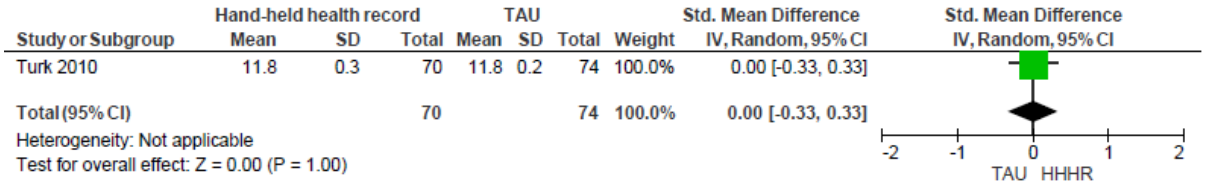


Figure 61: Service user knowledge of health problems

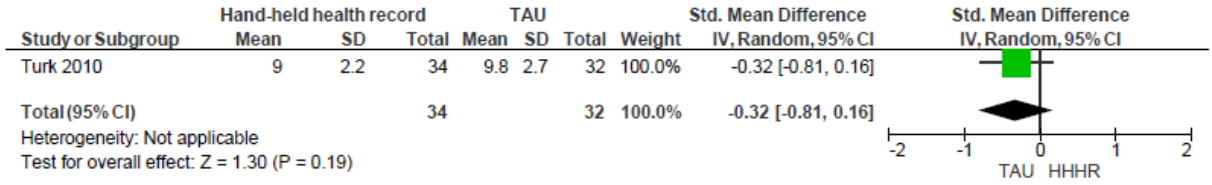


Figure 62: Carer satisfaction

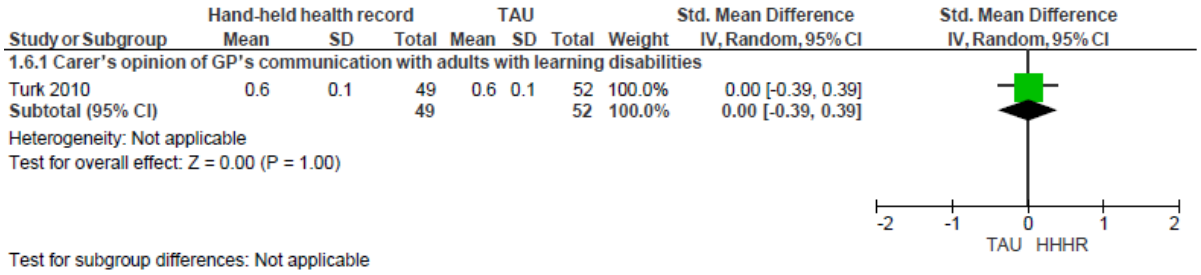


Figure 63: Service user satisfaction

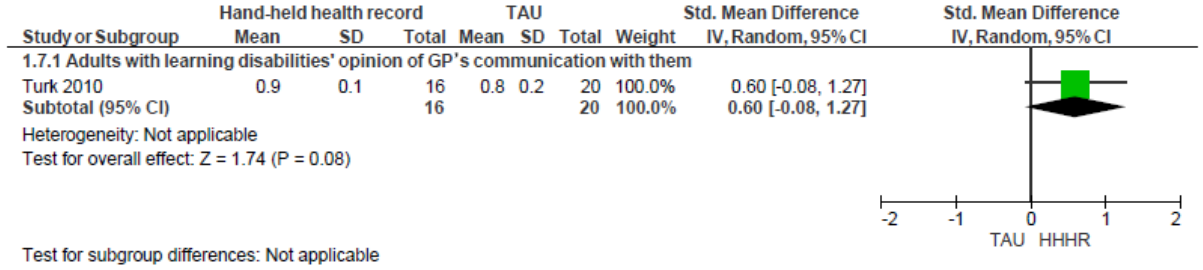
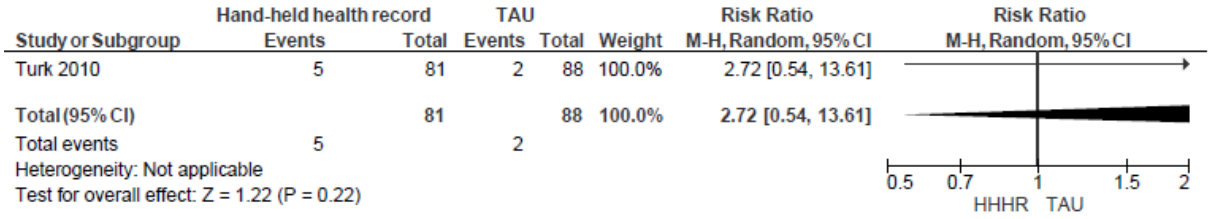


Figure 64: Premature death



A.5.2 Annual health check versus treatment as usual

Figure 65: Health promotion

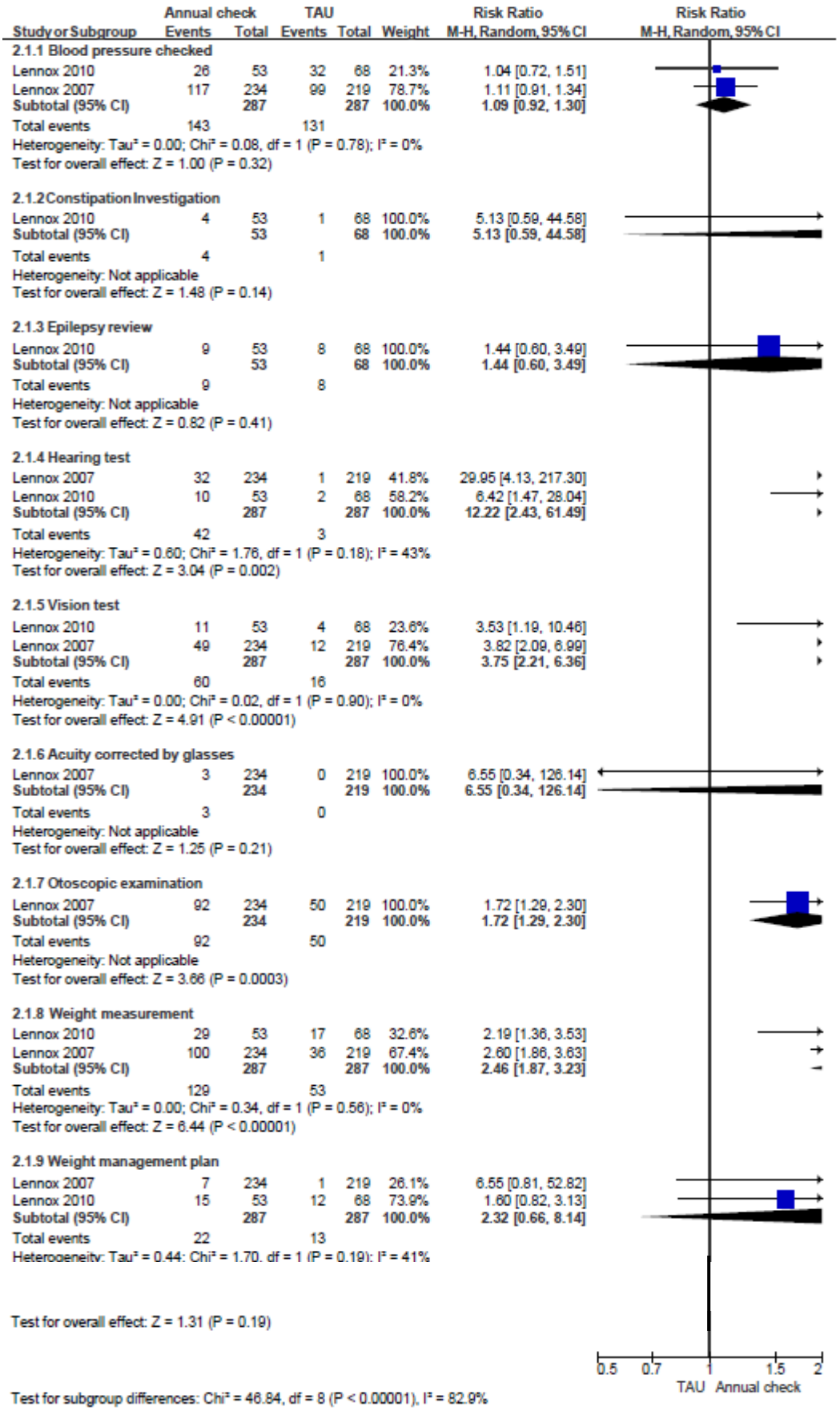


Figure 66: Identification of health problems

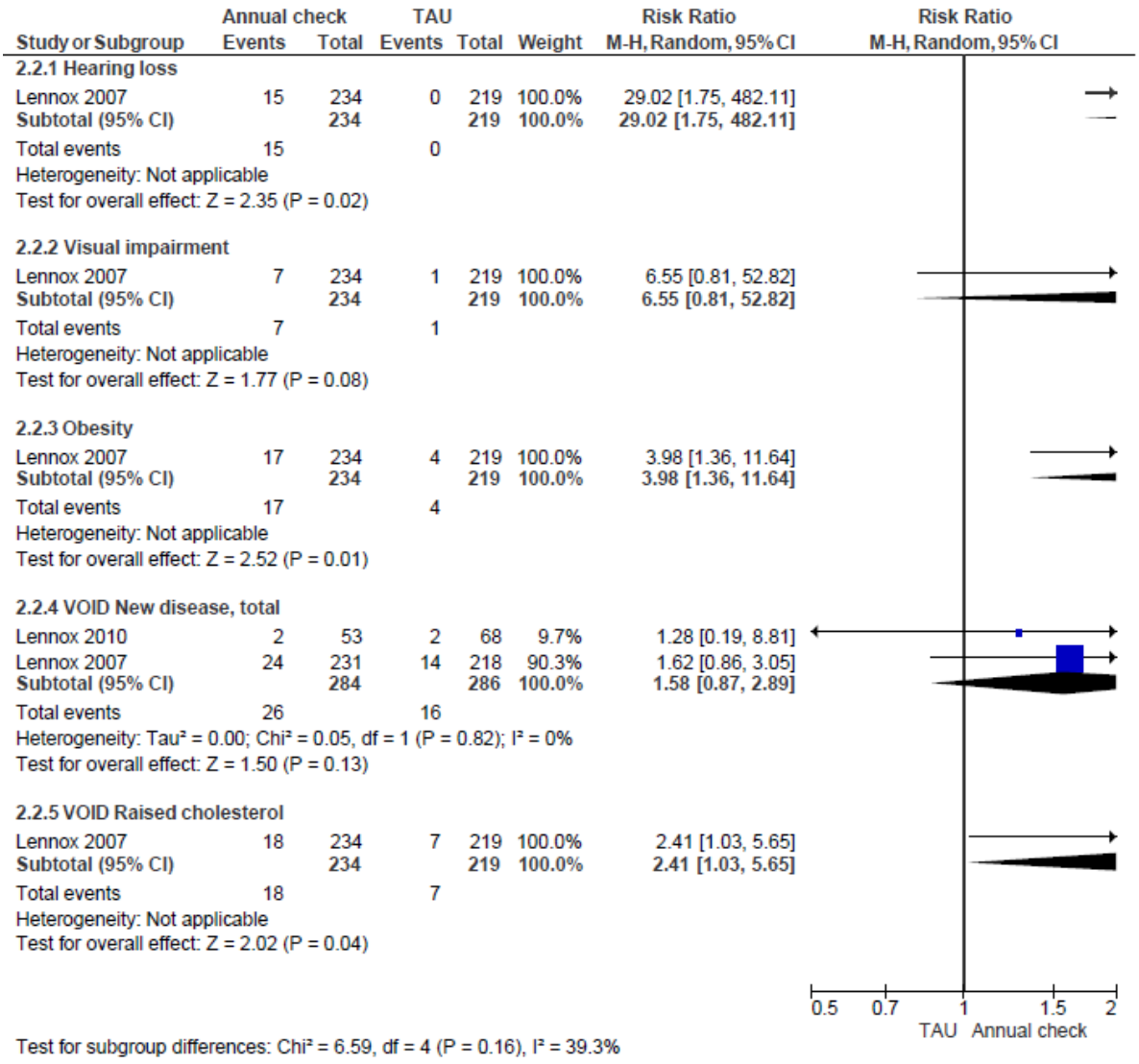
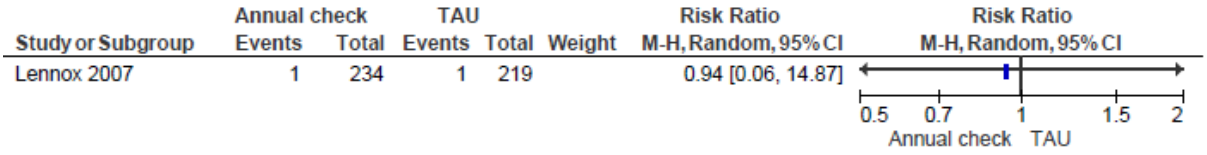
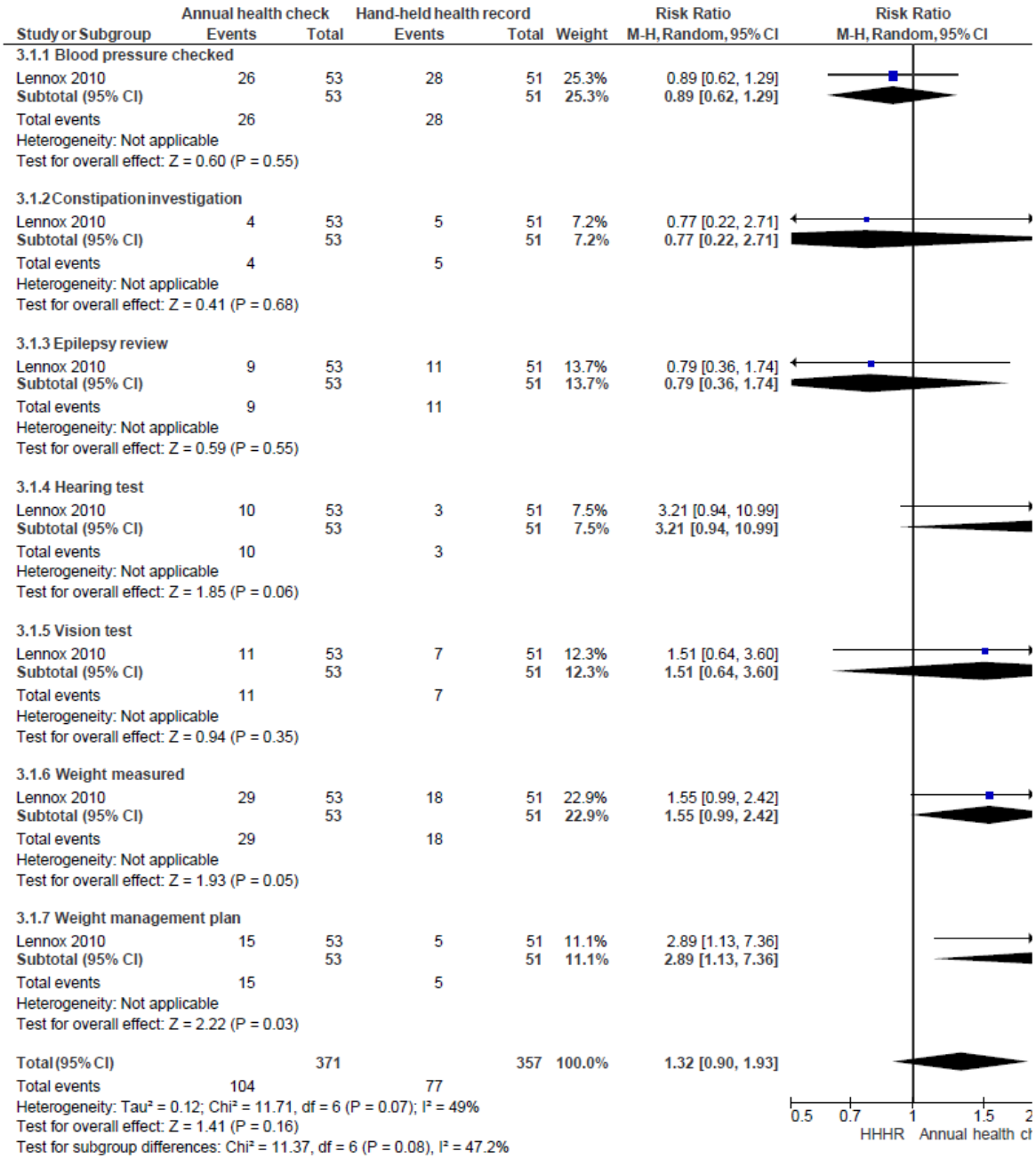


Figure 67: Premature death



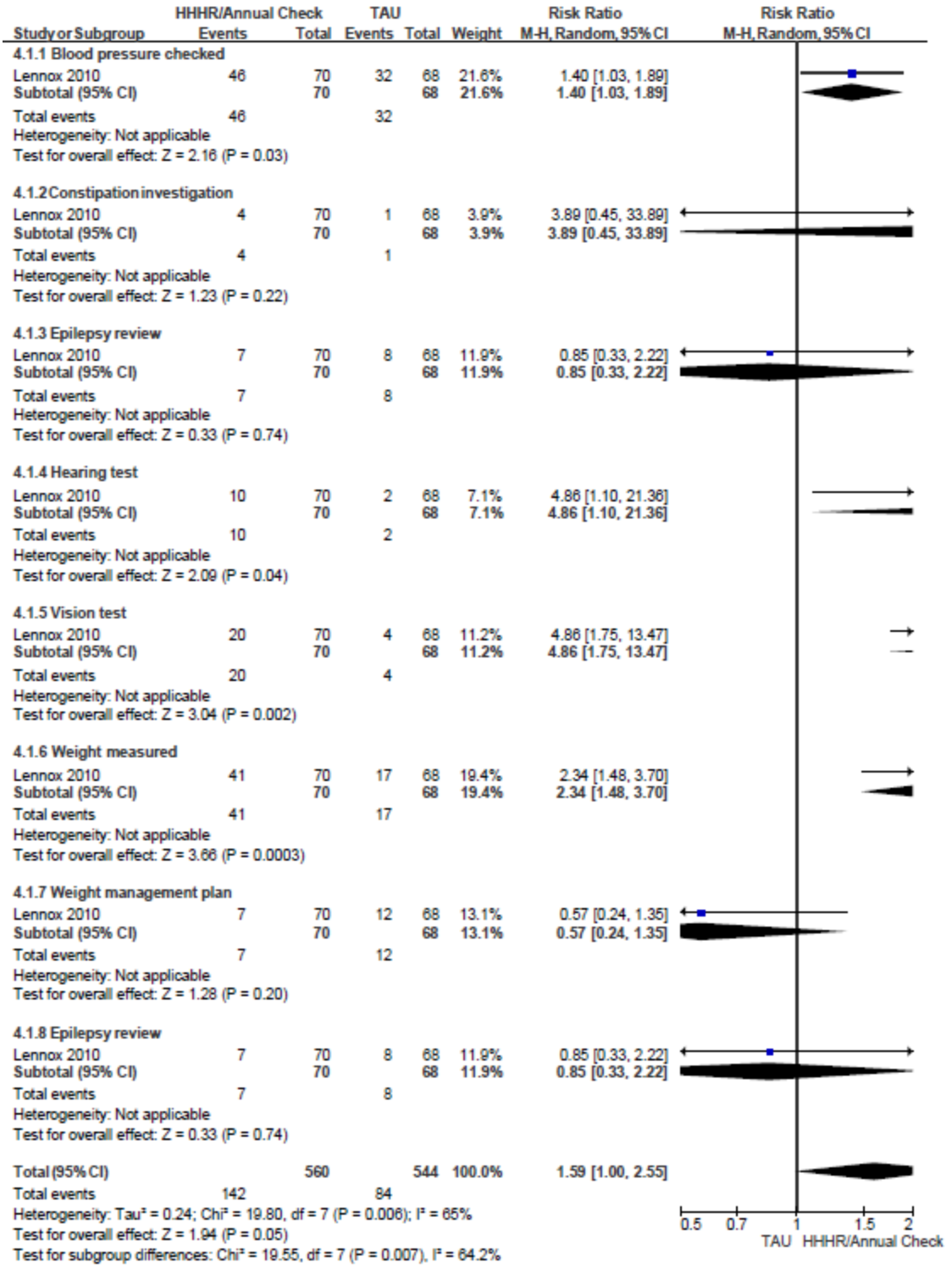
A.5.3 Annual health check versus hand-held health record

Figure 68: Health promotion


Annual health check
Hand-held health record
Risk Ratio
Risk Ratio
Study or Subgroup Events Total Events Total Weight M-H, Random, 95% CI
M-H, Random, 95% CI
3.1.1 Blood pressure checked
Lennox 2010 26 53 28 51 25.3% 0.89 [0.62, 1.29]
Subtotal (95% CI) 53 51 25.3% 0.89 [0.62, 1.29]
Total events 26 28
Heterogeneity: Not applicable
Test for overall effect: Z = 0.60 (P = 0.55)
3.1.2 Constipation investigation
Lennox 2010 4 53 5 51 7.2% 0.77 [0.22, 2.71]
Subtotal (95% CI) 53 51 7.2% 0.77 [0.22, 2.71]
Total events 4 5
Heterogeneity: Not applicable
Test for overall effect: Z = 0.41 (P = 0.68)
3.1.3 Epilepsy review
Lennox 2010 9 53 11 51 13.7% 0.79 [0.36, 1.74]
Subtotal (95% CI) 53 51 13.7% 0.79 [0.36, 1.74]
Total events 9 11
Heterogeneity: Not applicable
Test for overall effect: Z = 0.59 (P = 0.55)
3.1.4 Hearing test
Lennox 2010 10 53 3 51 7.5% 3.21 [0.94, 10.99]
Subtotal (95% CI) 53 51 7.5% 3.21 [0.94, 10.99]
Total events 10 3
Heterogeneity: Not applicable
Test for overall effect: Z = 1.85 (P = 0.06)
3.1.5 Vision test
Lennox 2010 11 53 7 51 12.3% 1.51 [0.64, 3.60]
Subtotal (95% CI) 53 51 12.3% 1.51 [0.64, 3.60]
Total events 11 7
Heterogeneity: Not applicable
Test for overall effect: Z = 0.94 (P = 0.35)
3.1.6 Weight measured
Lennox 2010 29 53 18 51 22.9% 1.55 [0.99, 2.42]
Subtotal (95% CI) 53 51 22.9% 1.55 [0.99, 2.42]
Total events 29 18
Heterogeneity: Not applicable
Test for overall effect: Z = 1.93 (P = 0.05)
3.1.7 Weight management plan
Lennox 2010 15 53 5 51 11.1% 2.89 [1.13, 7.36]
Subtotal (95% CI) 53 51 11.1% 2.89 [1.13, 7.36]
Total events 15 5
Heterogeneity: Not applicable
Test for overall effect: Z = 2.22 (P = 0.03)
Total (95% CI) 371 357 100.0% 1.32 [0.90, 1.93]
Total events 104 77
Heterogeneity: Tau² = 0.12; Chi² = 11.71, df = 6 (P = 0.07); I² = 49%
Test for overall effect: Z = 1.41 (P = 0.16)
Test for subgroup differences: Chi² = 11.37, df = 6 (P = 0.08), I² = 47.2%
0.5
0.7
1
1.5
2
HHHR
Annual health ch

A.5.4 Hand-held health record and annual health check versus treatment as usual

Figure 69: Health promotion



A.6 Environmental change interventions aimed at reducing and managing behaviour that challenges

A.6.1 Sensory intervention versus any control

Figure 70: Targeted behaviour that challenges (global) – post-treatment

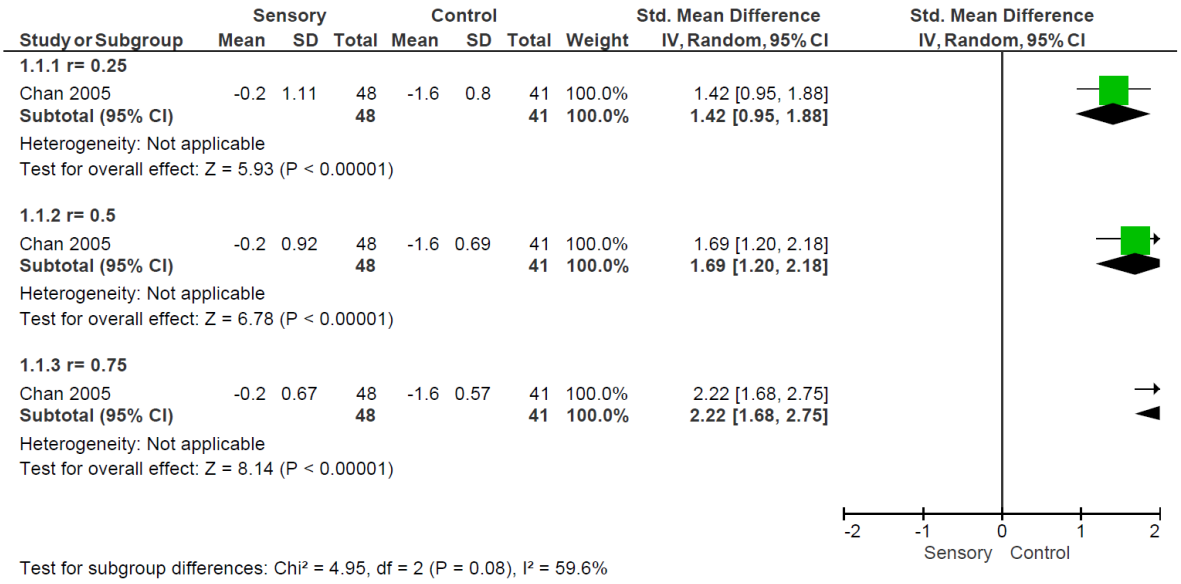


Figure 71: Targeted behaviour that challenges (global) – follow up at 12 weeks

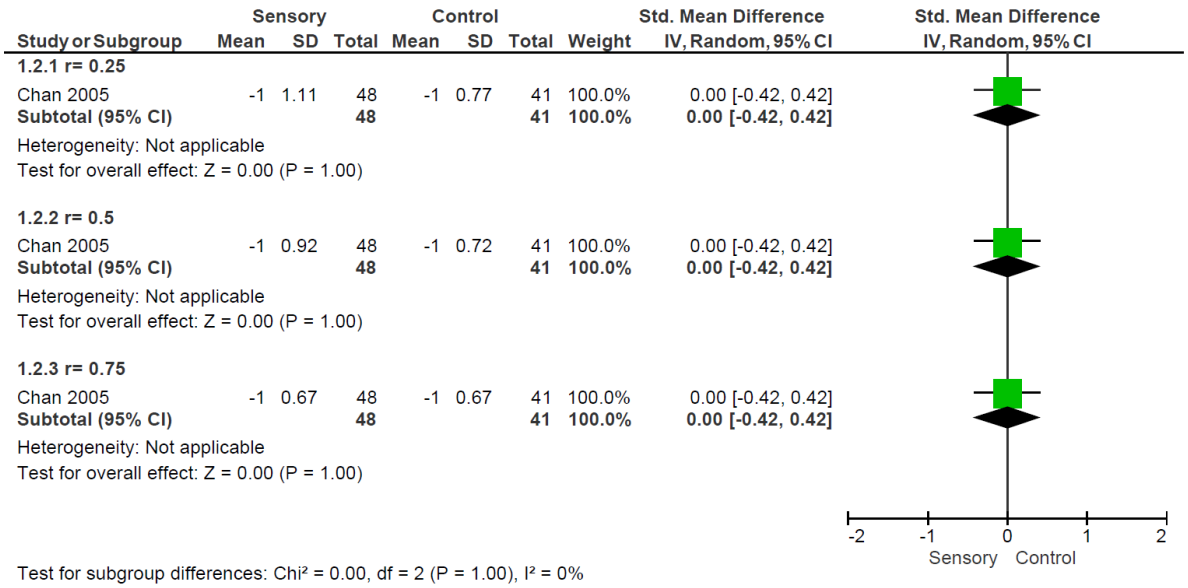


Figure 72: Targeted behaviour that challenges (self-injurious behaviour; severity) – post-treatment

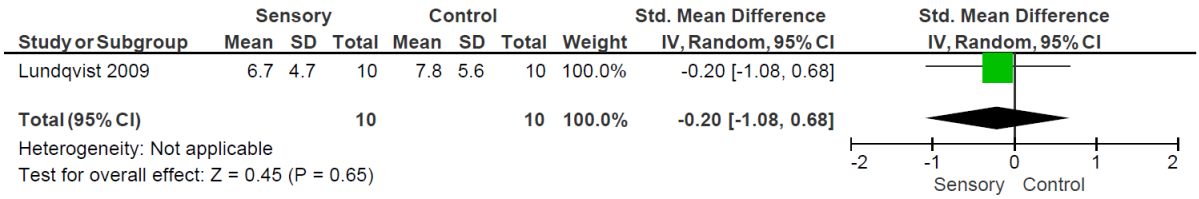


Figure 73: Targeted behaviour that challenges (self-injurious behaviour; frequency) – post-treatment

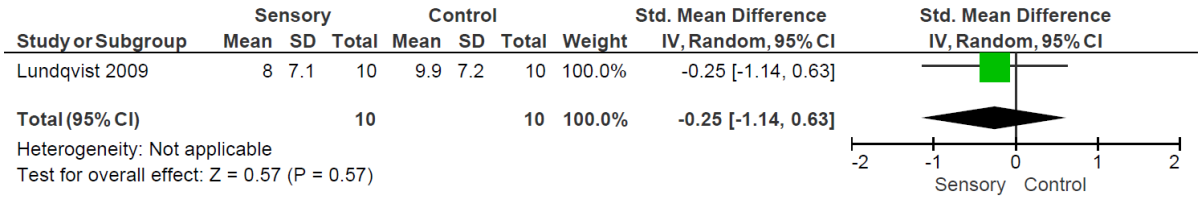


Figure 74: Targeted behaviour that challenges (stereotypical behaviour; severity) – post-treatment

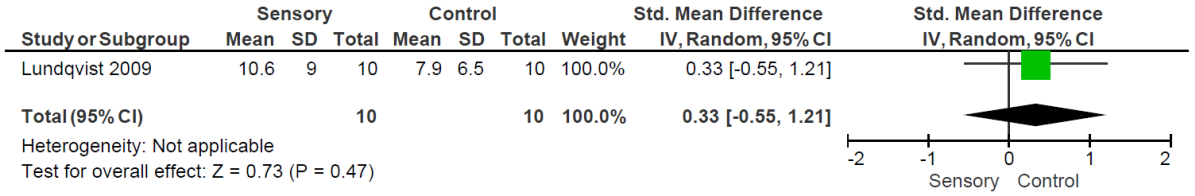


Figure 75: Targeted behaviour that challenges (stereotypical behaviour; frequency) – post-treatment

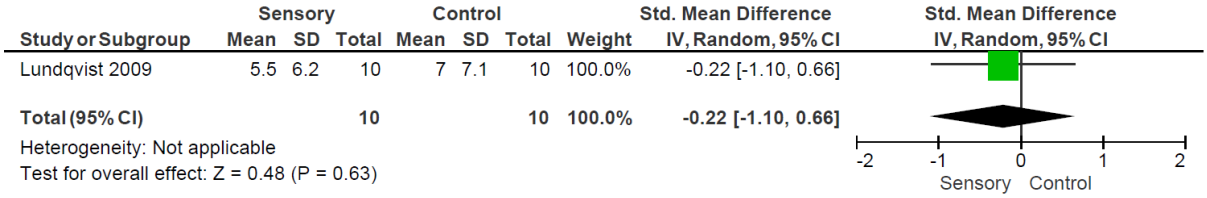


Figure 76: Targeted behaviour that challenges (aggressive/destructive behaviour; severity) – post-treatment

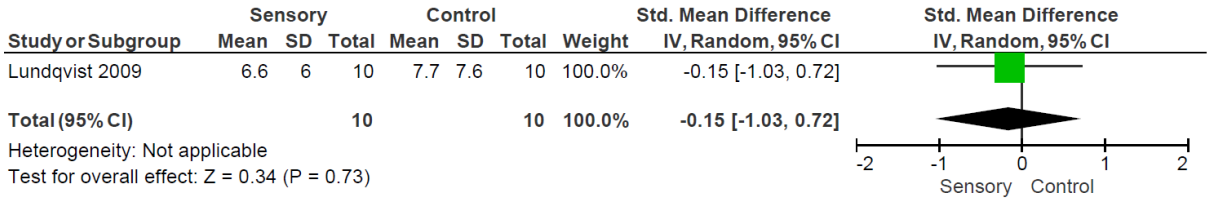


Figure 77: Targeted behaviour that challenges (aggressive/destructive behaviour; frequency) – post-treatment

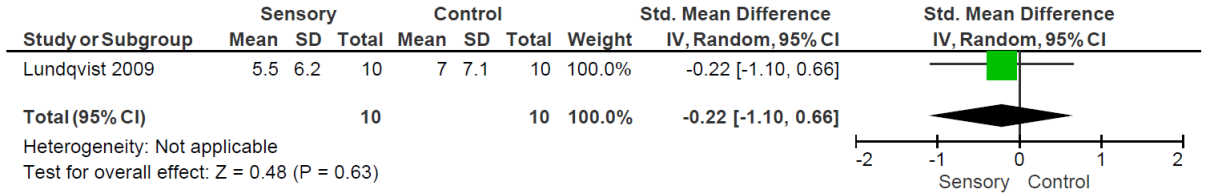


Figure 78: Adaptive functioning – post treatment

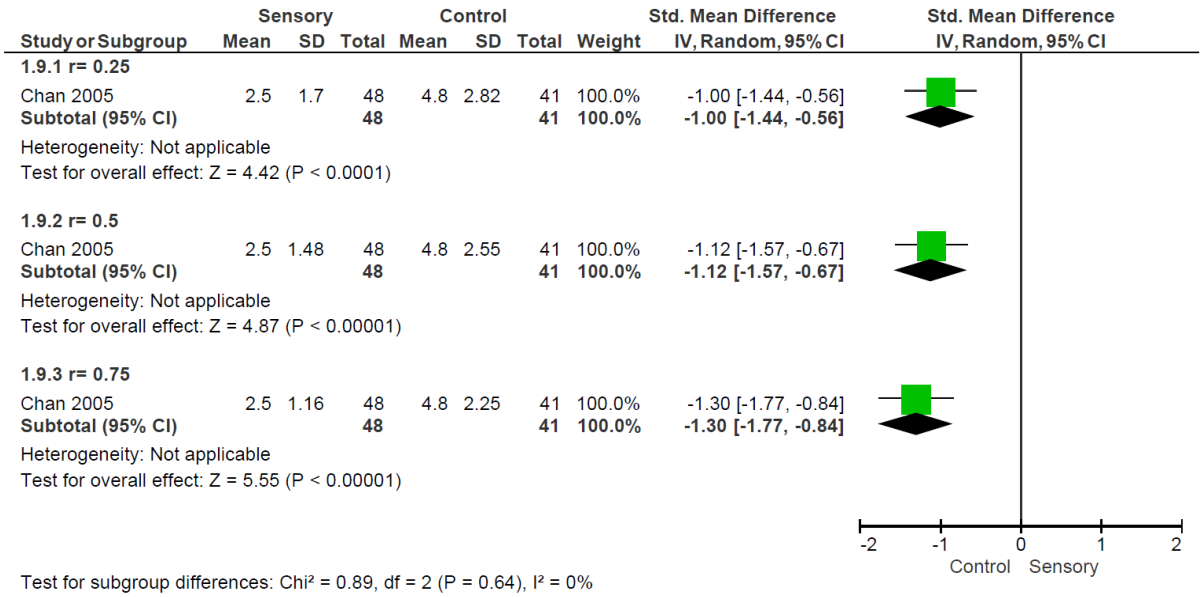
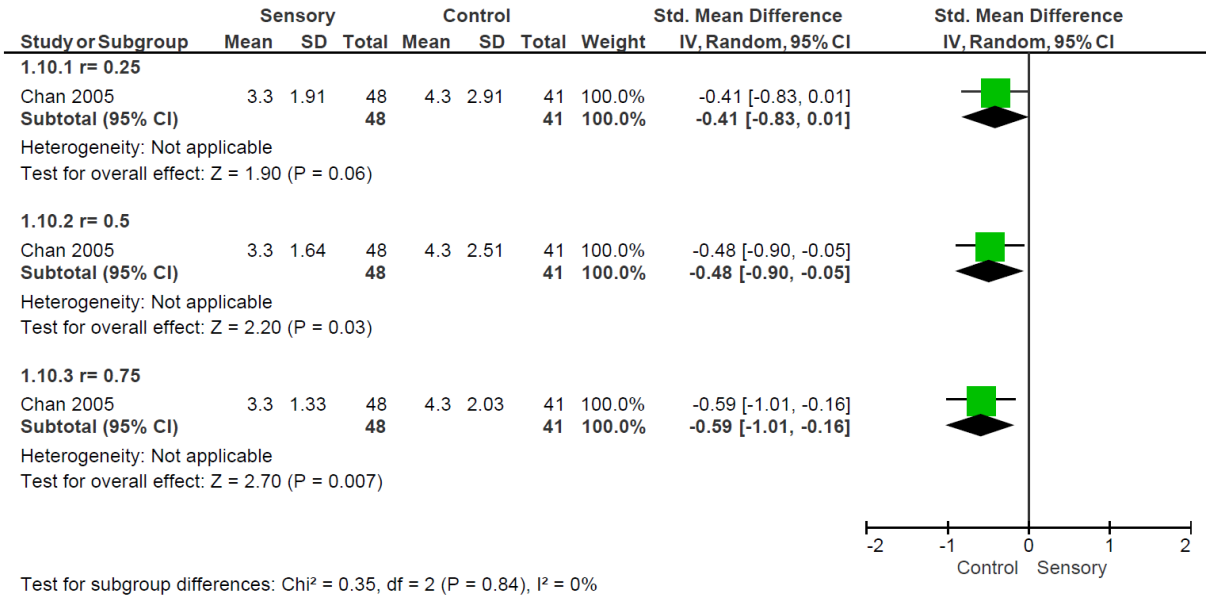


Figure 79: Adaptive functioning – follow-up at 12 weeks



A.6.2 Structured activity versus unstructured activity

Figure 80: Targeted behaviour that challenges (severity) – post-treatment

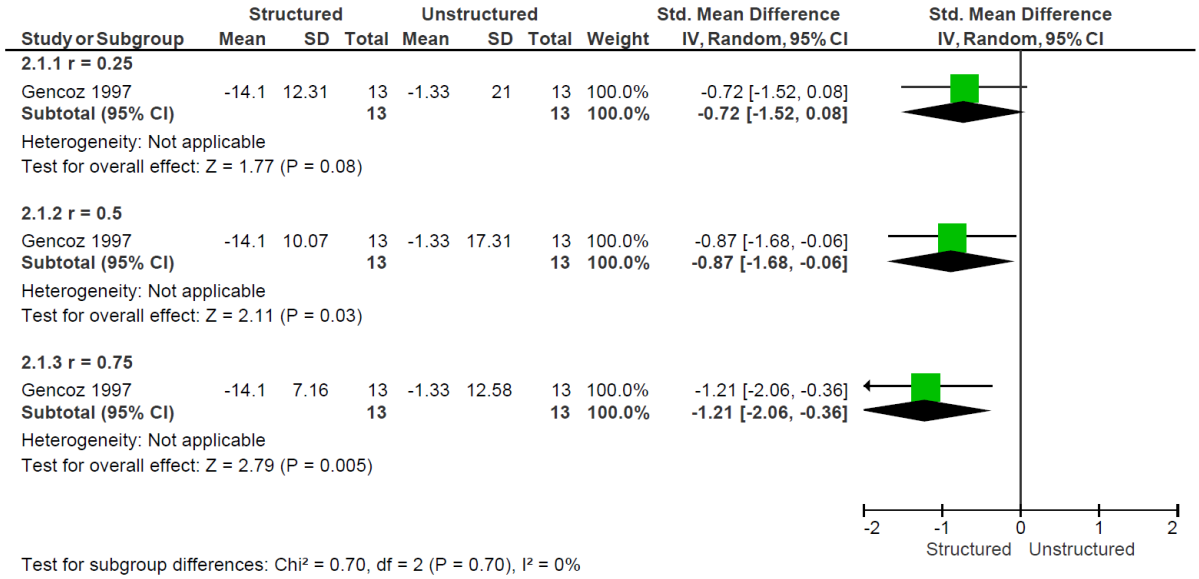
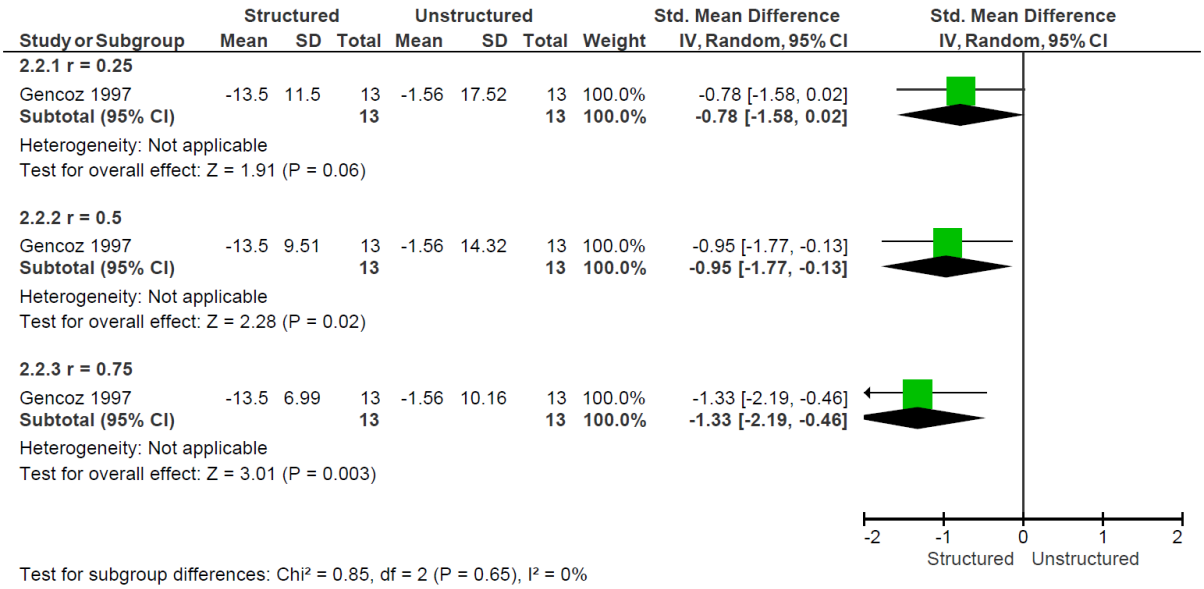


Figure 81: Targeted behaviour that challenges (severity) – follow-up at six weeks



A.7 Parent training interventions aimed at reducing and managing behaviour that challenges

A.7.1 Parent training versus any control

Figure 82: Targeted behaviour that challenges (severity) – post-treatment

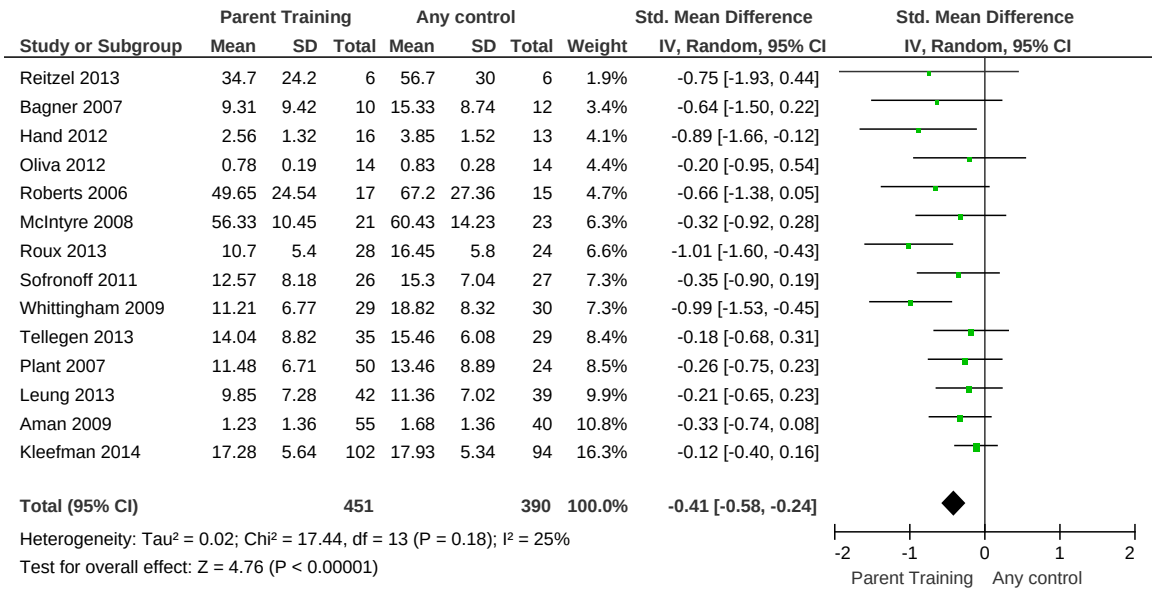


Figure 83: Targeted behaviour that challenges (severity) – follow-up

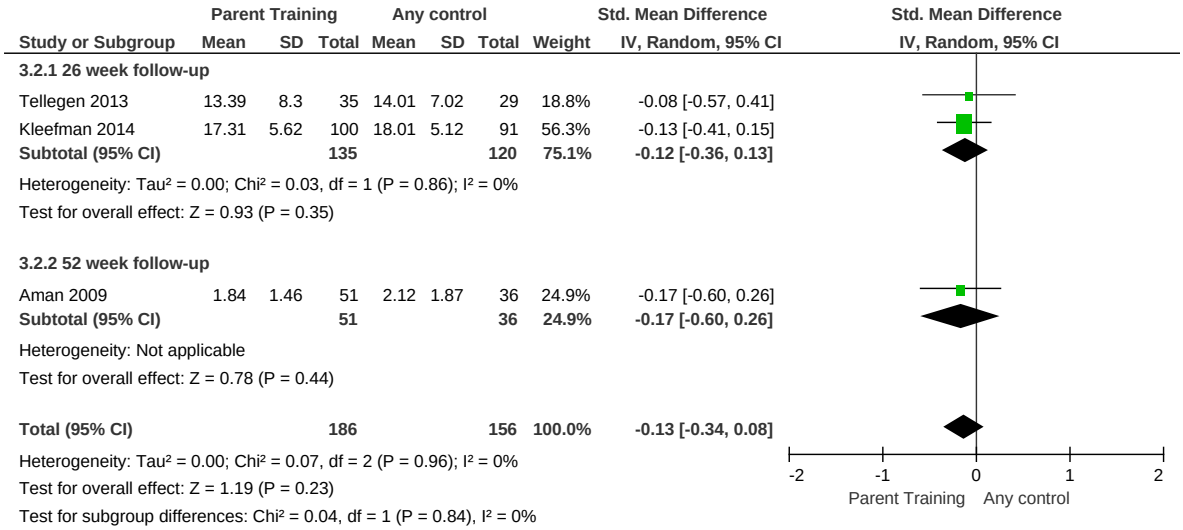


Figure 84: Targeted behaviour that challenges (severity, non-improvement) – post-treatment

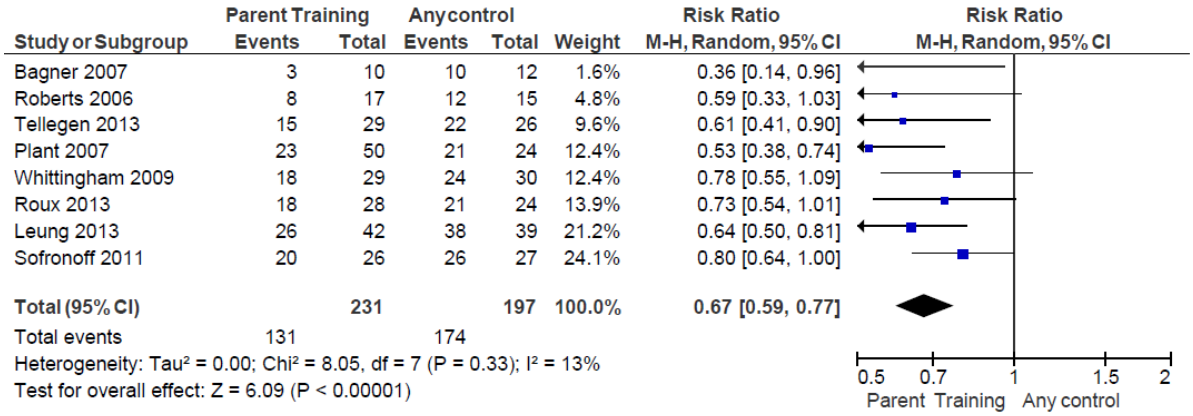


Figure 85: Targeted behaviour that challenges (frequency) – post-treatment

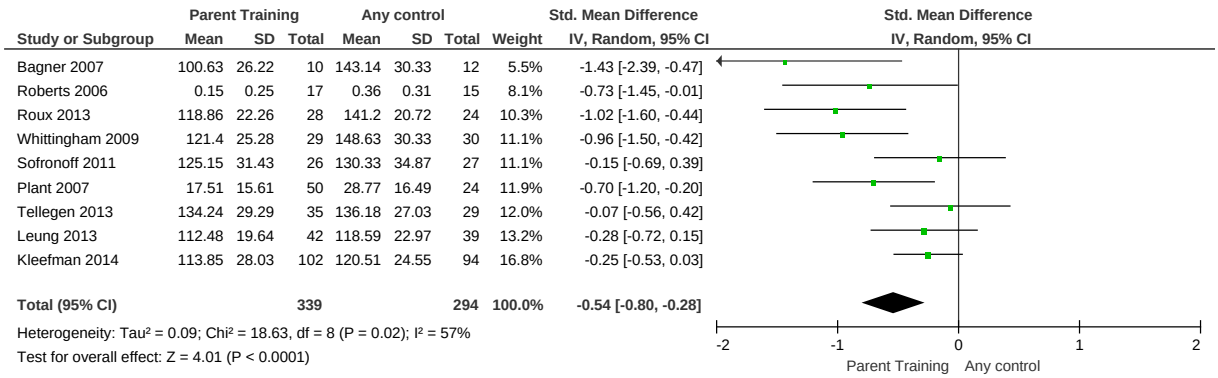


Figure 86: Targeted behaviour that challenges (frequency) – follow-up

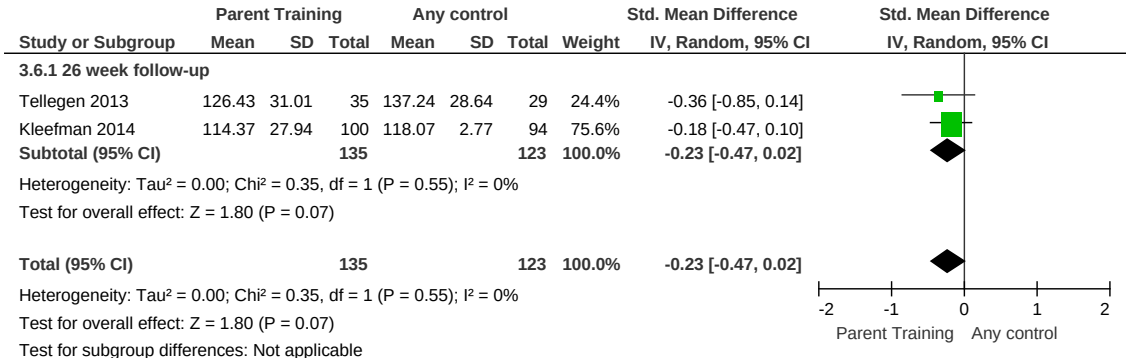


Figure 87: Targeted behaviour that challenges (frequency, non-improvement) – follow-up

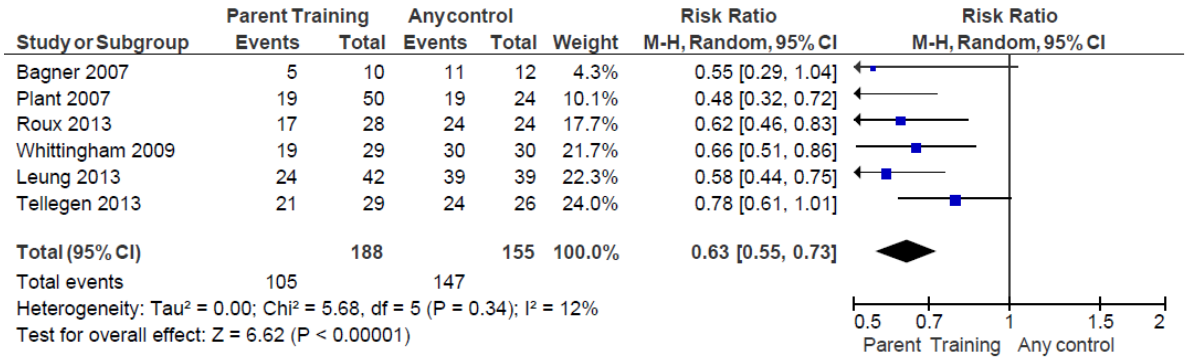


Figure 88: Adaptive functioning (communication) – post-treatment

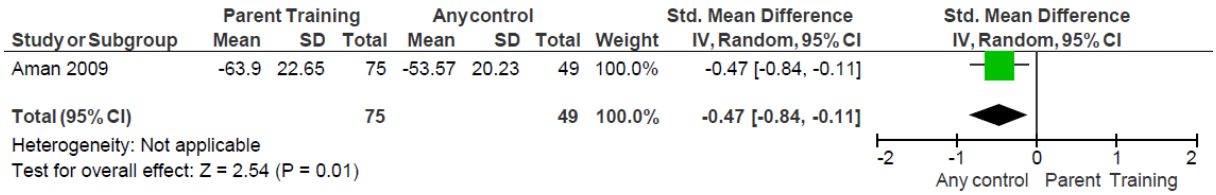
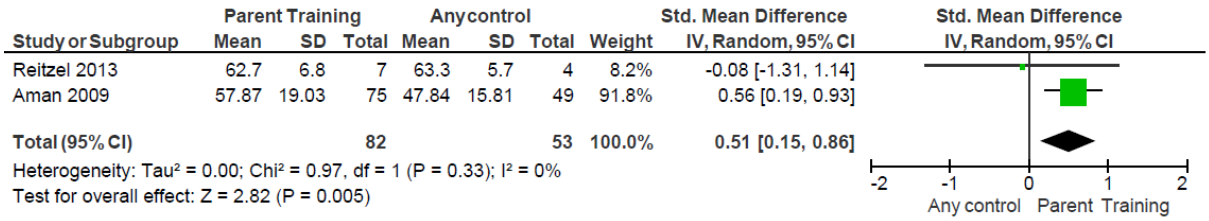


Figure 89: Adaptive functioning (global) – post-treatment



A.7.2 Individual parent training versus group parent training

Figure 90: Targeted behaviour that challenges (severity) – post-treatment

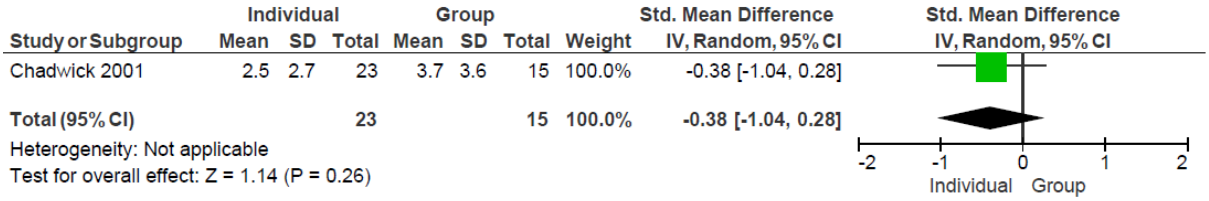


Figure 91: Targeted behaviour that challenges (severity) – follow-up

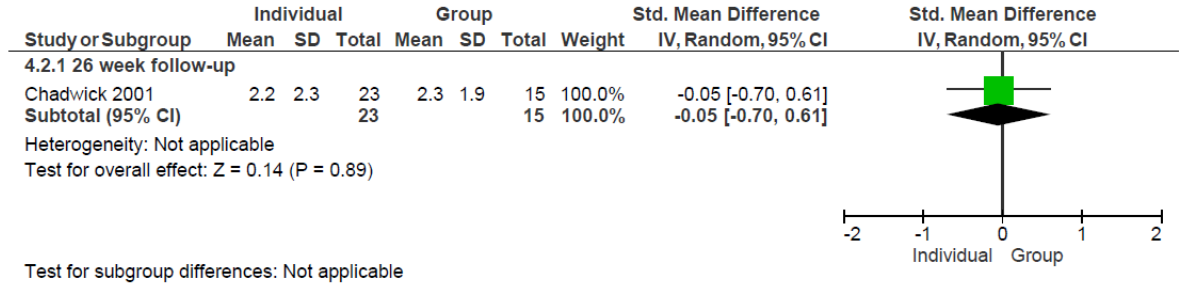


Figure 92: Targeted behaviour that challenges (frequency) – post-treatment

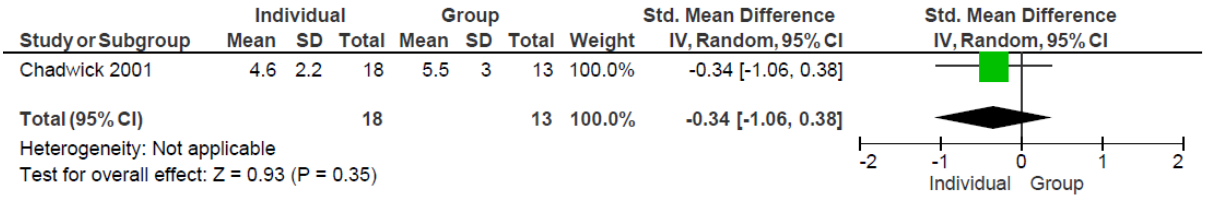
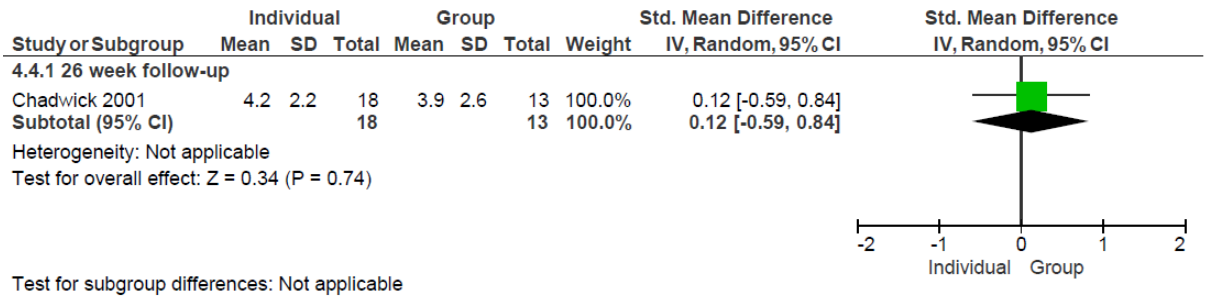


Figure 93: Targeted behaviour that challenges (frequency) – follow-up



A.7.3 Parent training plus optimism training versus parent training alone

Figure 94: Targeted behaviour that challenges (severity) – post-treatment

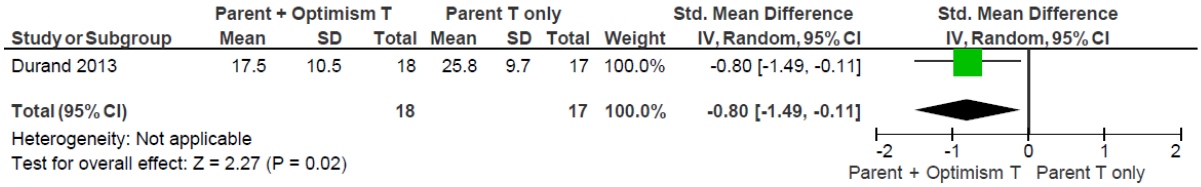


Figure 95: Targeted behaviour that challenges (severity) – follow-up

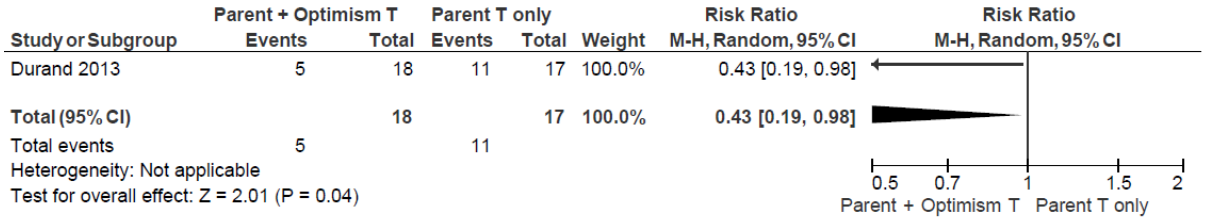
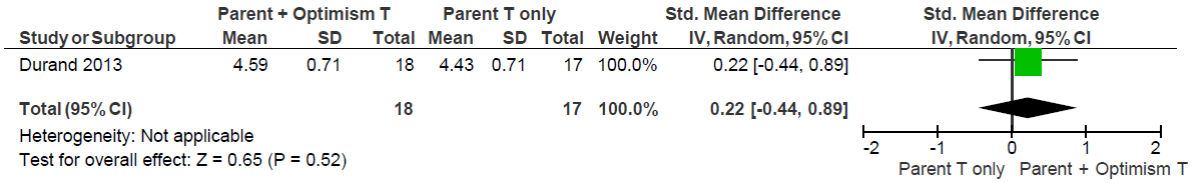


Figure 96: Carer satisfaction – follow-up



A.7.4 Enhanced parent training (SSTP) versus standard parent training (SSTP)

Figure 97: Targeted behaviour that challenges (severity) – post-treatment

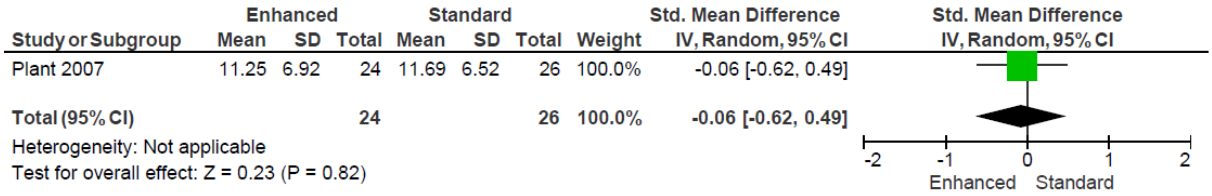


Figure 98: Targeted behaviour that challenges (severity) – follow-up

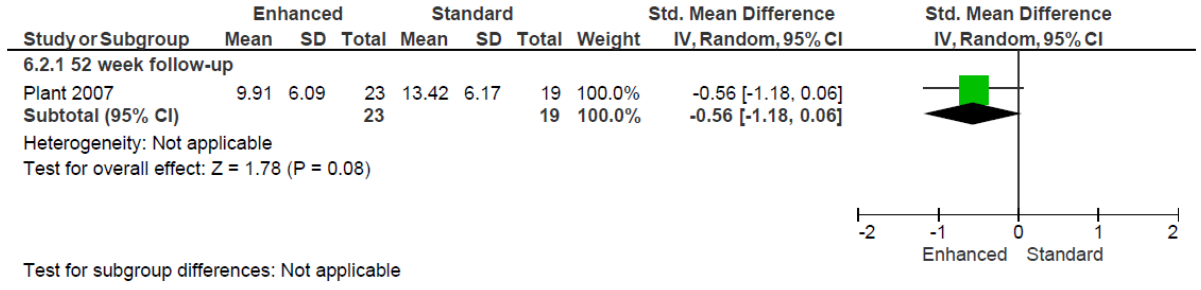


Figure 99: Targeted behaviour that challenges (severity, non-improvement) – post-treatment

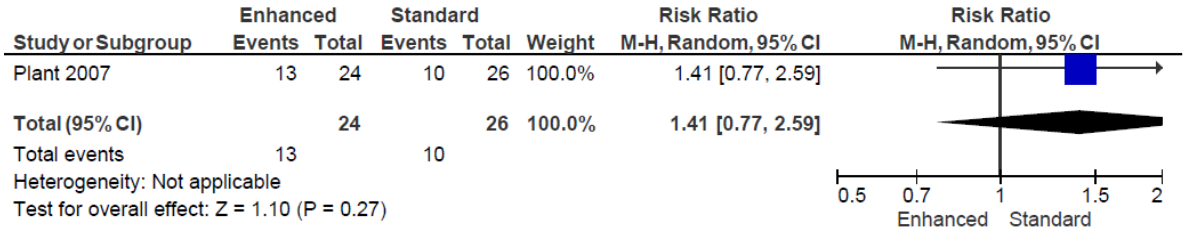


Figure 100: Targeted behaviour that challenges (severity, non-improvement) – follow-up

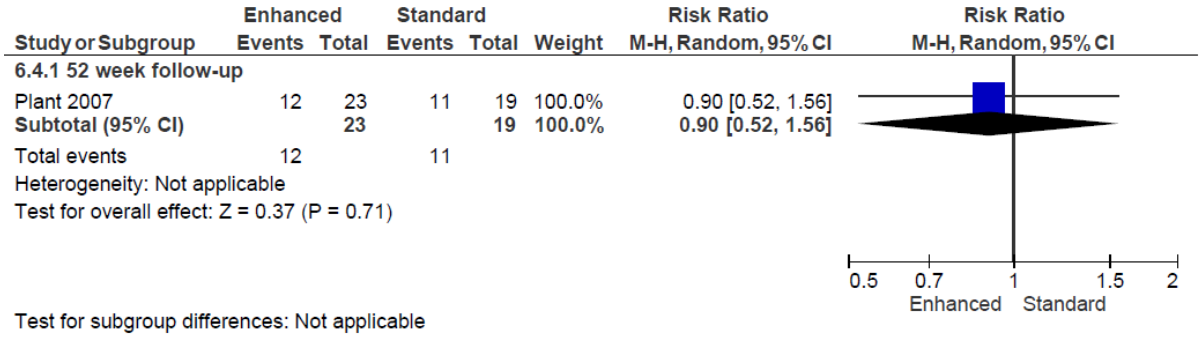


Figure 101: Targeted behaviour that challenges (frequency) – post-treatment

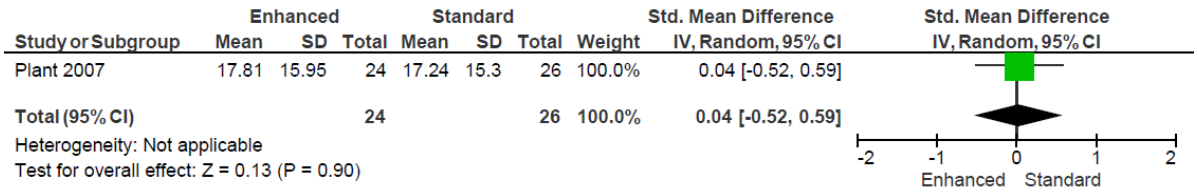


Figure 102: Targeted behaviour that challenges (frequency) – follow-up

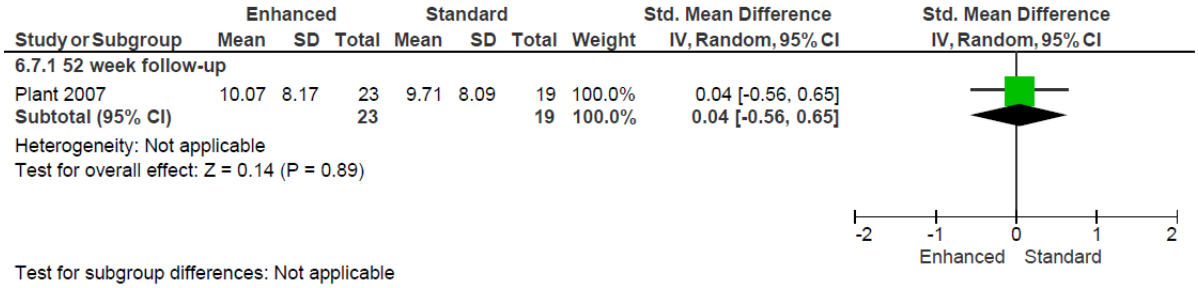


Figure 103: Targeted behaviour that challenges (frequency, non-improvement) – post-treatment

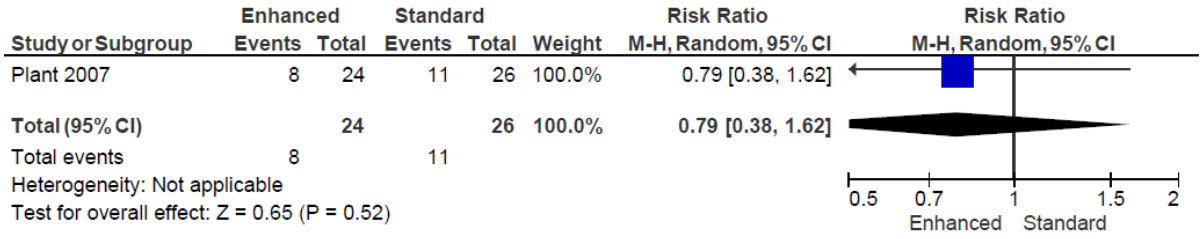


Figure 104: Targeted behaviour that challenges (frequency, non-improvement) – follow-up

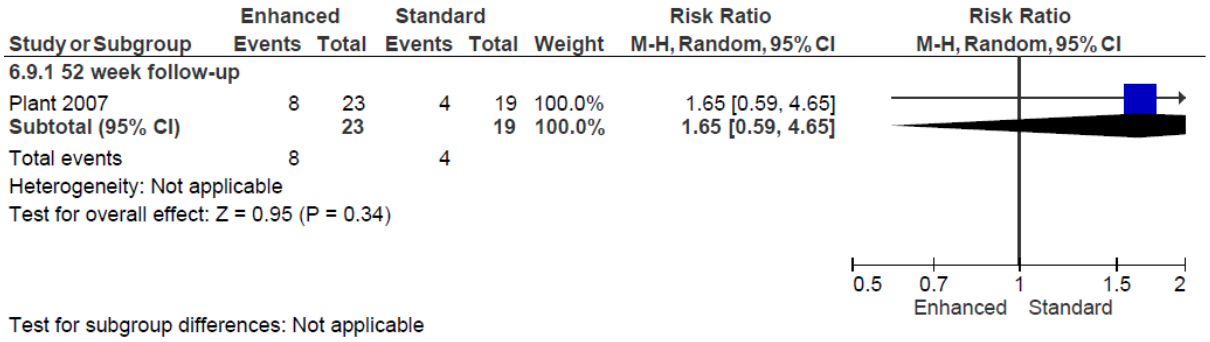
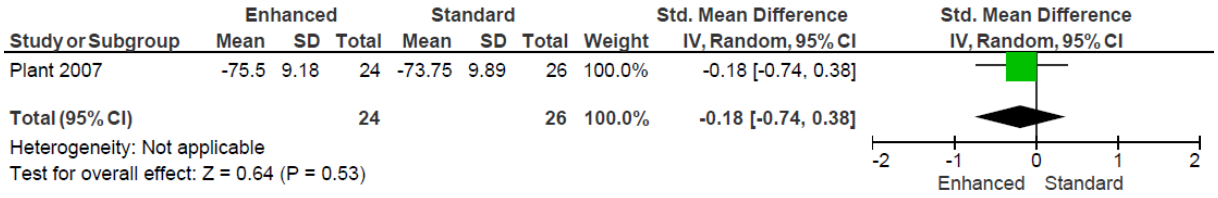


Figure 105: Carer satisfaction – post-treatment



A.8 Psychosocial interventions aimed at reducing and managing behaviour that challenges

A.8.1 Cognitive behavioural interventions versus any control

Figure 106: Targeted behaviour that challenges (severity, family carer rated) – post-treatment

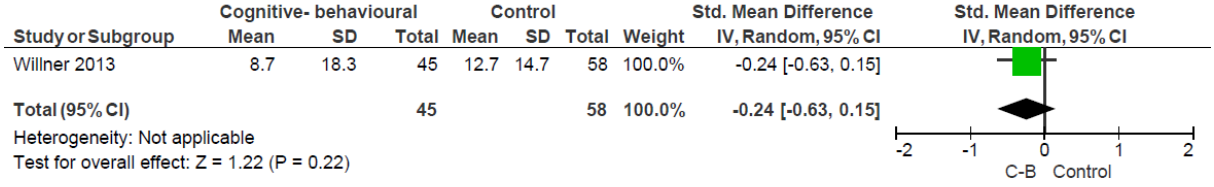


Figure 107: Targeted behaviour that challenges (severity, family carer rated) – follow-up

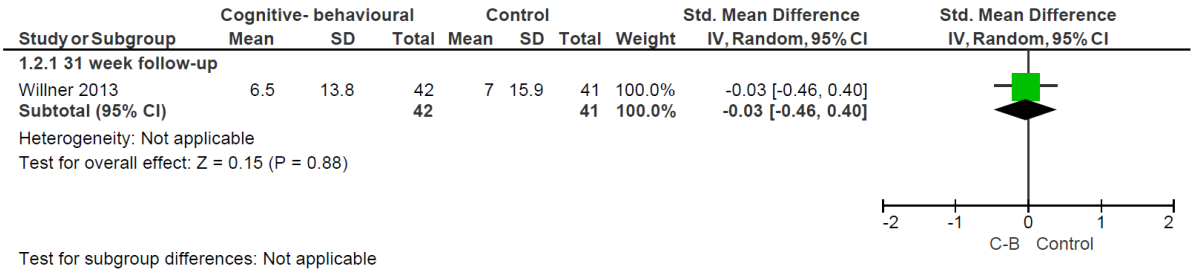


Figure 108: Targeted behaviour that challenges (severity, non-improvement, paid carer rated) – post-treatment

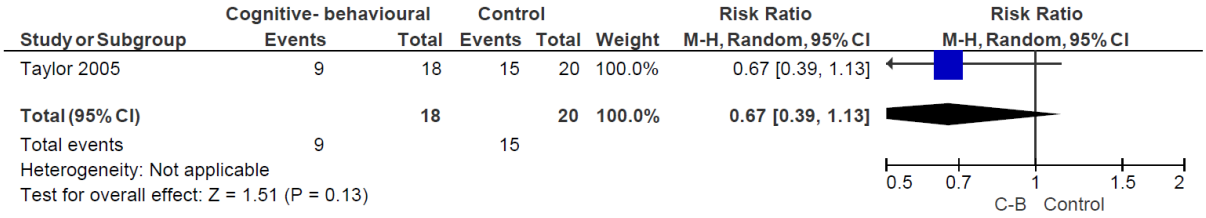


Figure 109: Targeted behaviour that challenges (severity, paid carer rated) – post-treatment

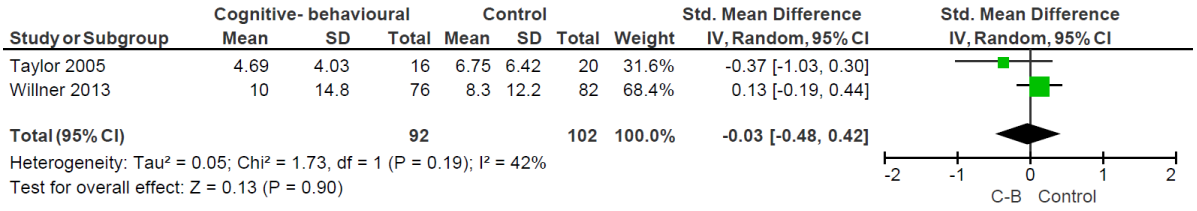


Figure 110: Targeted behaviour that challenges (severity, paid carer rated) – follow-up

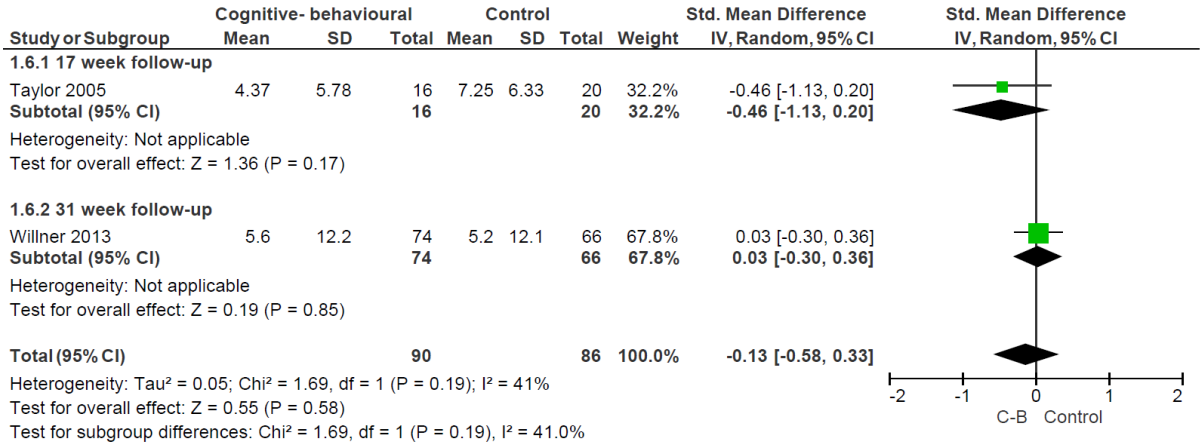


Figure 111: Targeted behaviour that challenges (frequency, family carer rated) – post-treatment

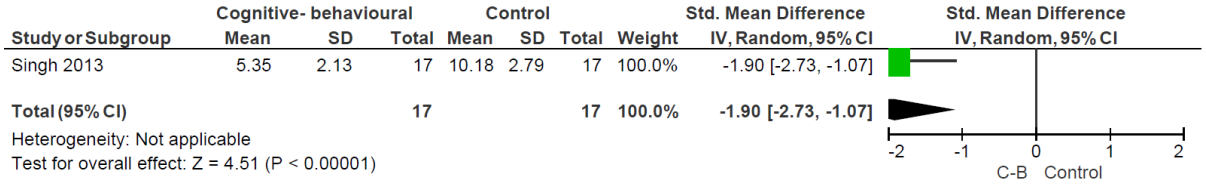


Figure 112: Targeted behaviour that challenges (frequency, family carer rated) – follow-up

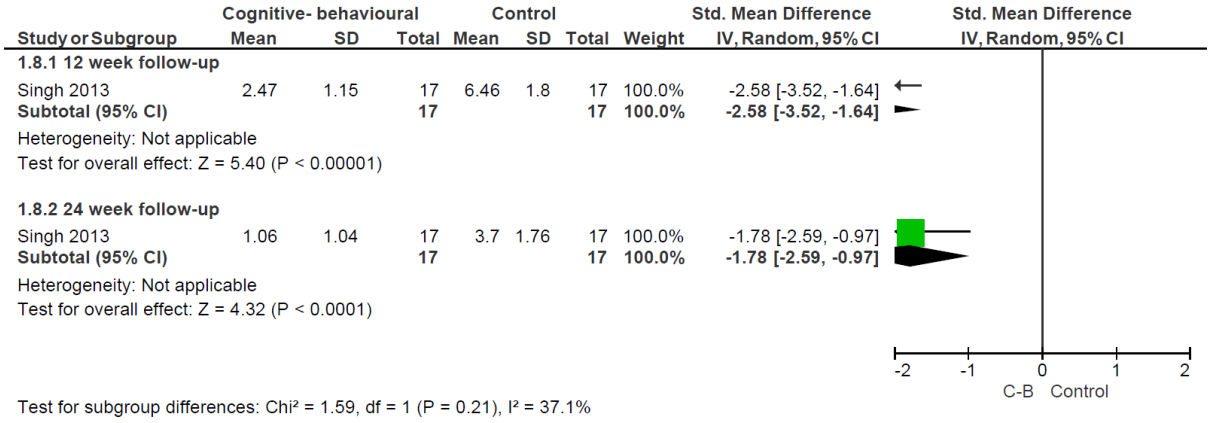


Figure 113: Adaptive functioning (paid carer rated) – post-treatment

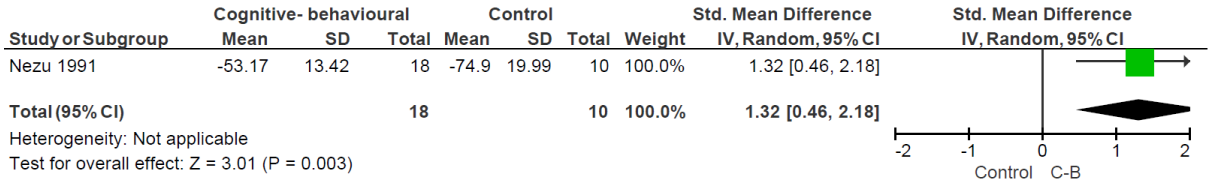


Figure 114: Quality of life – post-treatment

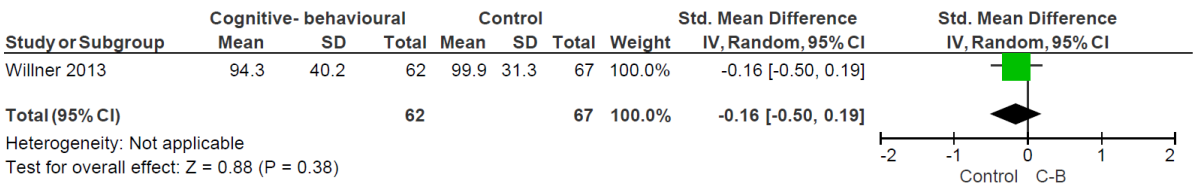
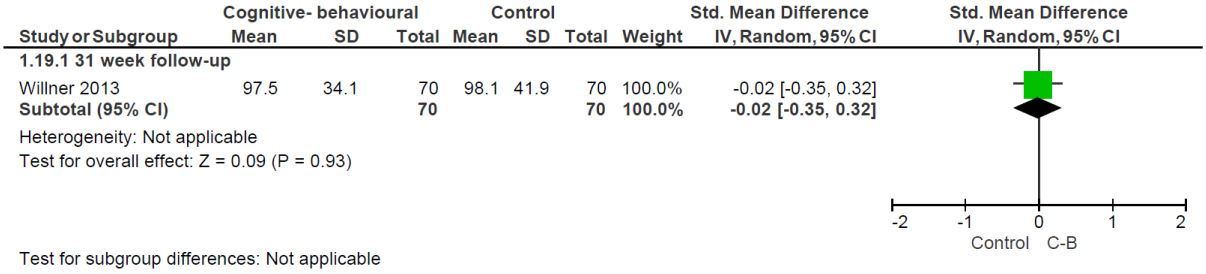


Figure 115: Quality of life – follow-up



A.8.2 Behavioural therapy versus any control

Figure 116: Targeted behaviour that challenges (severity, family carer rated) – post-treatment

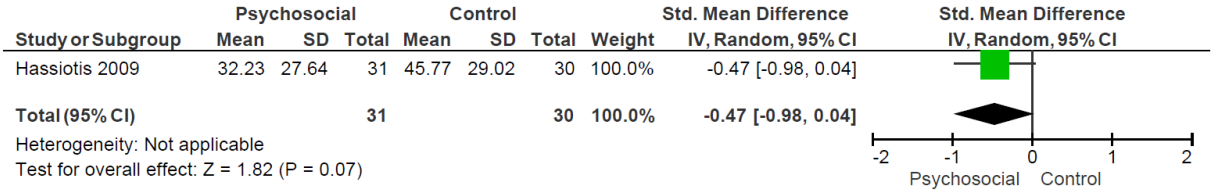
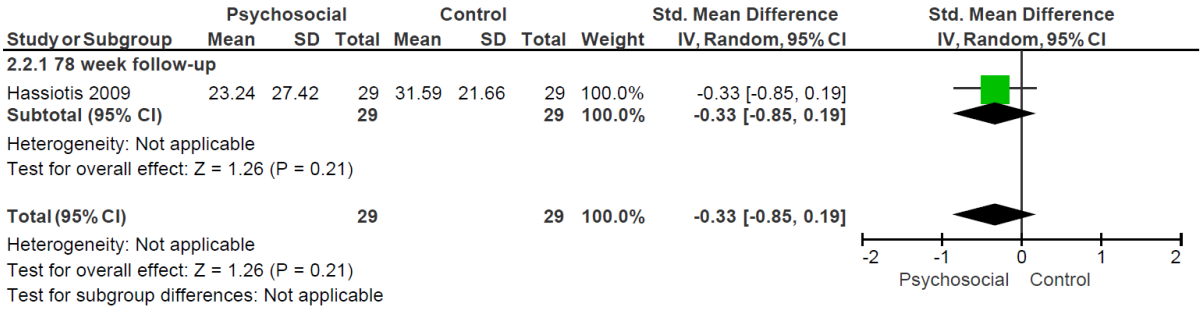


Figure 117: Targeted behaviour that challenges (severity, family carer rated) – follow-up



A.9 Sleep interventions aimed at reducing and managing behaviour that challenges

A.9.1 Sleep interventions versus any control

Figure 118: Targeted behaviour that challenges (global problem sleep behaviour, non-improvement) – post-treatment

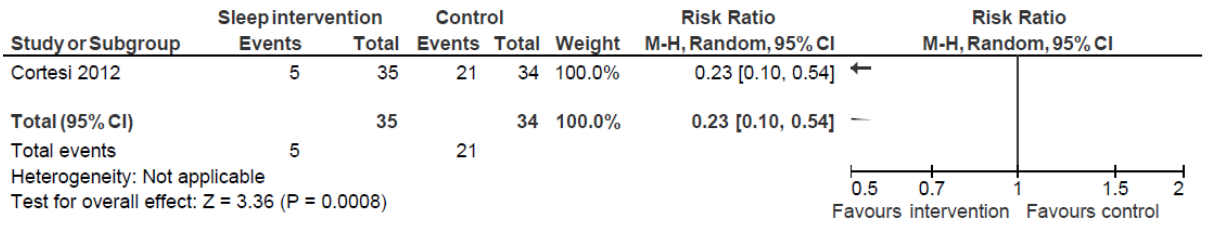


Figure 119: Targeted behaviour that challenges (global problem sleep behaviour) – post-treatment

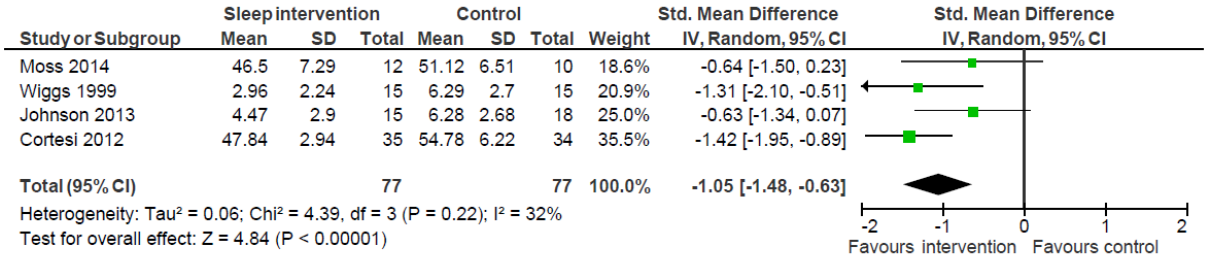


Figure 120: Targeted behaviour that challenges (global problem sleep behaviour) – follow-up

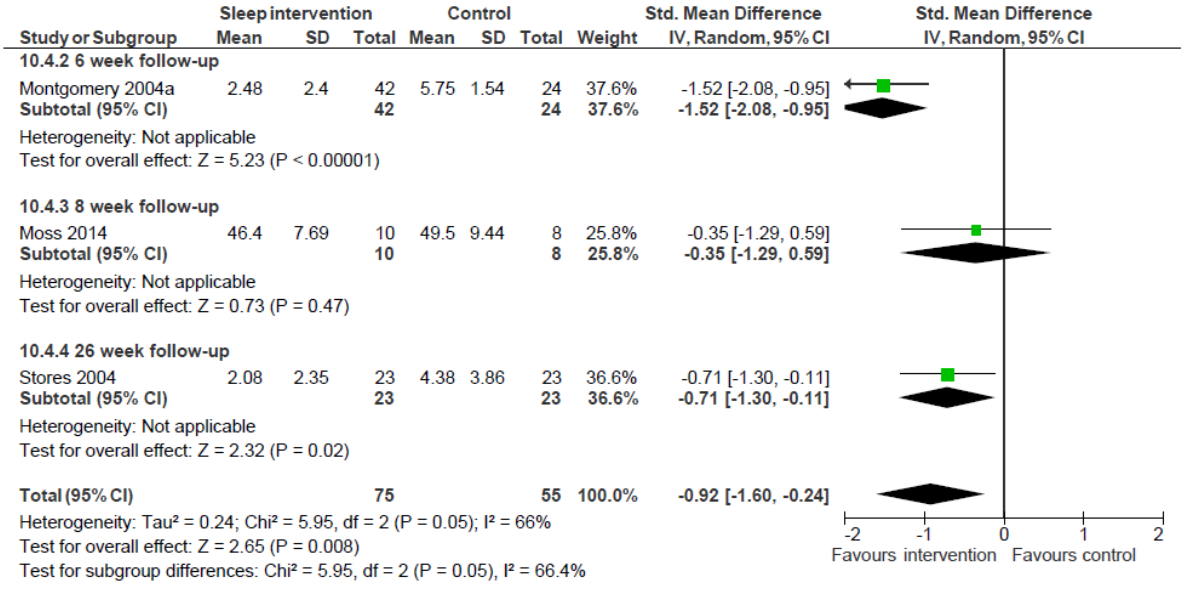


Figure 121: Targeted behaviour that challenges (positive sleep behaviour, actigraph) – post-treatment

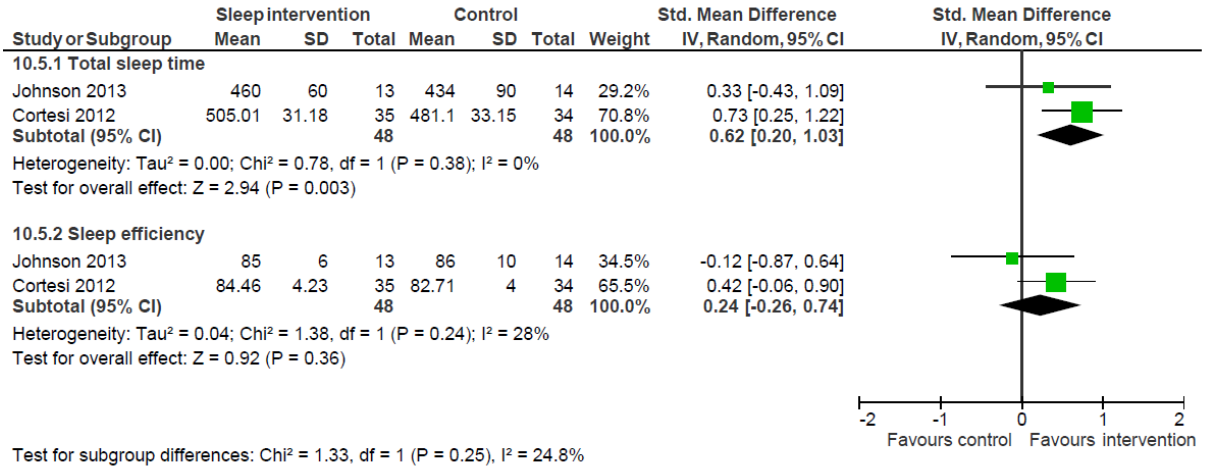


Figure 122: Targeted behaviour that challenges (positive sleep behaviour, actigraph) – follow-up

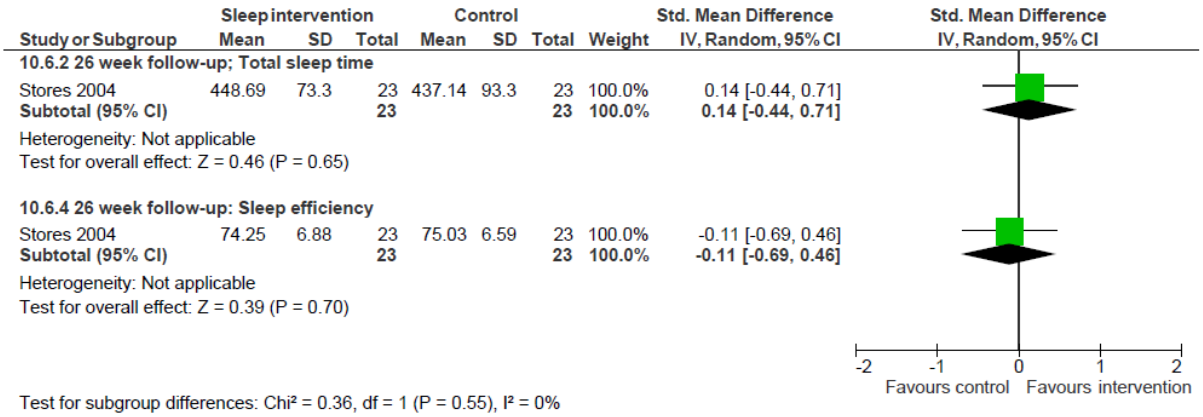


Figure 123: Targeted behaviour that challenges (problem sleep behaviour, actigraph) – post-treatment

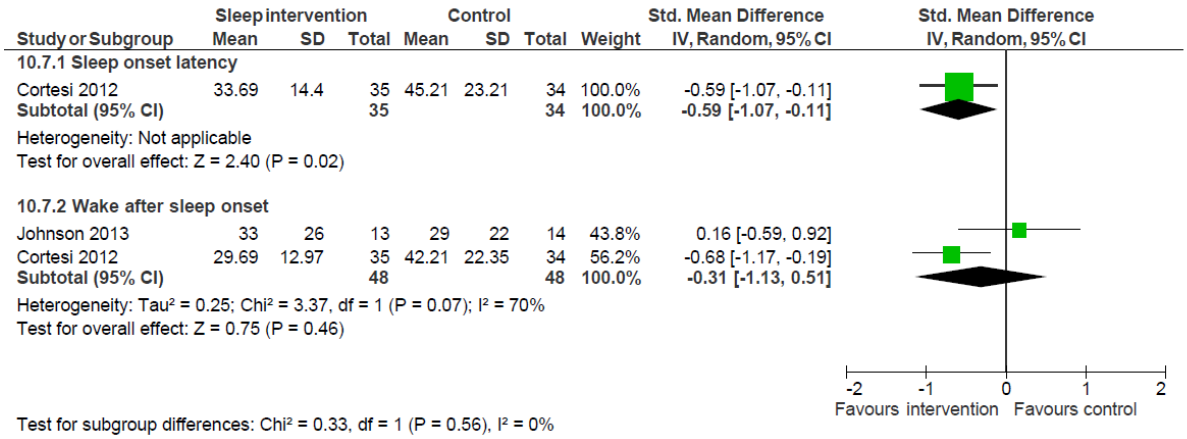


Figure 124: Targeted behaviour that challenges (problem sleep behaviour, actigraph) – follow-up

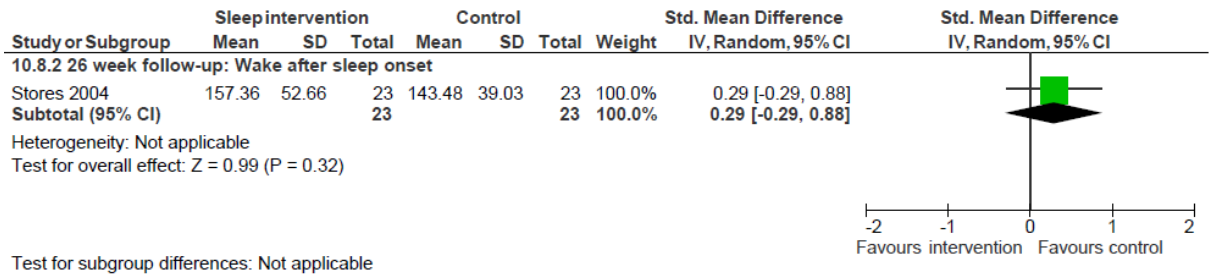


Figure 125: Targeted behaviour that challenges (positive sleep behaviour, sleep diary) – post-treatment

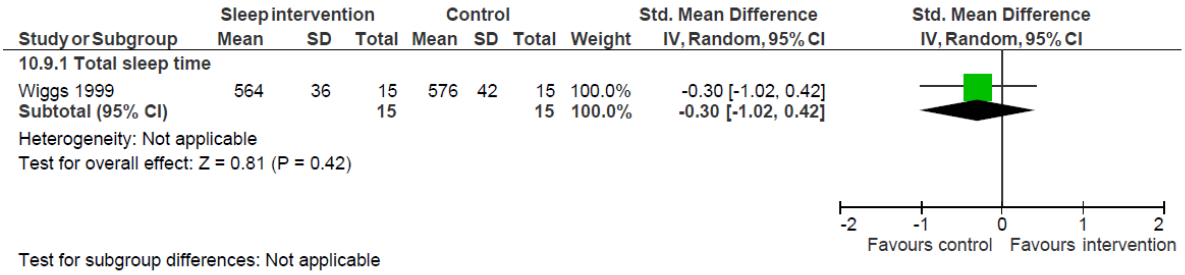


Figure 126: Targeted behaviour that challenges (problem sleep behaviour, sleep diary) – post-treatment

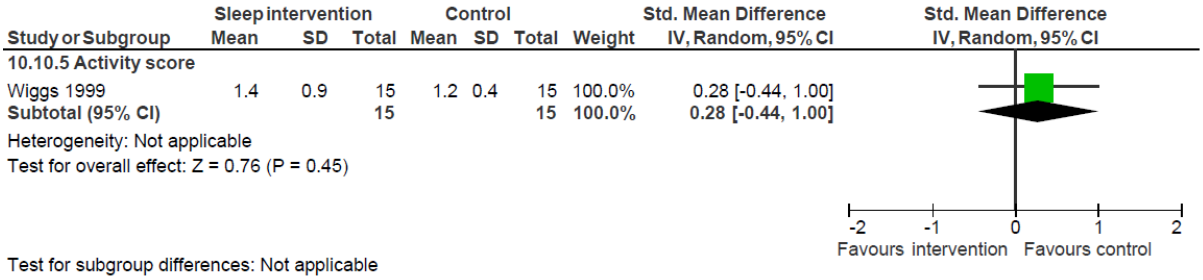
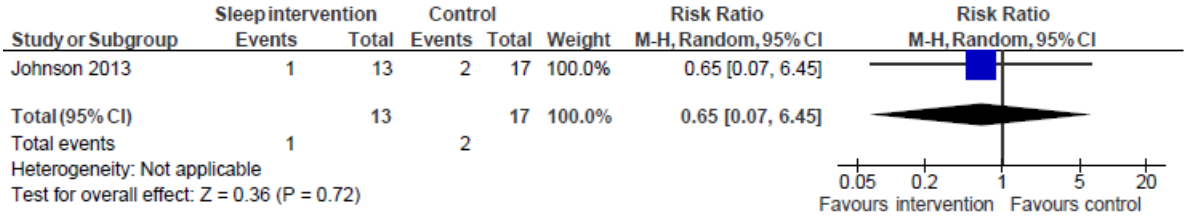
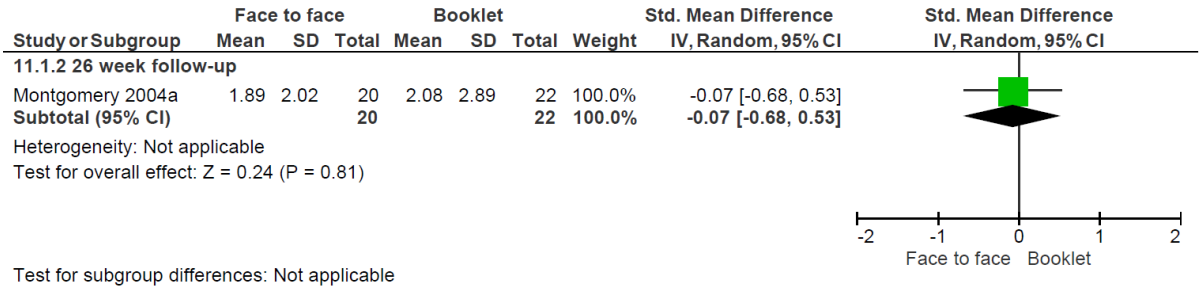


Figure 127: Carer satisfaction (non-satisfied) – post-treatment



A.9.2 Face-to-face sleep intervention versus booklet only sleep intervention

Figure 128: Targeted behaviour that challenges (sleep problem behaviour) – follow-up



A.10 Pharmacological interventions aimed at reducing and managing behaviour that challenges

A.10.1 Risperidone versus placebo in children and young people

Figure 129: Targeted behaviour that challenges (severity) – post-treatment

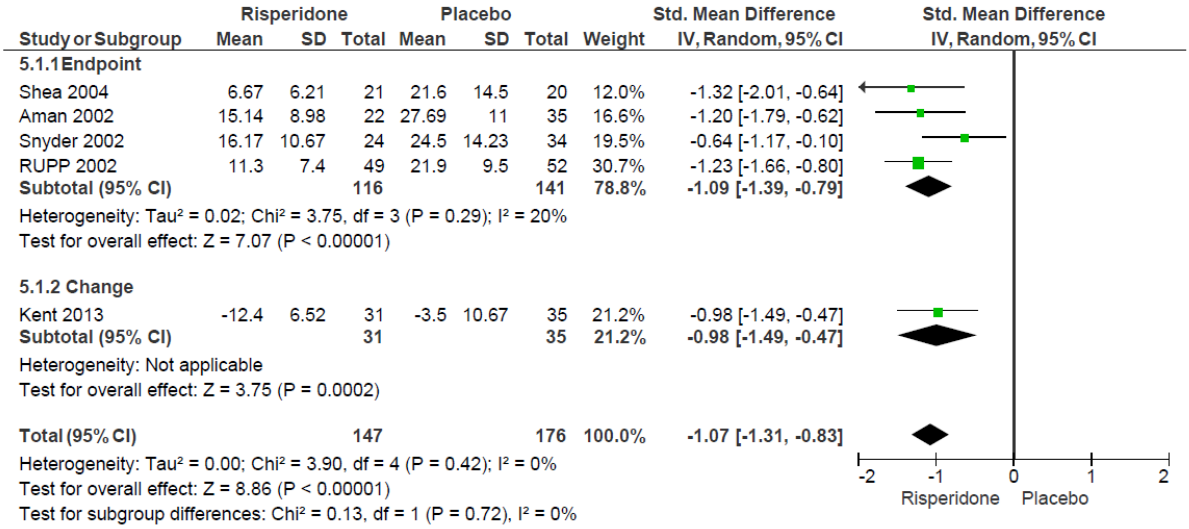


Figure 130: Targeted behaviour that challenges (severity, non-improvement) – post-treatment

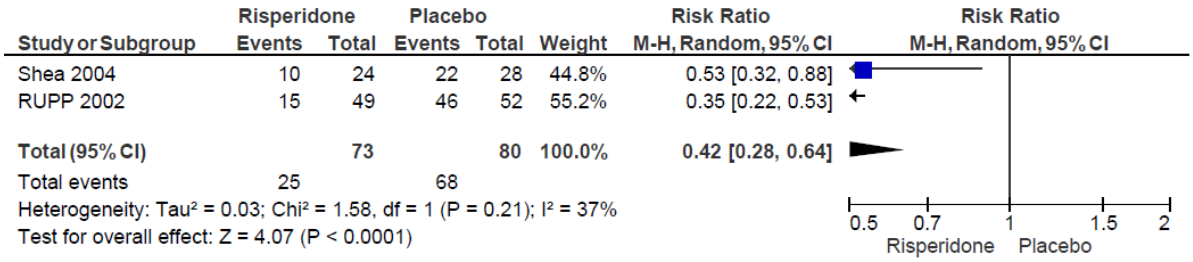


Figure 131: Adaptive functioning (social) – post-treatment

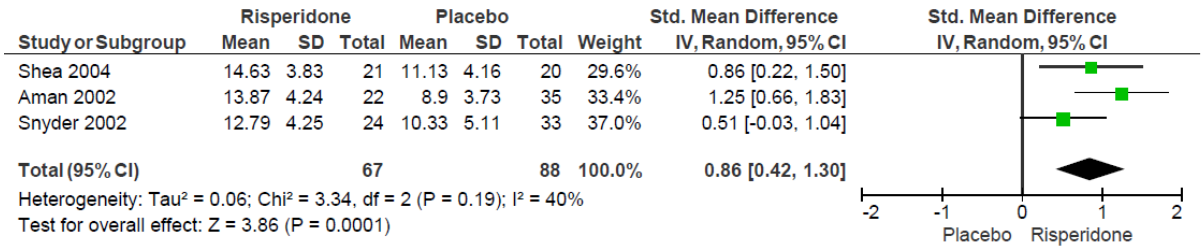


Figure 132: Adverse events (elevated prolactin, non-occurrence) – post-treatment

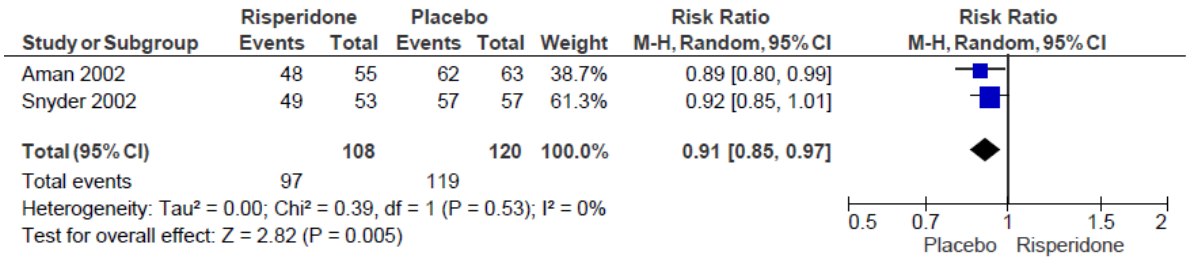


Figure 133: Adverse events (prolactin-related adverse event; oligomenorrhea, non-occurrence) – post-treatment

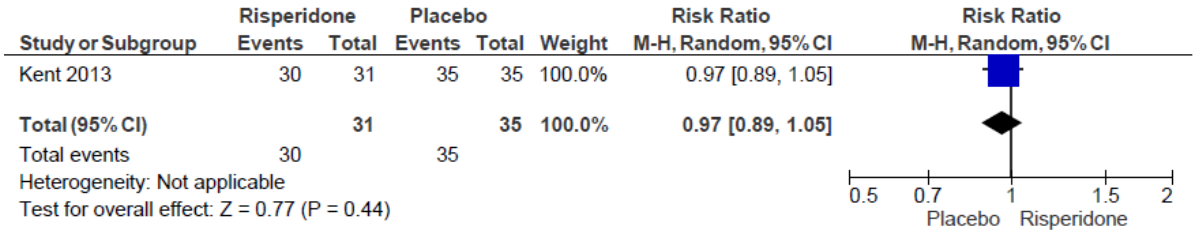


Figure 134: Adverse events (prolactin level; ng/ml) – post-treatment

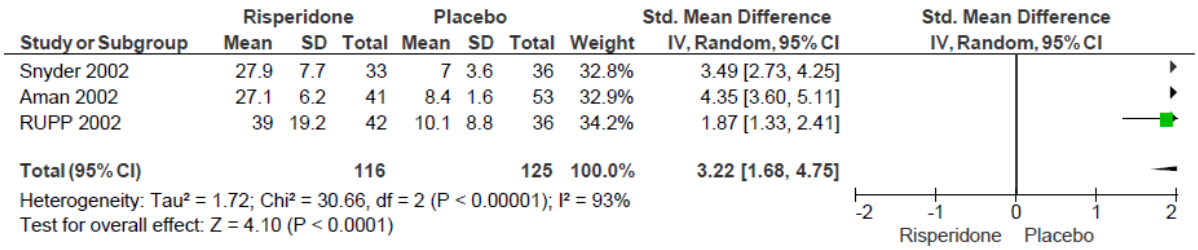


Figure 135: Adverse events (weight; kg) – post-treatment

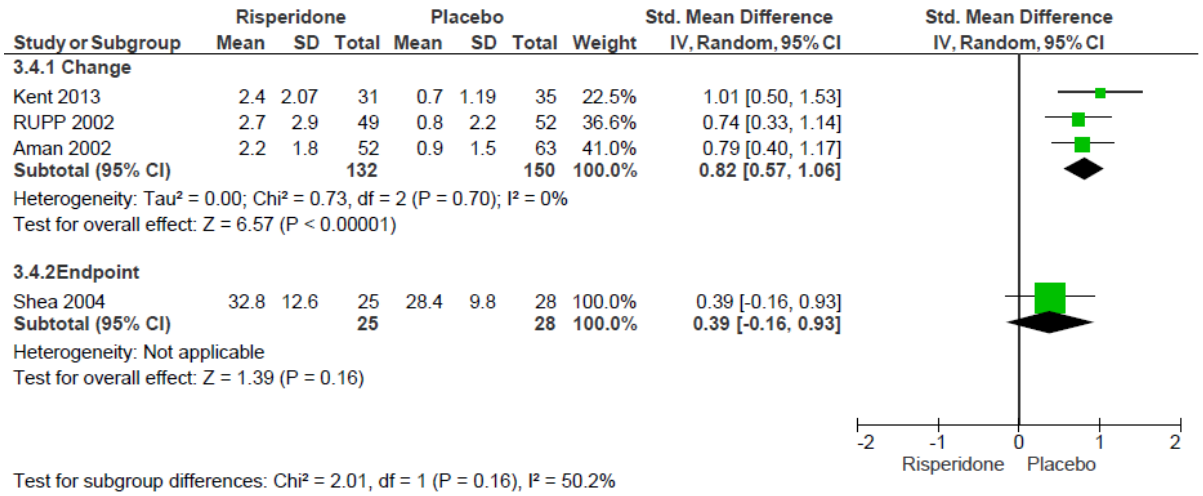


Figure 136: Adverse events (weight gain, non-occurrence) – post-treatment

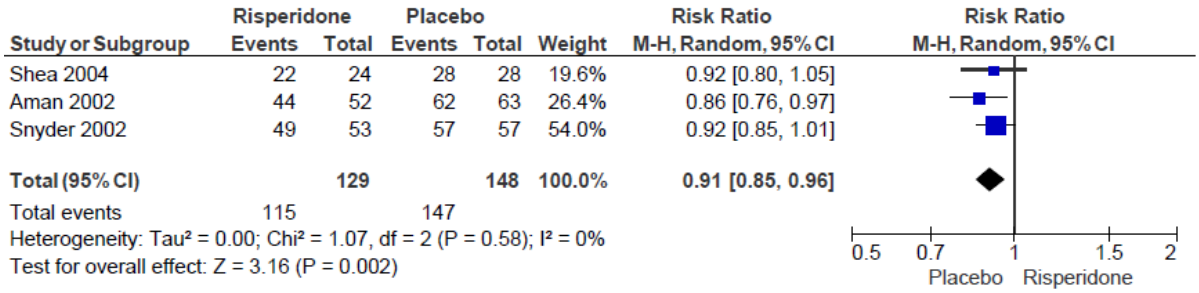


Figure 137: Adverse events (somnolence/sedation, non-occurrence) – post-treatment

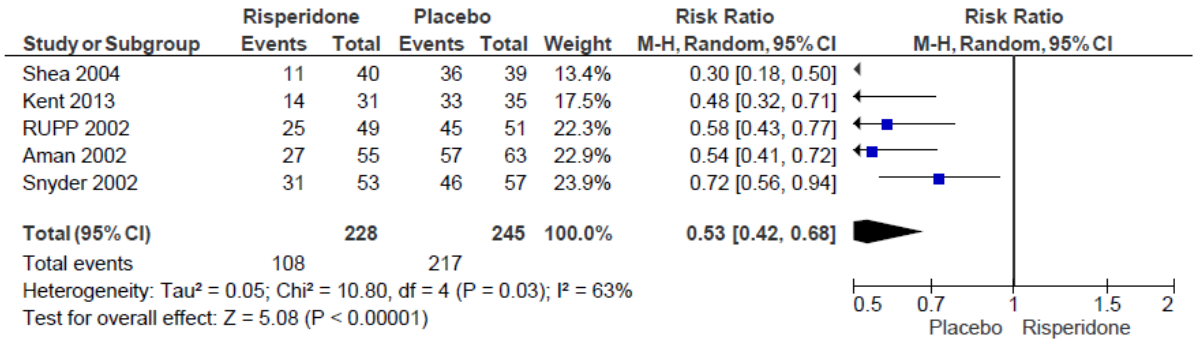


Figure 138: Adverse events (seizure, non-occurrence) – post-treatment

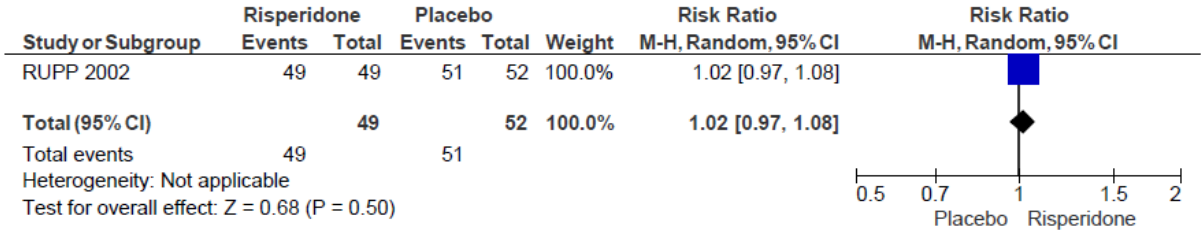


Figure 139: Adverse events (discontinuation due to adverse events, non-occurrence) – post-treatment

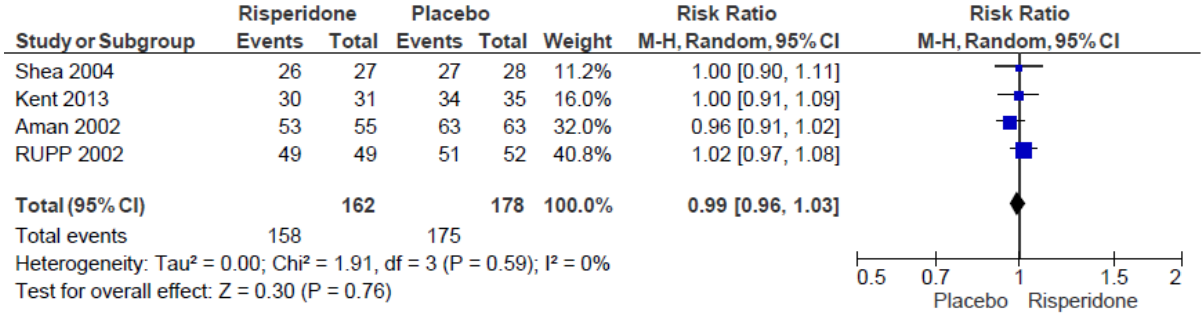
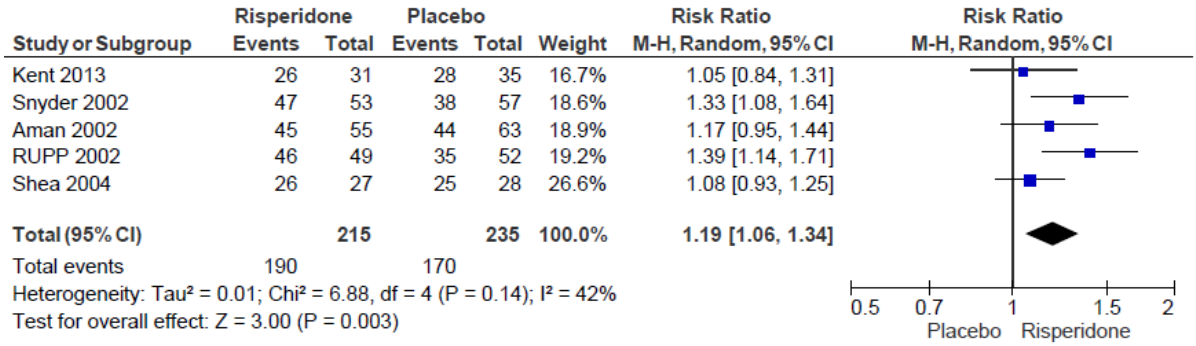
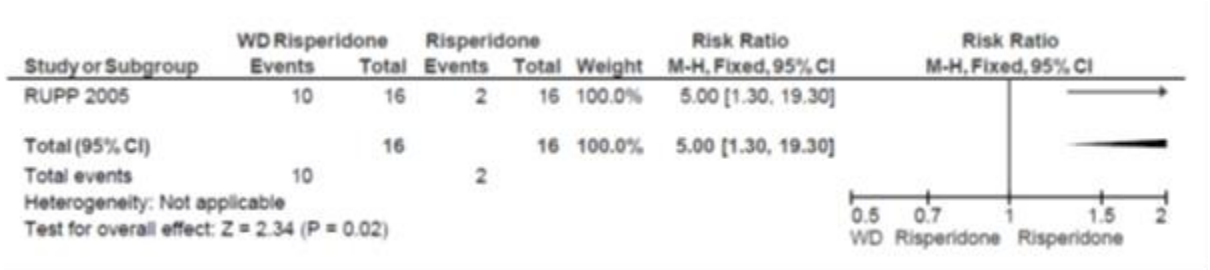


Figure 140: Adverse events (discontinuation due to other reasons, non-occurrence) – post-treatment



A.10.2 Withdrawal of risperidone versus continuation of risperidone in children and young people

Figure 141: Targeted behaviour that challenges (relapse) – post-treatment



A.10.3 Aripiprazole versus placebo in children and young people

Figure 142: Targeted behaviour that challenges (severity) – post-treatment

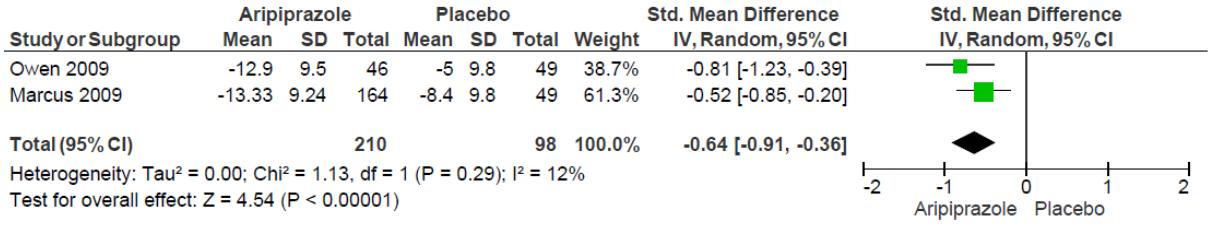


Figure 143: Targeted behaviour that challenges (severity, non-improvement) – post-treatment

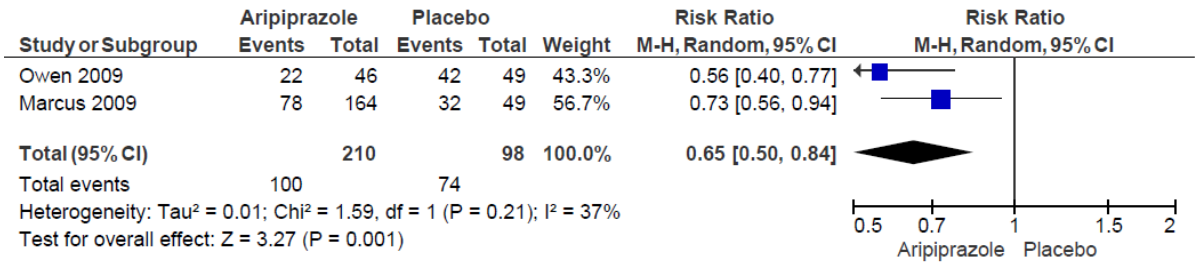


Figure 144: Quality of life – post-treatment

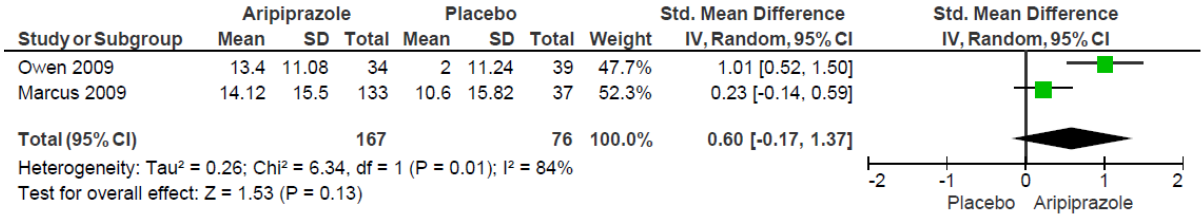


Figure 145: Adverse events (elevated prolactin, non-occurrence) – post-treatment

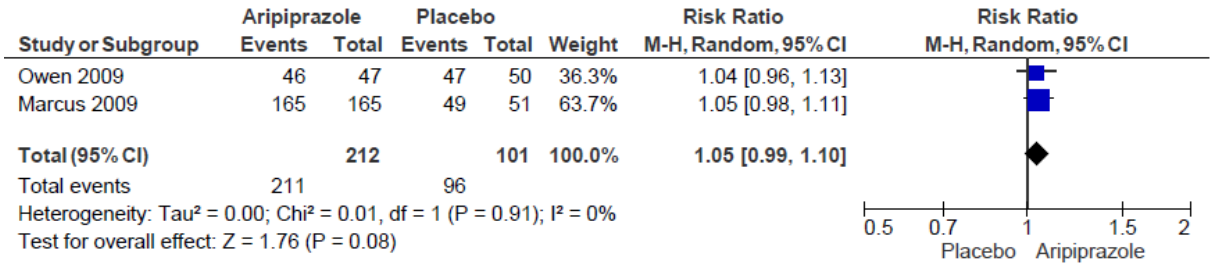


Figure 146: Adverse events (weight gain; kg) – post-treatment

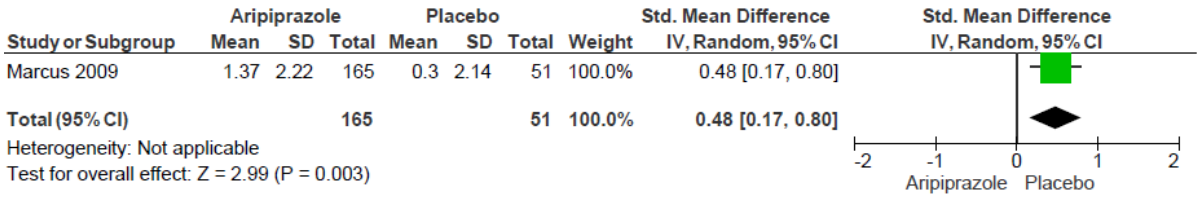


Figure 147: Adverse events (weight gain; clinically significant, non-occurrence) – post-treatment

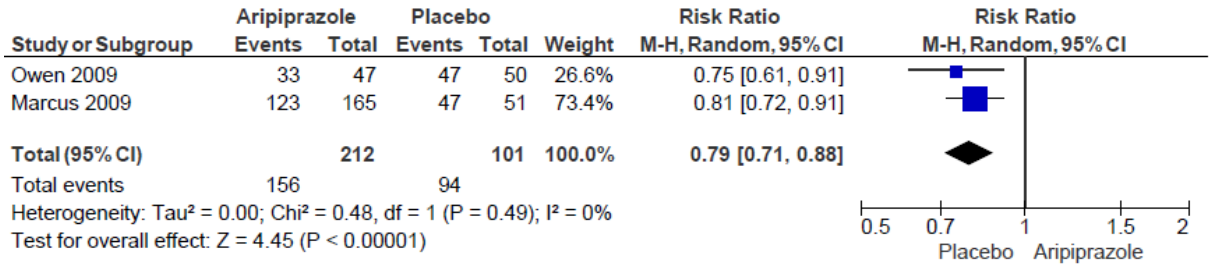


Figure 148: Adverse events (sedation, non-occurrence) – post-treatment

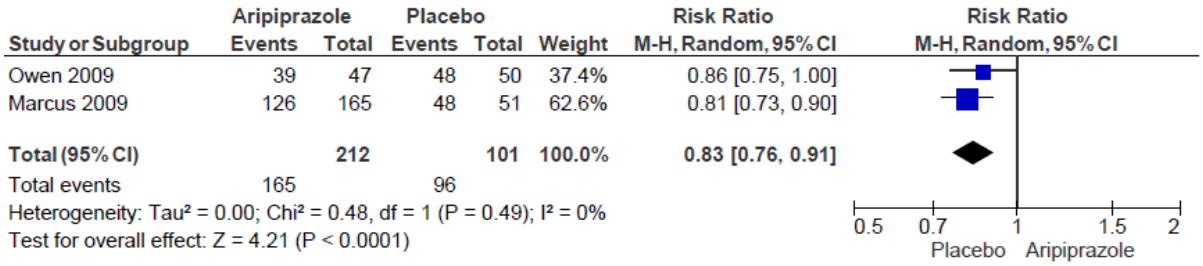


Figure 149: Adverse events (seizure, non-occurrence) – post-treatment

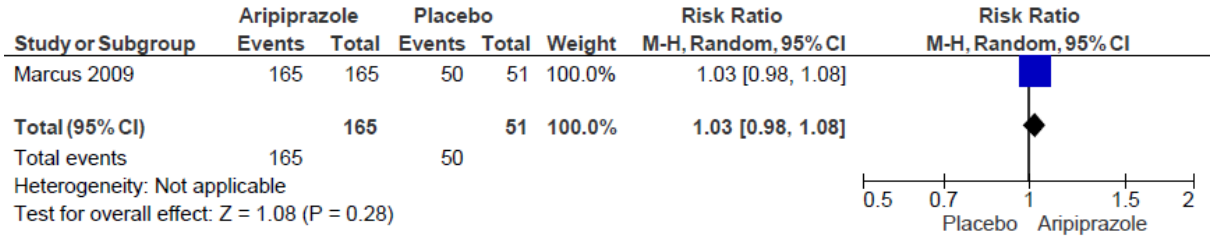


Figure 150: Adverse events (discontinuation due to adverse events, non-occurrence) – post-treatment

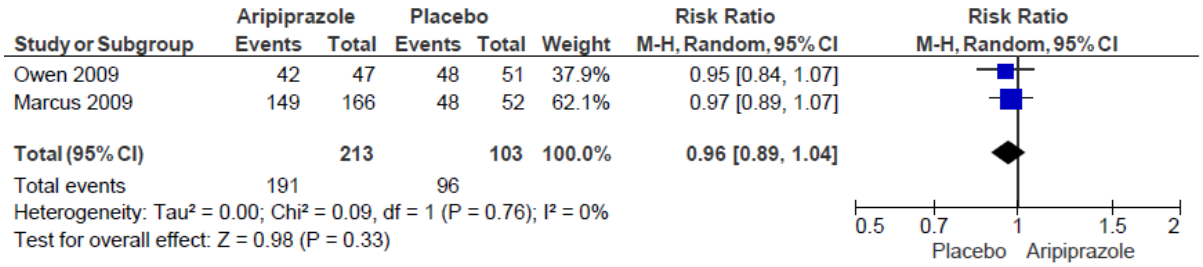
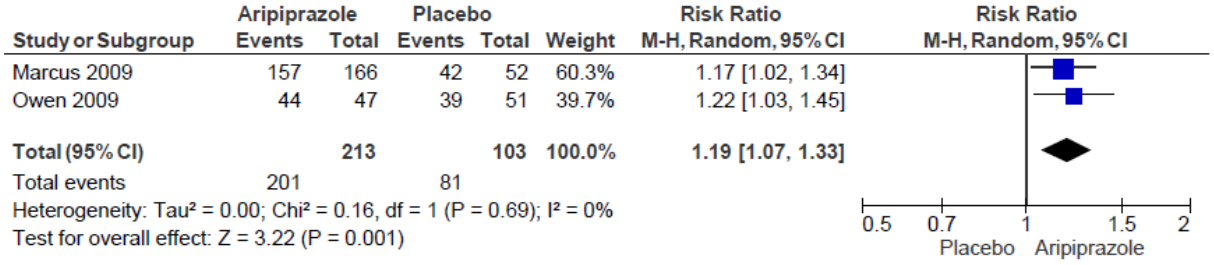


Figure 151: Adverse events (discontinuation due to other reasons, non-occurrence) – post-treatment



A.10.4 Aripiprazole versus risperidone in children and young people

Figure 152: Targeted behaviour that challenges (severity) – post-treatment

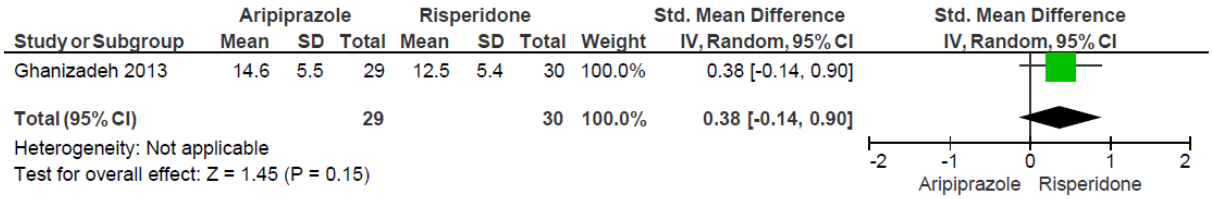


Figure 153: Adverse events (drowsiness, non-occurrence) – post-treatment

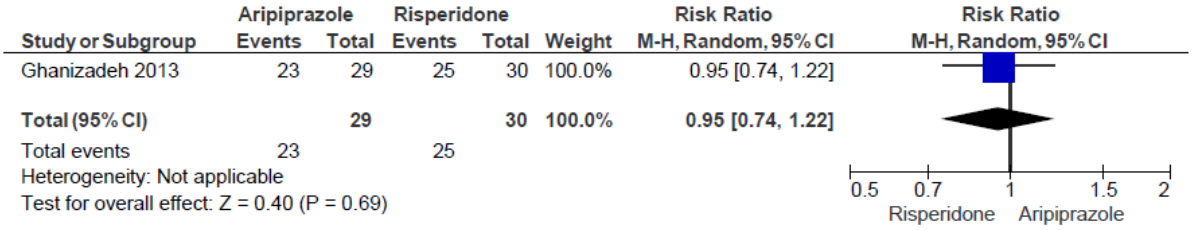


Figure 154: Adverse events (seizure, non-occurrence) – post-treatment

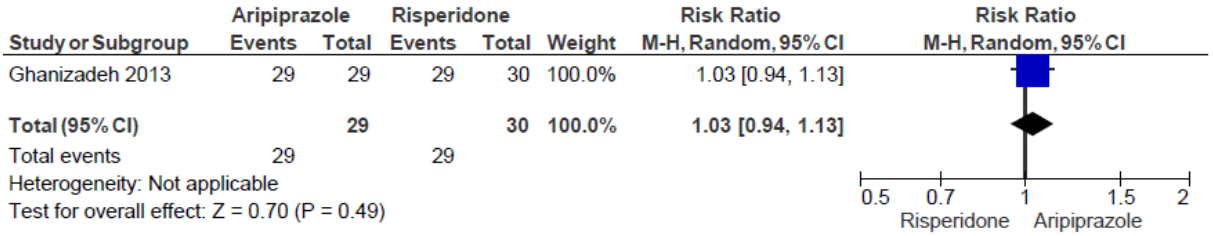


Figure 155: Adverse events (discontinuation due to adverse events, non-occurrence) – post-treatment

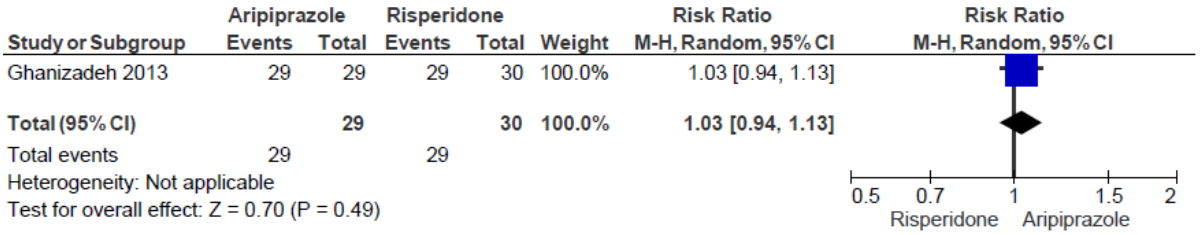
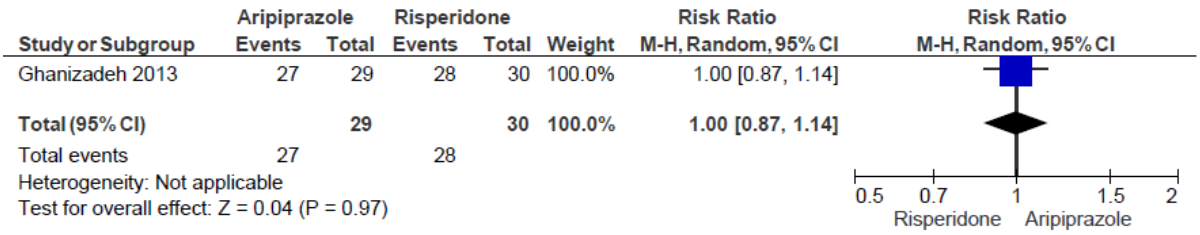


Figure 156: Adverse events (discontinuation due to other reasons, non-occurrence) – post-treatment



A.10.5 Withdrawal of aripiprazole versus continuation of aripiprazole in children and young people

Figure 157: Targeted behaviour that challenges (relapse) – post-treatment

A.10.6 Olanzapine versus haloperidol in children and young people

Figure 158: Targeted behaviour that challenges (severity) – post-treatment

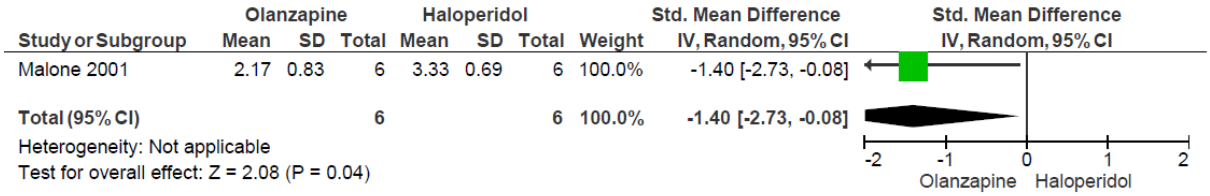


Figure 159: Adverse events (drowsiness, non-occurrence) – post-treatment

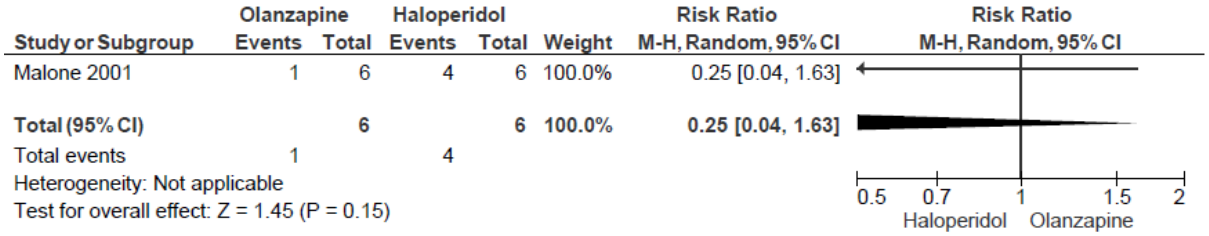


Figure 160: Adverse events (weight gain; kg) – post-treatment

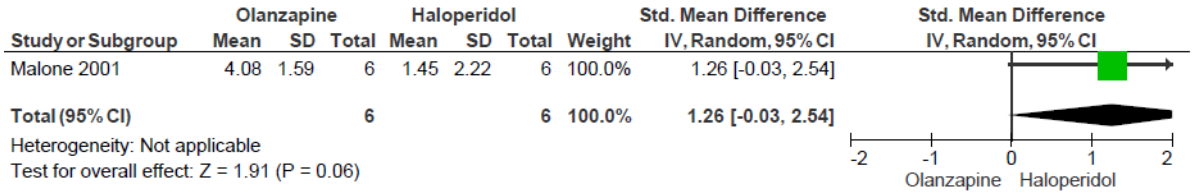
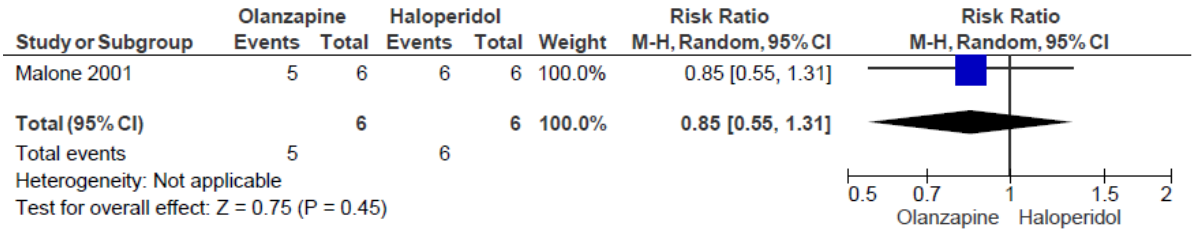


Figure 161: Adverse events (weight gain) – post-treatment



A.10.7 Topiramate (plus risperidone) versus placebo (plus risperidone) in children and young people

Figure 162: Targeted behaviour that challenges (severity) – post-treatment

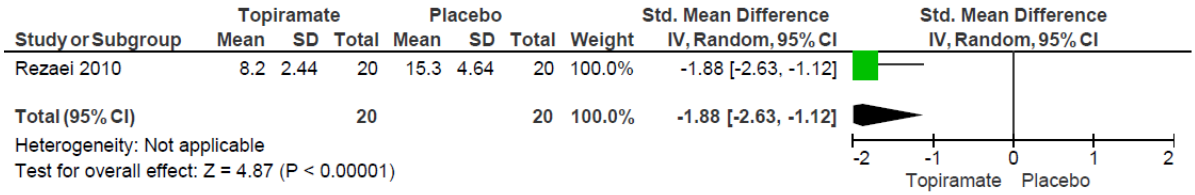


Figure 163: Adverse events (sedation, non-occurrence) – post-treatment

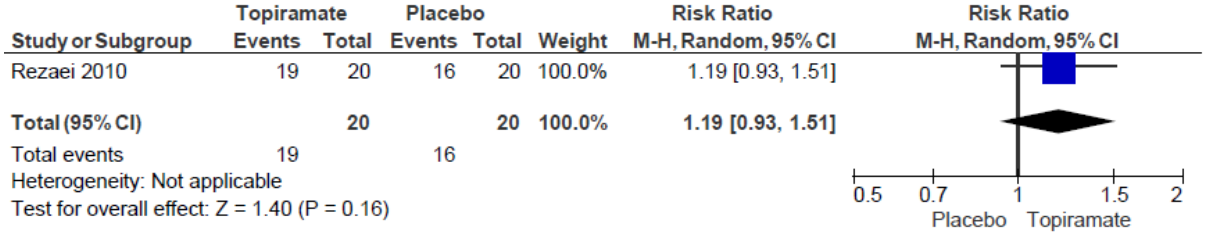
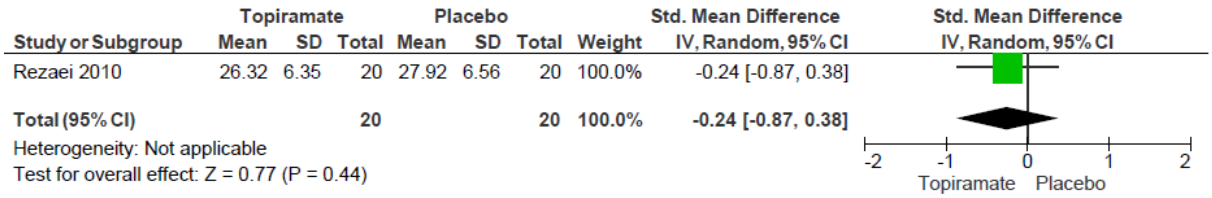


Figure 164: Adverse events (weight at endpoint) – post-treatment



A.10.8 Valproate versus placebo in children and young people

Figure 165: Targeted behaviour that challenges (severity) – post-treatment

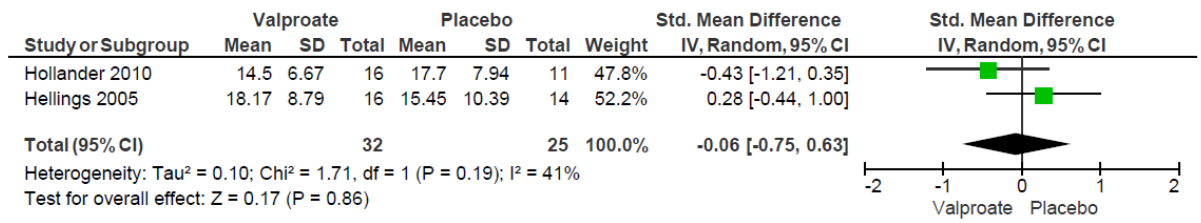


Figure 166: Targeted behaviour that challenges (severity, non-improvement) – post-treatment

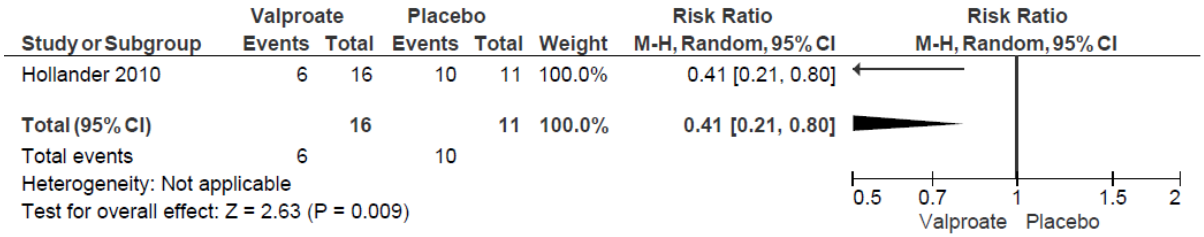


Figure 167: Targeted behaviour that challenges (severity) – post-treatment

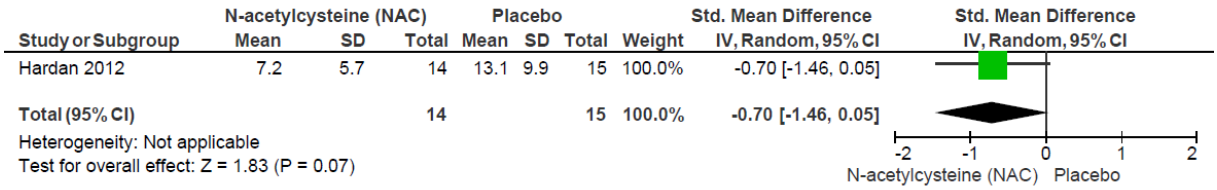


Figure 168: Adverse events (weight; kg) – post-treatment

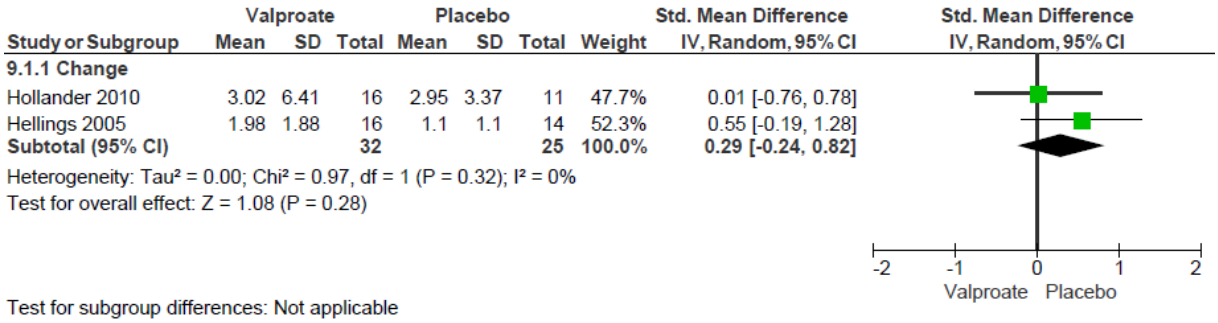


Figure 169: Adverse events (weight gain, non-occurrence) – post-treatment

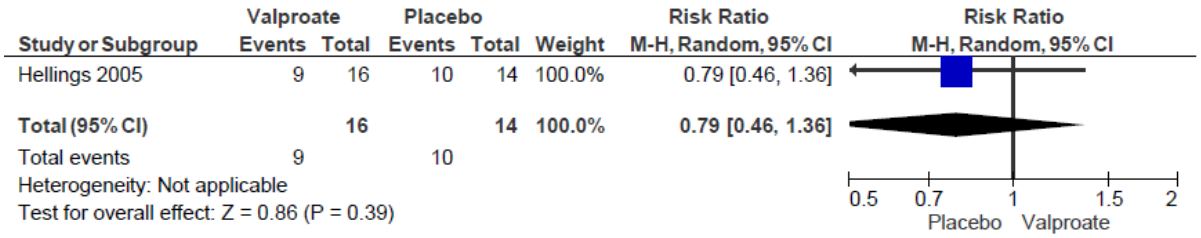


Figure 170: Adverse events (somnolence/sedation, non-occurrence) – post-treatment

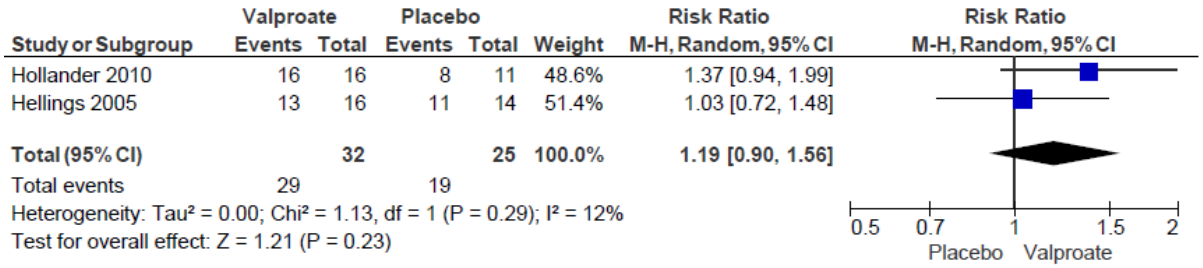


Figure 171: Adverse events (discontinuation due to adverse events, non-occurrence) – post-treatment

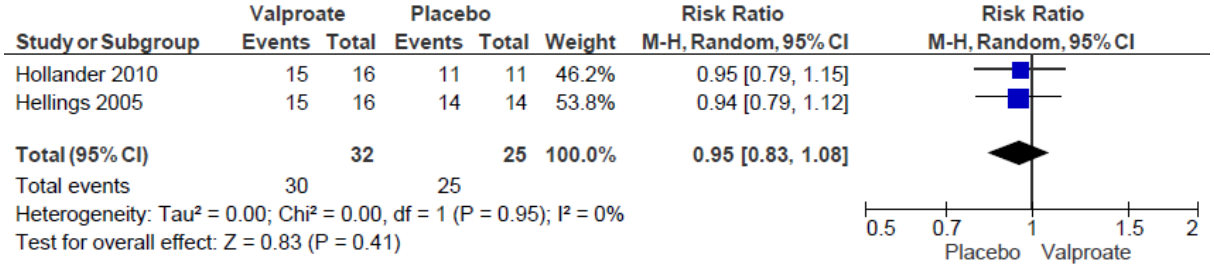
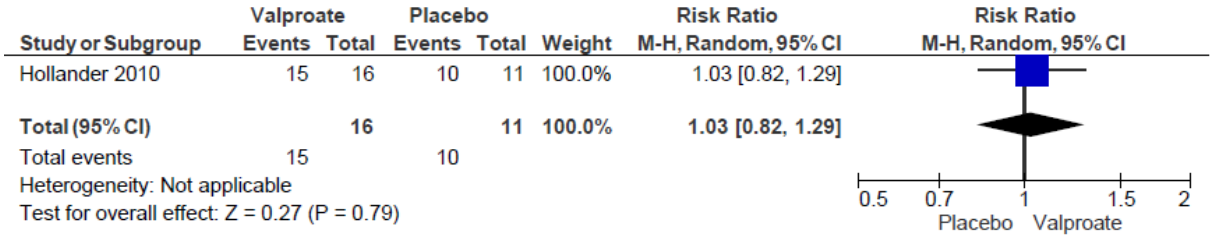


Figure 172: Adverse events (discontinuation due to other reasons, non-occurrence) – post-treatment



A.10.9 N-acetylcysteine versus placebo in children and young people

Figure 173: Targeted behaviour that challenges (severity) – post-treatment

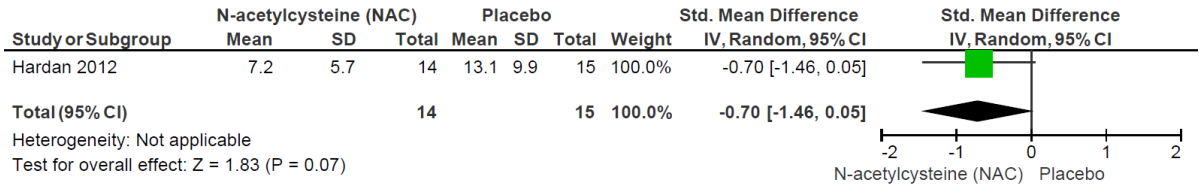


Figure 174: Adverse events (discontinuation due to adverse events, non-occurrence) – post-treatment

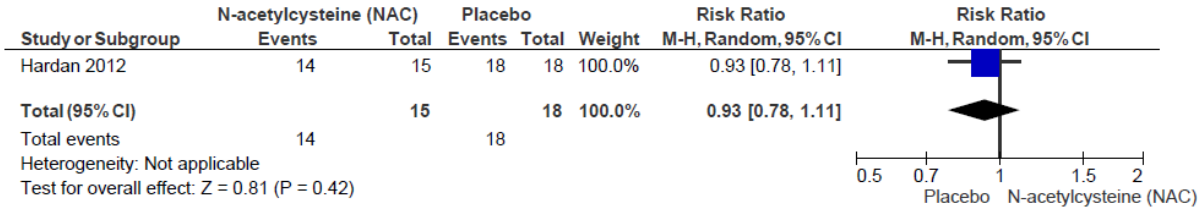
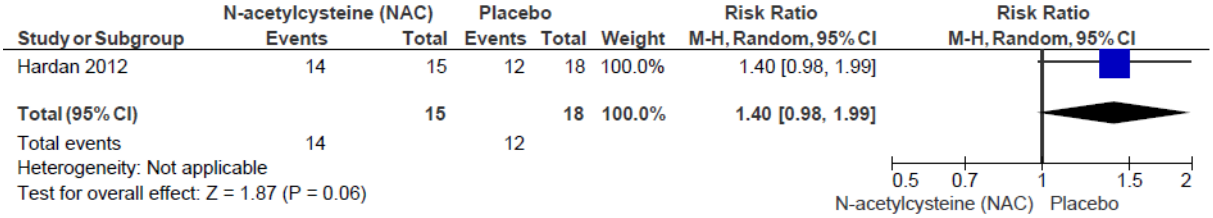


Figure 175: Adverse events (discontinuation due to other reasons, non-occurrence) – post-treatment



A.10.10 Ginkgo biloba (plus risperidone) versus placebo (plus risperidone) in children and young people

Figure 176: Targeted behaviour that challenges (severity) – post-treatment

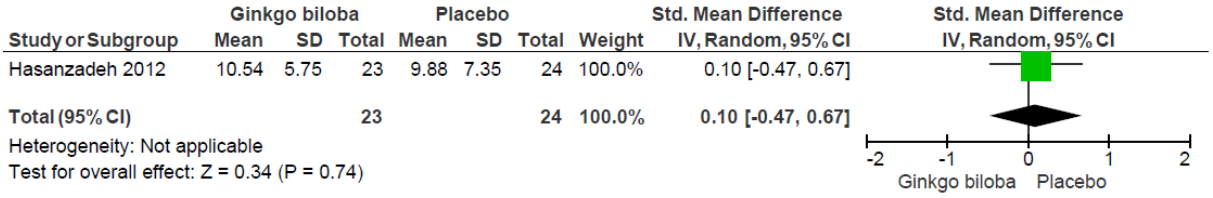
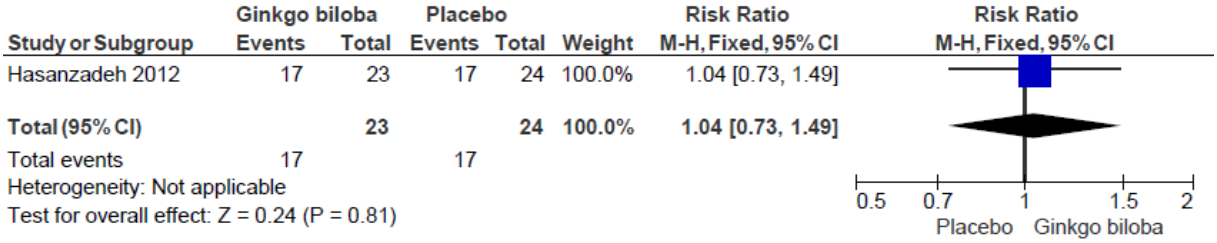


Figure 177: Adverse events (drowsiness, non-occurrence) – post-treatment



A.10.11 Omega-3 versus placebo in children and young people

Figure 178: Targeted behaviour that challenges (severity) – post-treatment

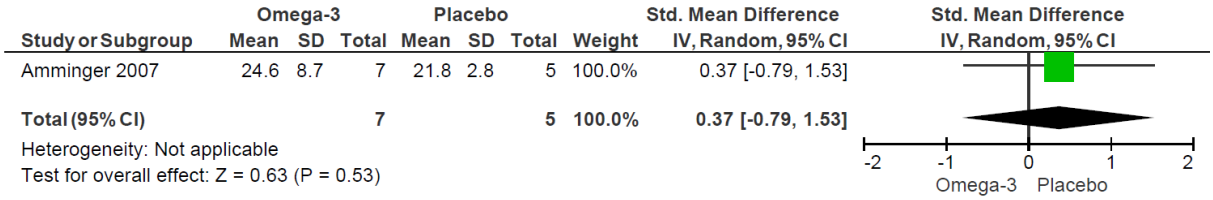
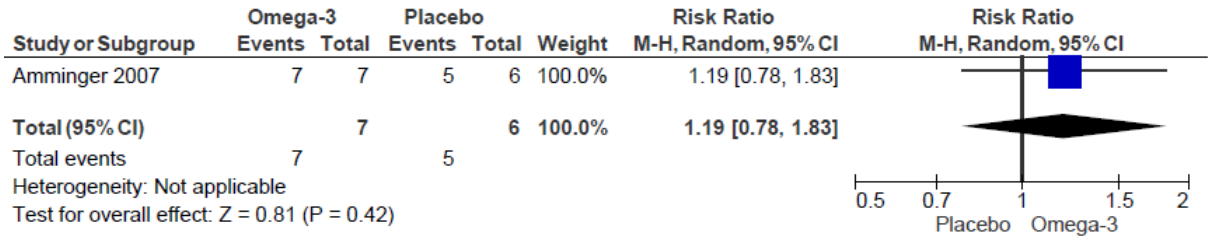
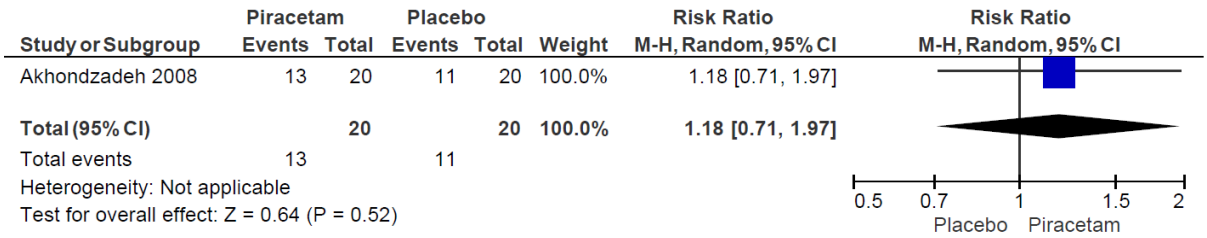


Figure 179: Adverse events (discontinuation due to adverse events, non-occurrence) – post-treatment



A.10.12 Piracetam (plus risperidone) vs placebo (plus risperidone) be used in children and young people

Figure 180: Adverse events (drowsiness, non-occurrence) – post-treatment



A.10.13 Risperidone versus placebo in adults

Figure 181: Targeted behaviour that challenges (severity) – post-treatment

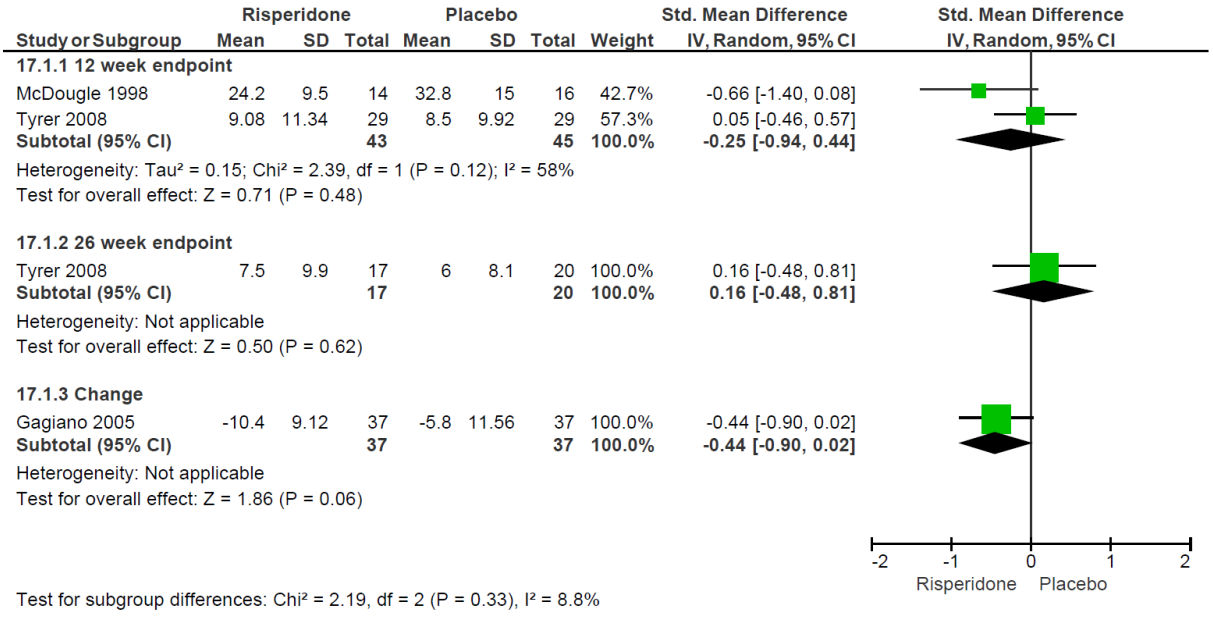


Figure 182: Quality of life – post-treatment

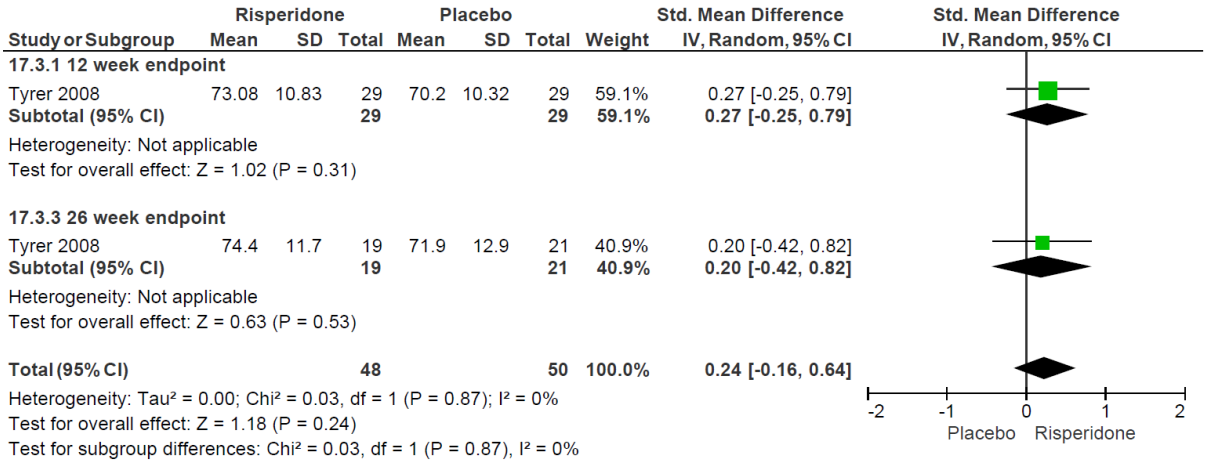


Figure 183: Adaptive functioning (social) – post-treatment

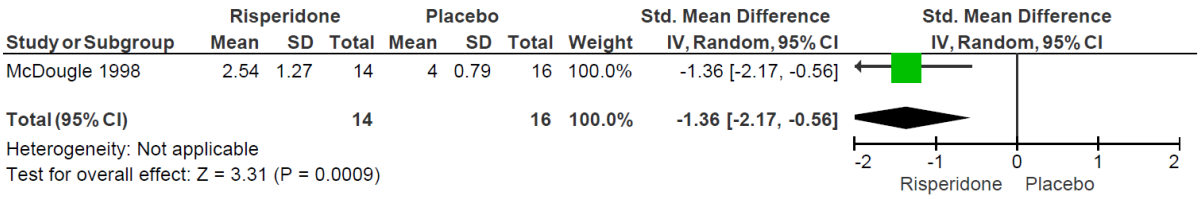


Figure 184: Adverse events (weight gain, non-occurrence) – post-treatment

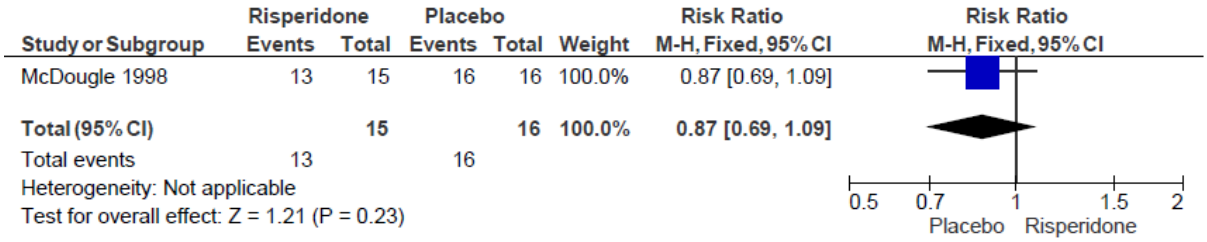


Figure 185: Adverse events (somnolence/sedation, non-occurrence) – post-treatment

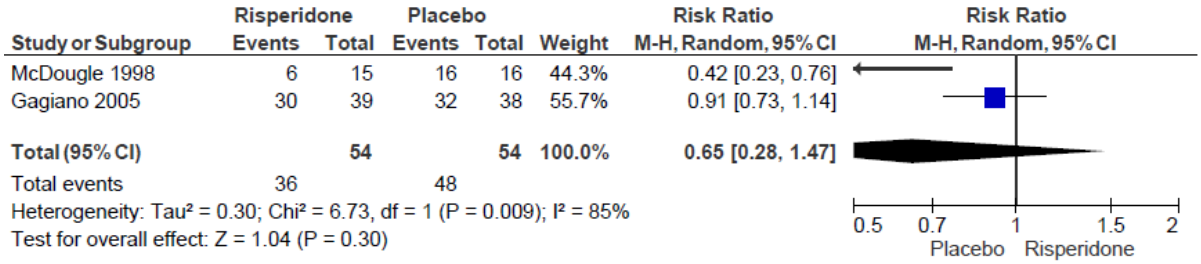


Figure 186: Adverse events (discontinuation due to adverse events, non-occurrence) – post-treatment

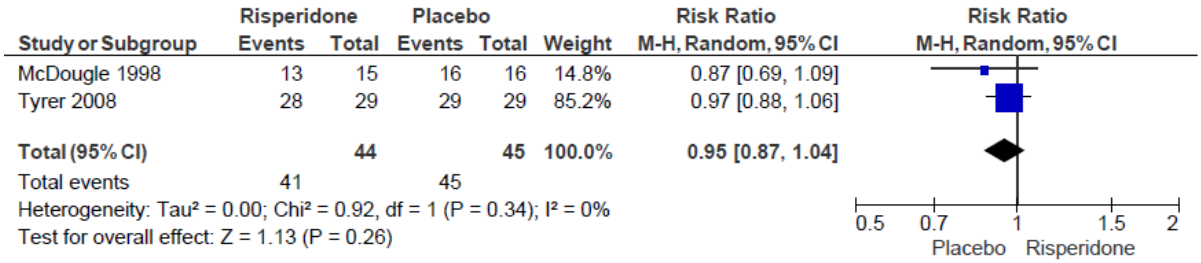
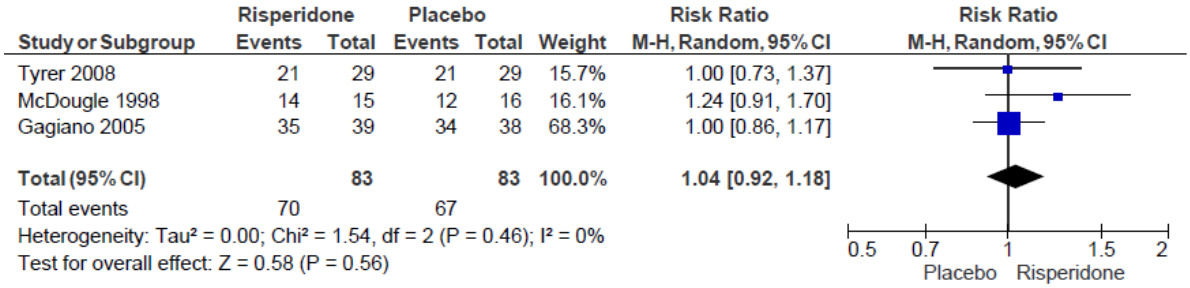


Figure 187: Adverse events (discontinuation due to other reasons, non-occurrence) – post-treatment



A.10.14 Haloperidol versus placebo in adults

Figure 188: Targeted behaviour that challenges (severity) – post treatment

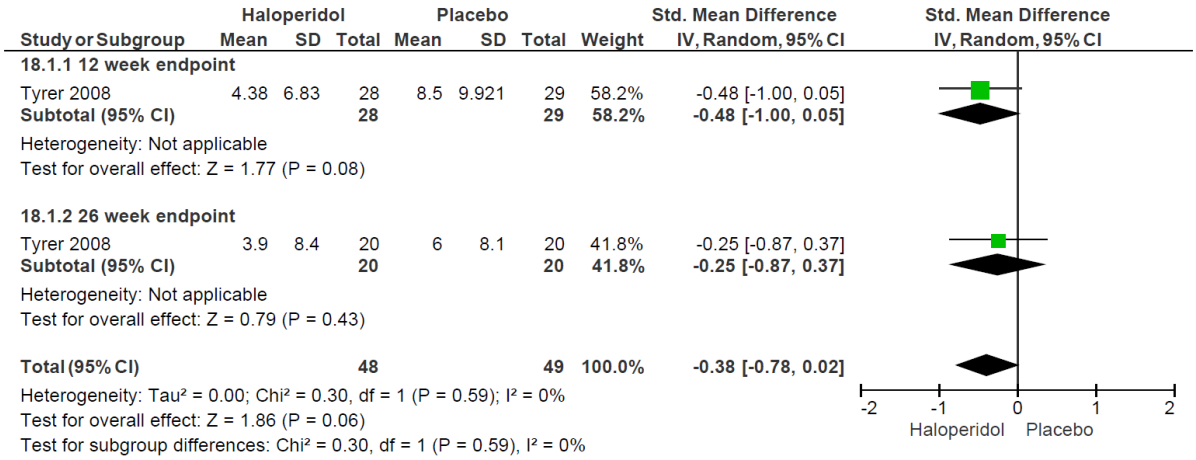


Figure 189: Quality of life – post-treatment

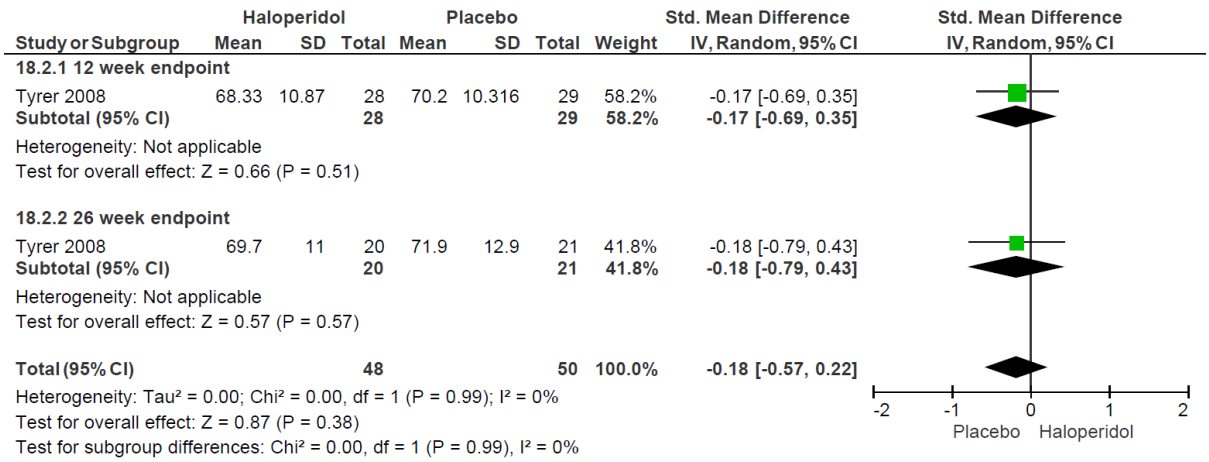


Figure 190: Adverse events (seizure, non-occurrence) – post-treatment

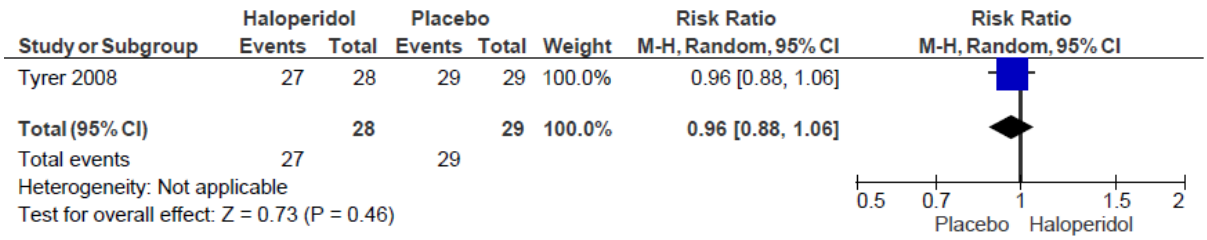


Figure 191: Adverse events (discontinuation due to adverse events, non-occurrence) – post-treatment

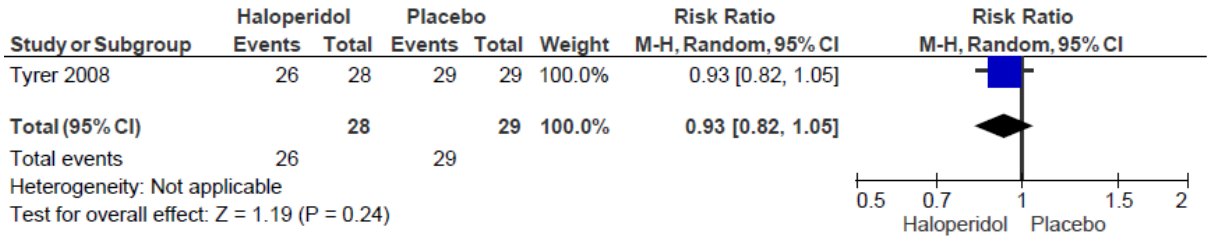
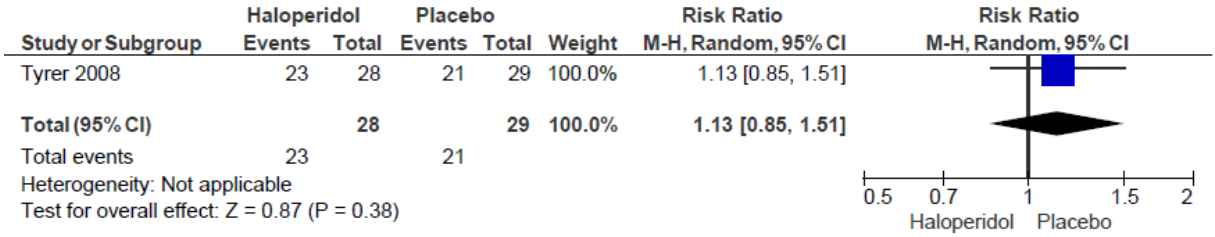


Figure 192: Adverse events (discontinuation due to other reasons, non-occurrence) – post-treatment



A.10.15 Risperidone versus haloperidol in adults

Figure 193: Targeted behaviour that challenges (severity) – post treatment

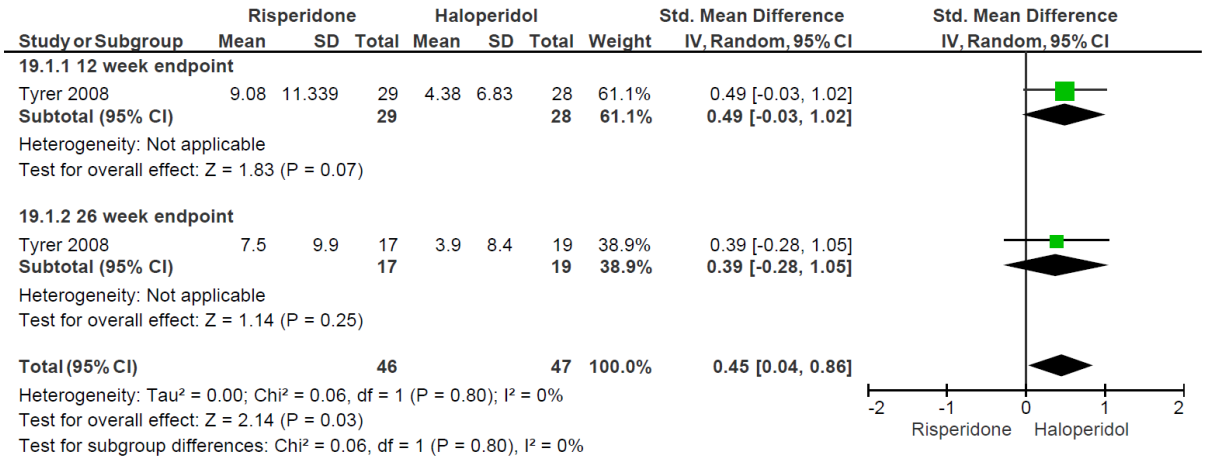


Figure 194: Quality of life – post-treatment

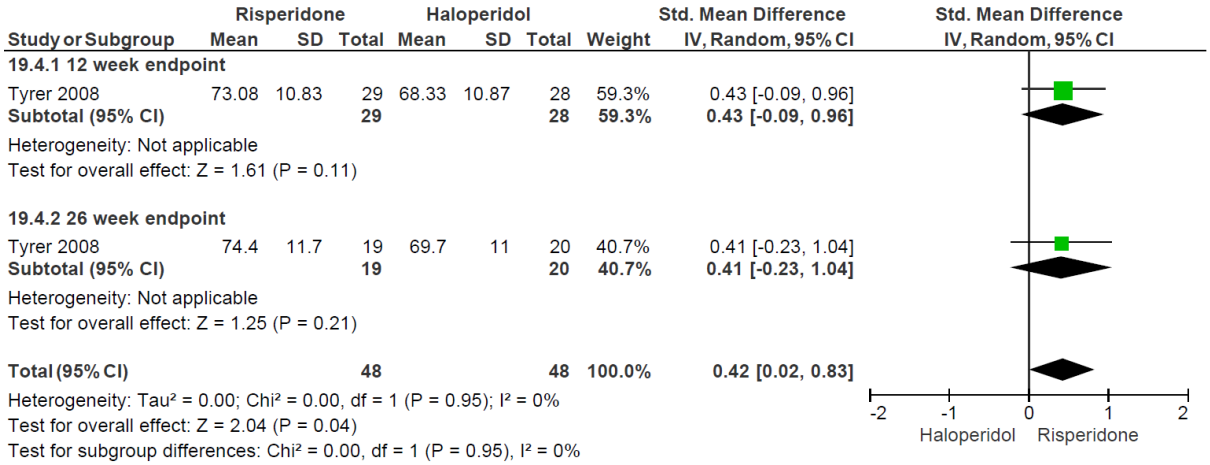


Figure 195: Adverse events (seizure, non-occurrence) – post-treatment

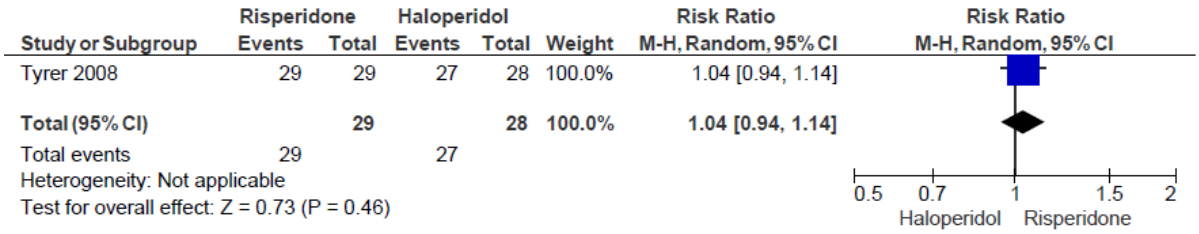


Figure 196: Adverse events (discontinuation due to adverse events, non-occurrence) – post-treatment

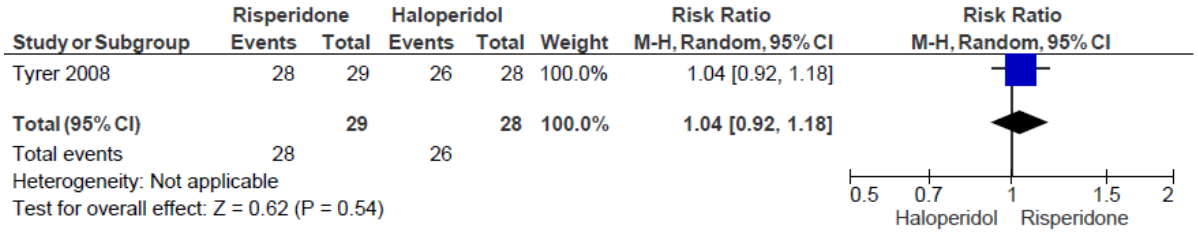
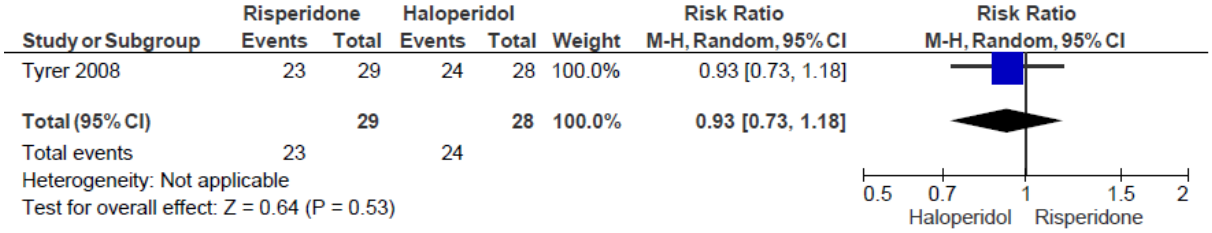


Figure 197: Adverse events (discontinuation due to other reasons, non-occurrence) – post-treatment



A.10.16 Olanzapine versus risperidone in adults

Figure 198: Targeted behaviour that challenges (severity) – post treatment

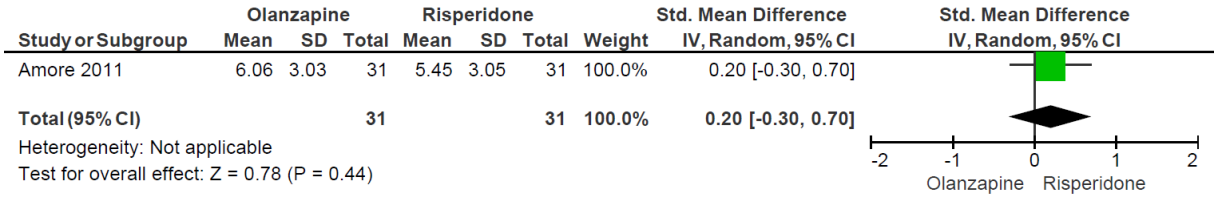


Figure 199: Adverse events (elevated prolactin) – post treatment

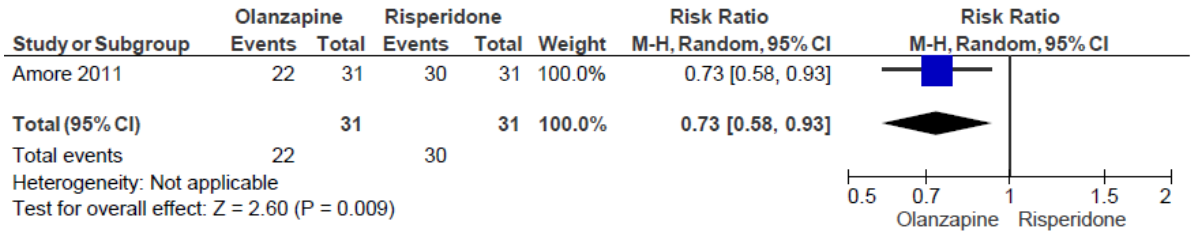


Figure 200: Adverse events (weight gain, non-occurrence) – post-treatment

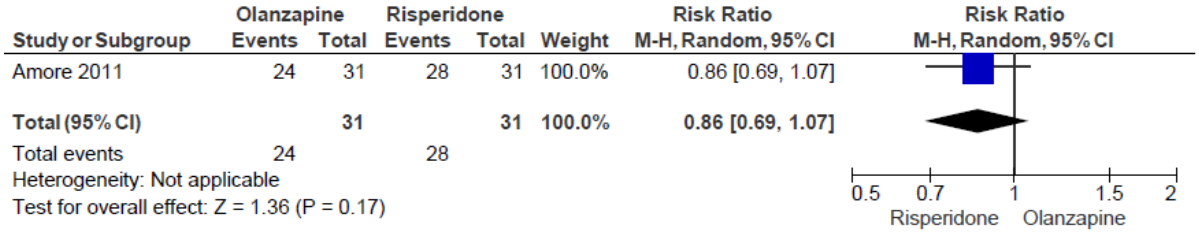
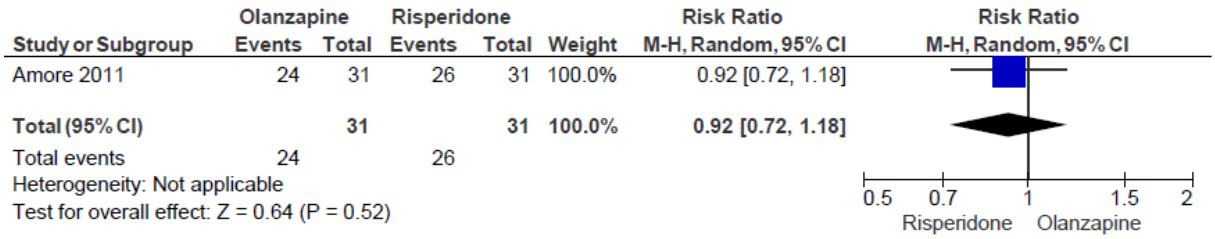


Figure 201: Adverse events (sedation, non-occurrence) – post-treatment

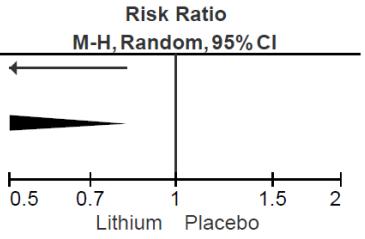


A.10.17 Lithium versus placebo in adults

Figure 202: Targeted behaviour that challenges (frequency, non-improvement) – post treatment

Study or Subgroup	Lithium Events	Lithium Total	Placebo Events	Placebo Total	Weight	Risk Ratio M-H, Random, 95% CI
Craft 1987	6	22	14	20	100.0%	0.39 [0.19, 0.82]
Total (95% CI)		**22**		**20**	**100.0%**	**0.39 [0.19, 0.82]**
Total events	6		14			

Heterogeneity: Not applicable
Test for overall effect: Z = 2.50 (P = 0.01)



A.10.18 Withdrawal of zuclopenthixol versus continuation of zuclopenthixol in adults

Figure 203: Targeted behaviour that challenges (relapse) – post-treatment

Study or Subgroup	WDZuclopenthixol Events	WDZuclopenthixol Total	Zuclopenthixol Events	Zuclopenthixol Total	Weight	Risk Ratio M-H, Random, 95% CI
Haessler 2007	19	20	12	19	100.0%	1.50 [1.05, 2.15]
Total (95% CI)		**20**		**19**	**100.0%**	**1.50 [1.05, 2.15]**
Total events	19		12			

Heterogeneity: Not applicable
Test for overall effect: Z = 2.24 (P = 0.03)

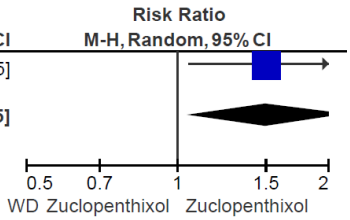


Figure 204: Targeted behaviour that challenges (severity, continuous outcome) – post-treatment

Study or Subgroup	WDZuclopenthixol Mean	WDZuclopenthixol SD	WDZuclopenthixol Total	Zuclopenthixol Mean	Zuclopenthixol SD	Zuclopenthixol Total	Weight	Std. Mean Difference IV, Random, 95% CI
22.2.1 Endpoint								
Haessler 2007	-31.8	6.5	20	-35.6	6.8	19	31.8%	0.56 [-0.08, 1.20]
Subtotal (95% CI)			**20**			**19**	**31.8%**	**0.56 [-0.08, 1.20]**
Heterogeneity: Not applicable								
Test for overall effect: Z = 1.71 (P = 0.09)								
22.2.2 Change								
Izmeth 1988	0.4	1.3	40	-0.3	0.7	45	68.2%	0.68 [0.24, 1.11]
Subtotal (95% CI)			**40**			**45**	**68.2%**	**0.68 [0.24, 1.11]**
Heterogeneity: Not applicable								
Test for overall effect: Z = 3.02 (P = 0.003)								
Total (95% CI)			**60**			**64**	**100.0%**	**0.64 [0.28, 1.00]**

Heterogeneity: Tau² = 0.00; Chi² = 0.09, df = 1 (P = 0.77); I² = 0%
Test for overall effect: Z = 3.46 (P = 0.0005)
Test for subgroup differences: Chi² = 0.09, df = 1 (P = 0.77), I² = 0%

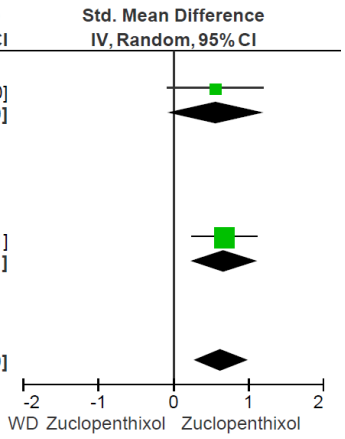


Figure 205: Targeted behaviour that challenges (severity, categorical outcome) – post-treatment

Study or Subgroup	WDZuclopenthixol Events	WDZuclopenthixol Total	Zuclopenthixol Events	Zuclopenthixol Total	Weight	Risk Ratio M-H, Random, 95% CI
Singh 1992	7	19	5	24	100.0%	1.77 [0.67, 4.70]
Total (95% CI)		**19**		**24**	**100.0%**	**1.77 [0.67, 4.70]**
Total events	7		5			

Heterogeneity: Not applicable
Test for overall effect: Z = 1.14 (P = 0.25)

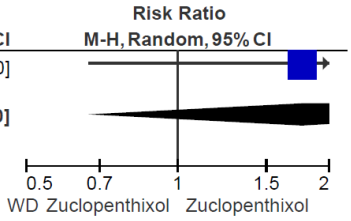


Figure 206: Adverse events (weight gain; kg) – post-treatment

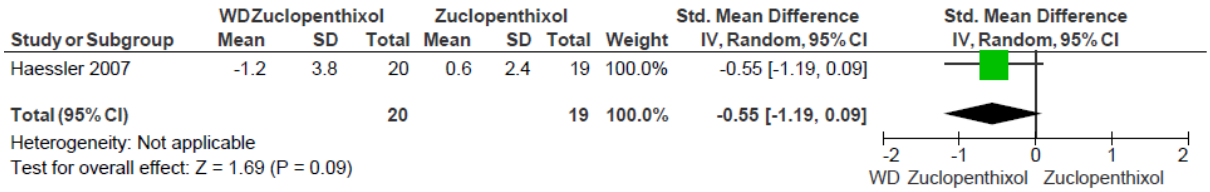


Figure 207: Adverse events: (drowsiness, non-occurrence) – post-treatment

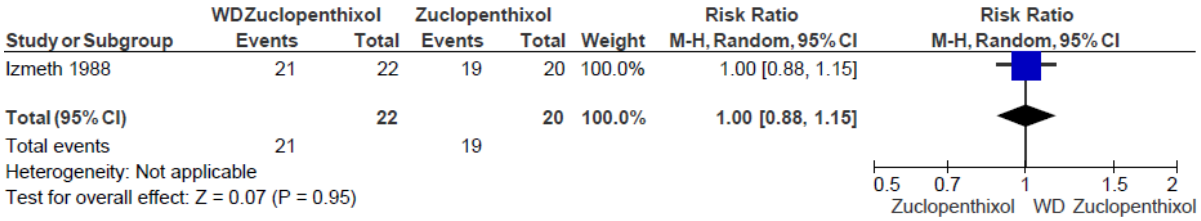


Figure 208: Adverse events (discontinuation due to adverse events, non-occurrence) – post-treatment

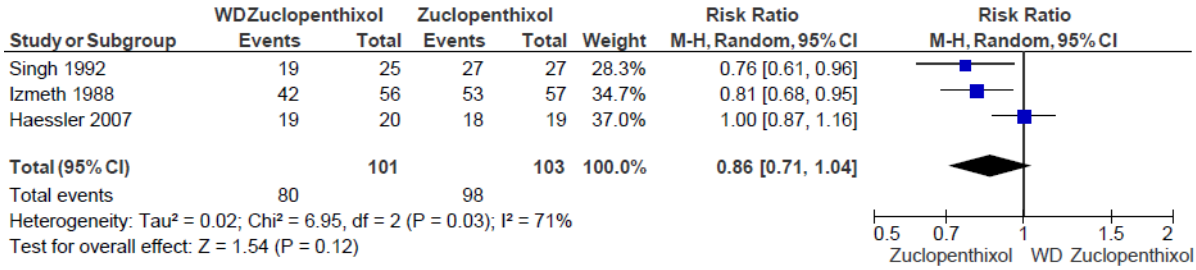
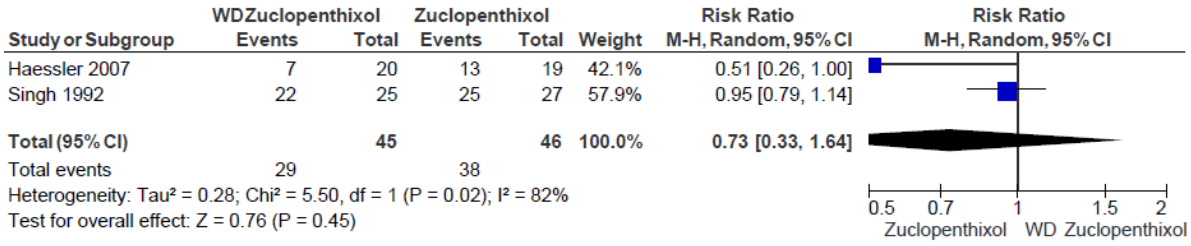
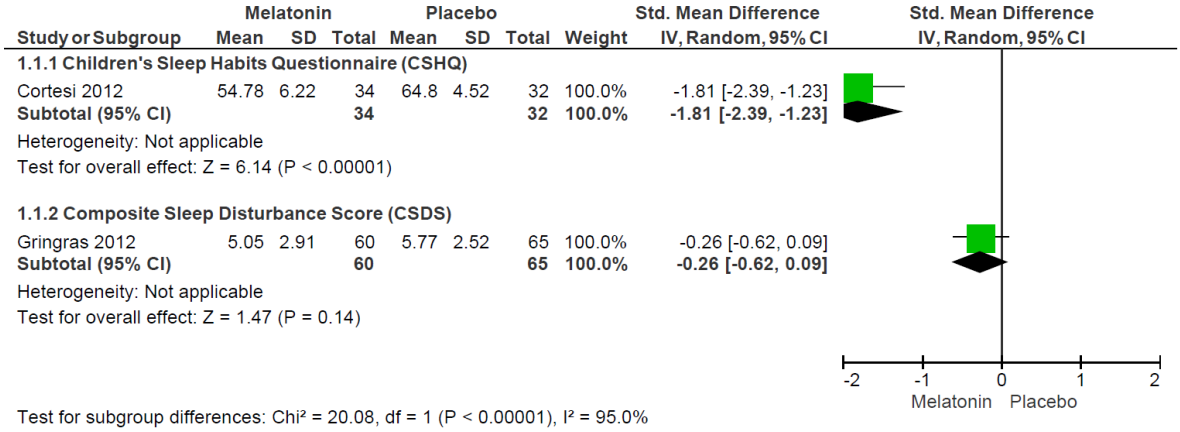


Figure 209: Adverse events (discontinuation due to other reasons, non-occurrence) – post-treatment



A.10.19 Melatonin versus placebo in children and young people

Figure 210: Targeted behaviour that challenges (global problem sleep behaviour) – post-treatment



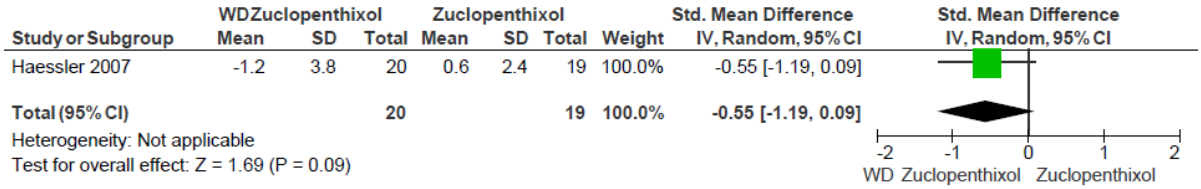


Figure 211: Targeted behaviour that challenges (global problem sleep behaviour, non-improvement) – post-treatment

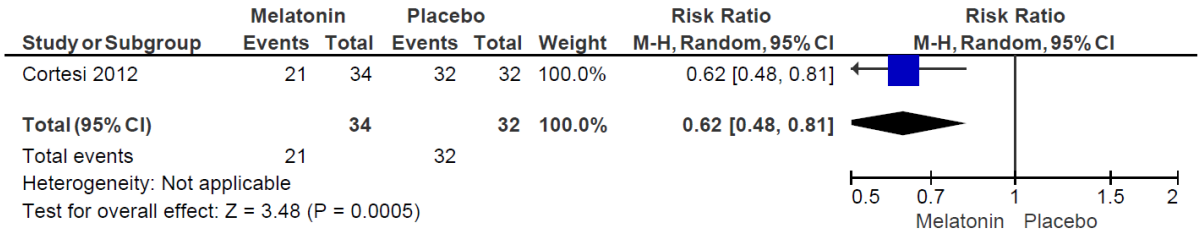


Figure 212: Targeted behaviour that challenges (positive sleep behaviour, actigraph) – post-treatment

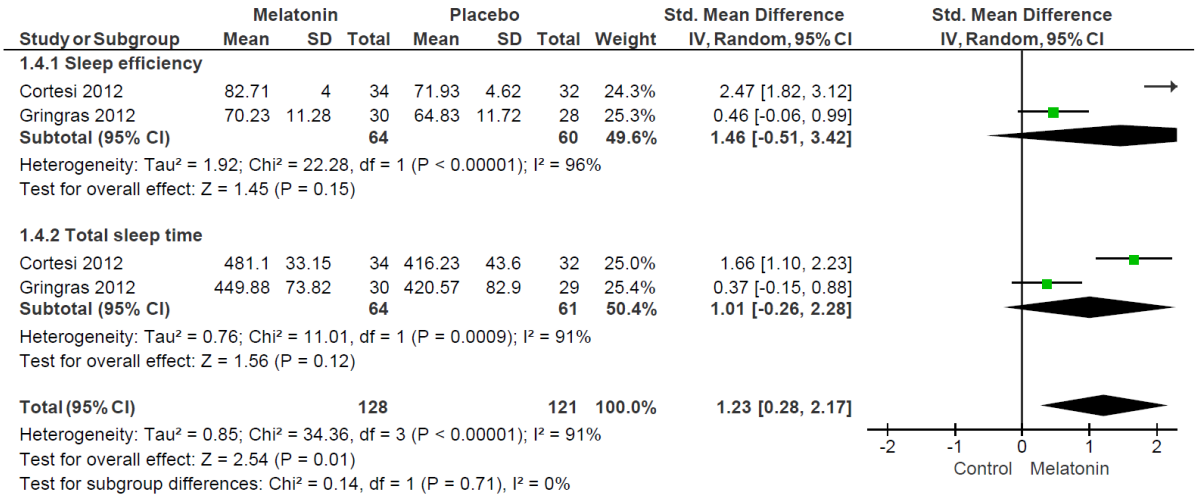


Figure 213: Targeted behaviour that challenges (problem sleep behaviour, actigraph) – post-treatment

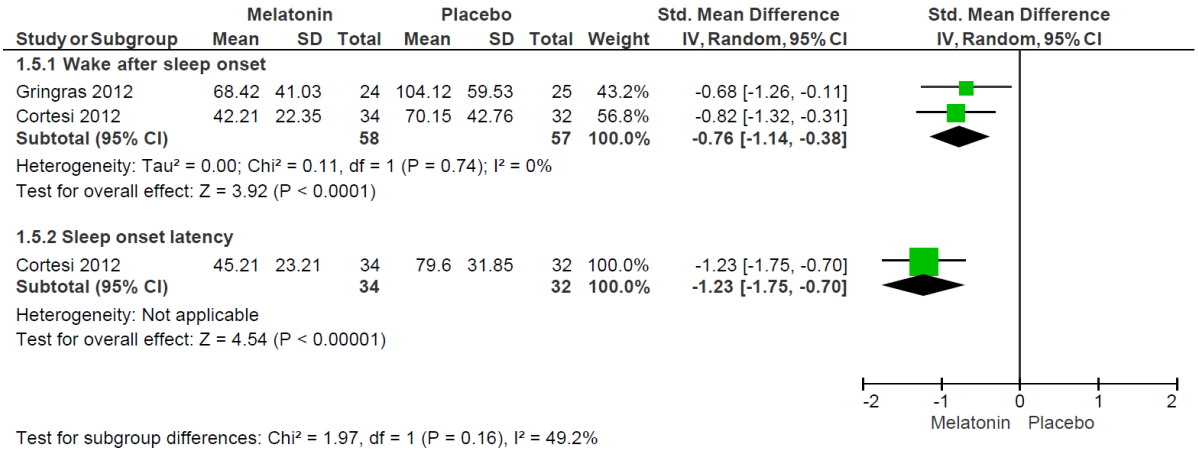


Figure 214: Targeted behaviour that challenges (positive sleep behaviour, sleep diary) – post-treatment

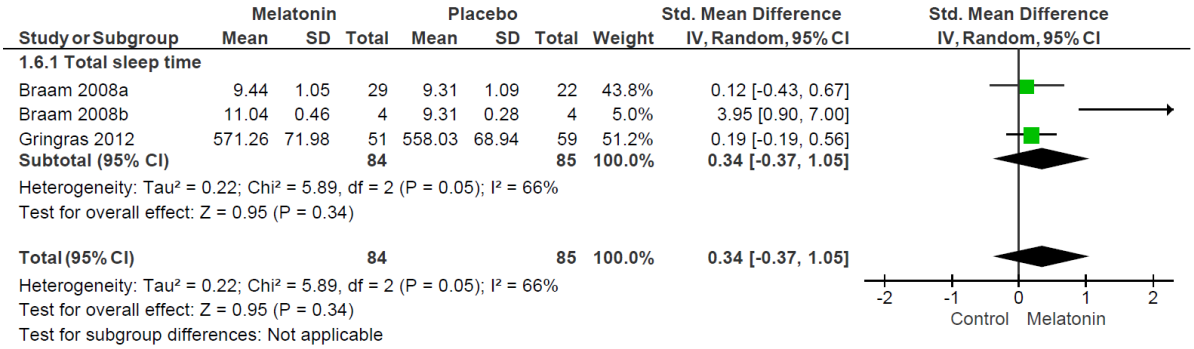


Figure 215: Targeted behaviour that challenges (problem sleep behaviour, sleep diary) – post-treatment

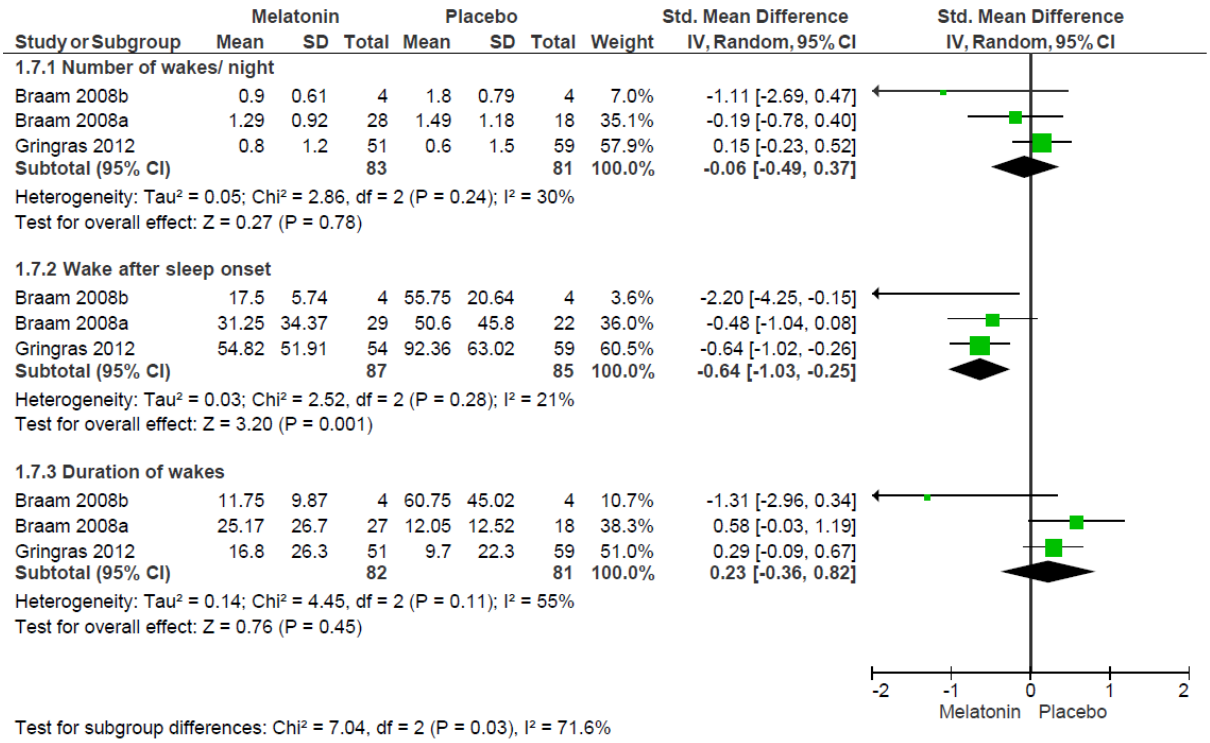


Figure 216: Adverse events (seizure, non-occurrence) – post-treatment

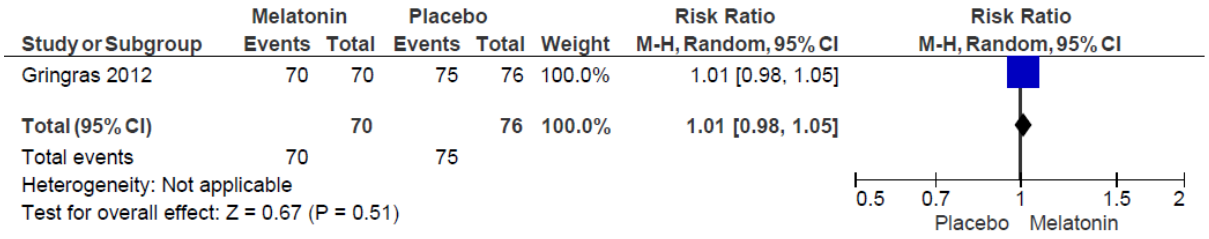


Figure 217: Adverse events (somnolence/sedation, non-occurrence) – post-treatment

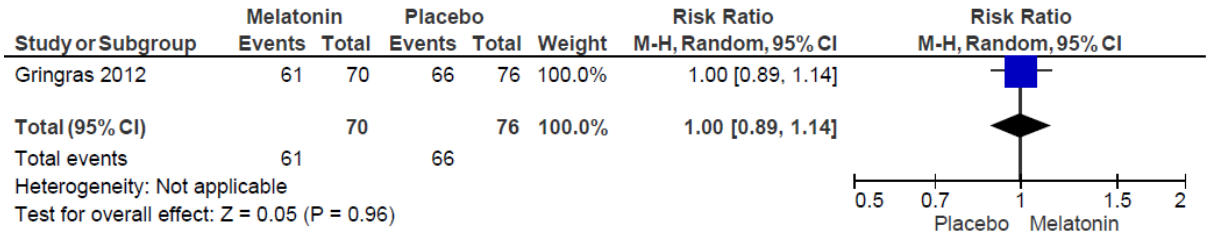


Figure 218: Adverse events (discontinuation due to adverse events, non-occurrence) – post-treatment

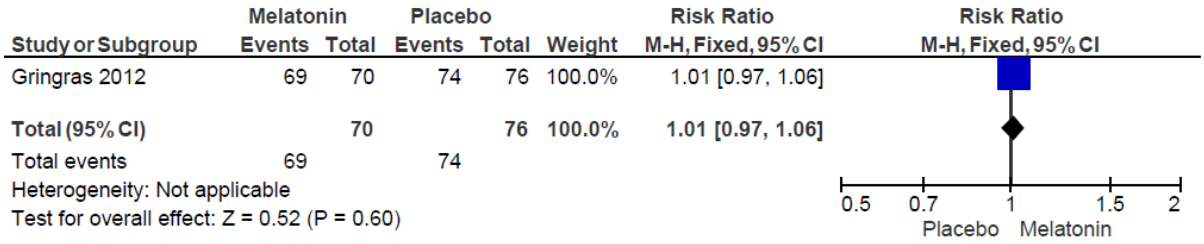
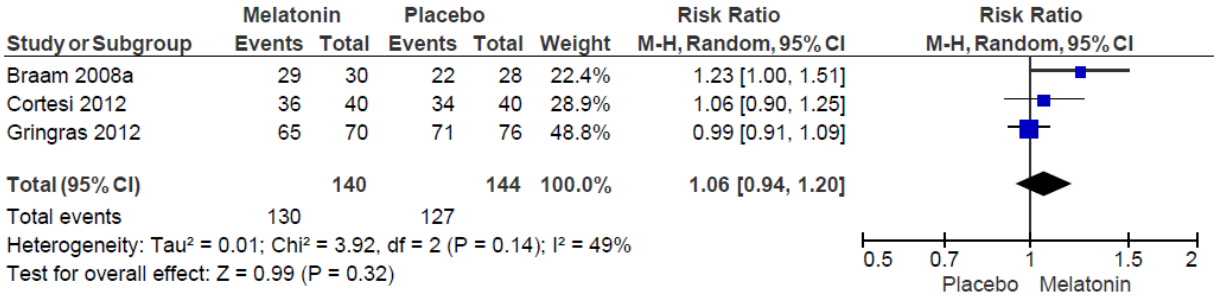


Figure 219: Adverse events (discontinuation due to other reasons, non-occurrence) – post-treatment



A.10.20 Melatonin versus CBT in children and young people

Figure 220: Targeted behaviour that challenges (global problem sleep behaviour) – post-treatment

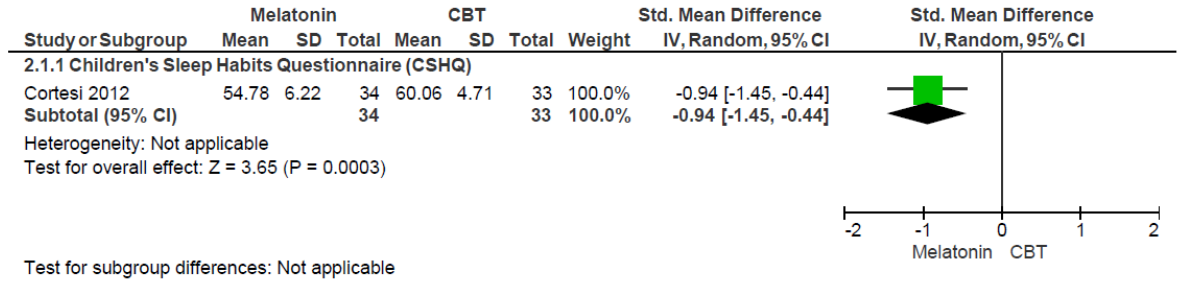


Figure 221: Targeted behaviour that challenges (global problem sleep behaviour, non-improvement) – post-treatment

Figure 222: Targeted behaviour that challenges (problem sleep behaviour, actigraph) – post-treatment

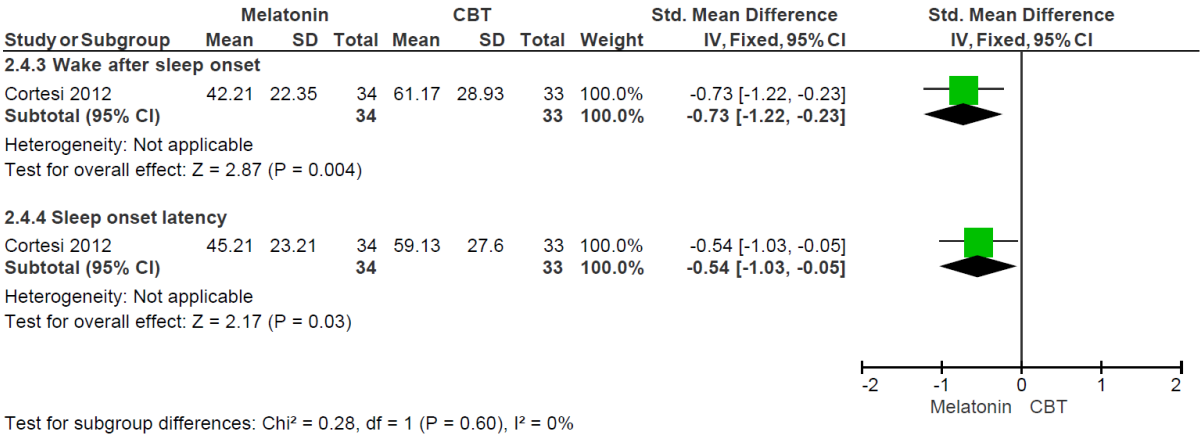


Figure 223: Targeted behaviour that challenges (positive sleep behaviour, actigraph) – post-treatment

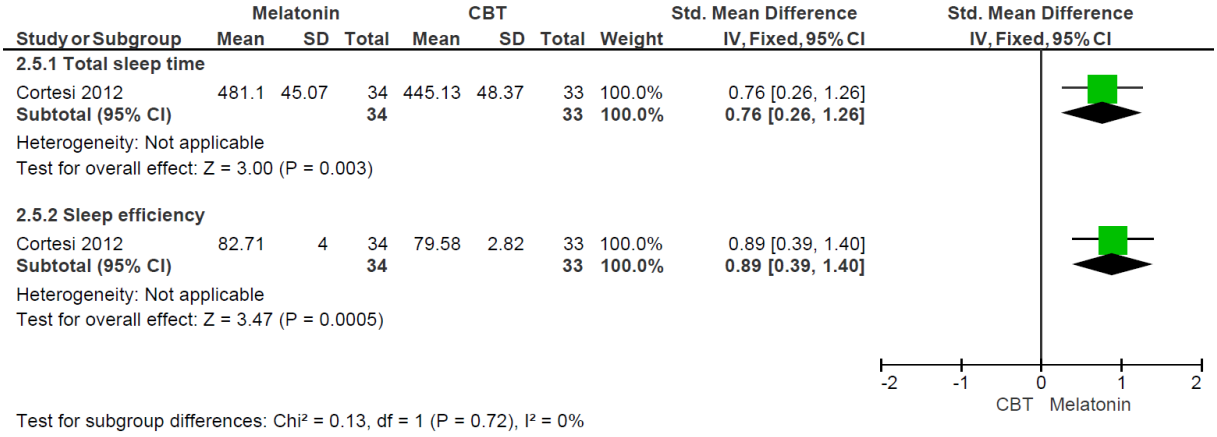
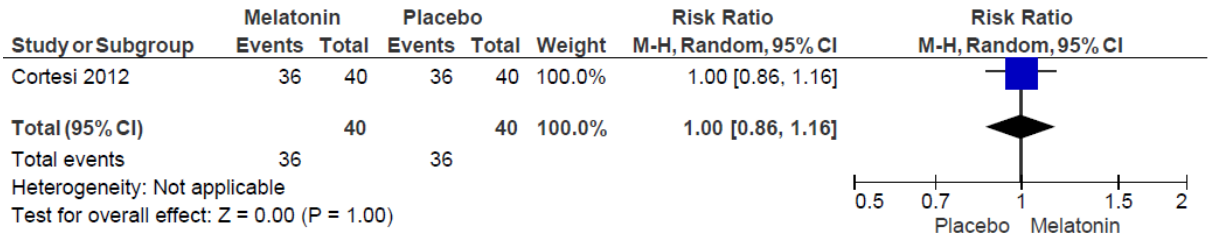


Figure 224: Adverse events (discontinuation due to other reasons, non-occurrence) – post-treatment



A.11 Interventions aimed at improving the health and well-being of carers of people with learning disabilities

A.11.1 Cognitive behavioural interventions for family carers versus any control

Figure 225: Carer health and well-being (depression) – post-treatment

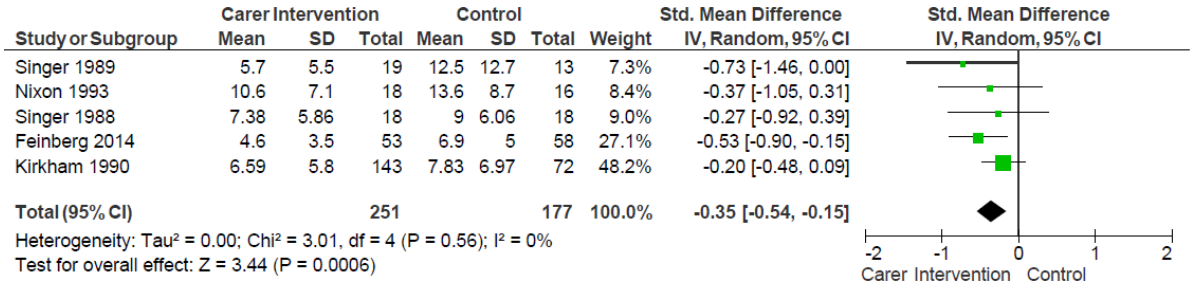


Figure 226: Carer health and well-being (depression) – follow-up

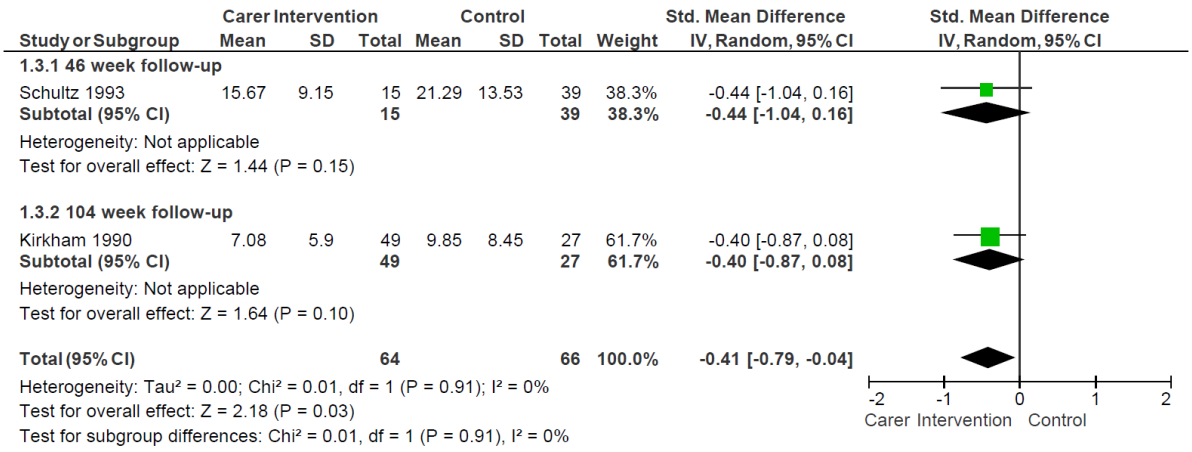


Figure 227: Carer health and well-being (clinically depressed) – follow-up

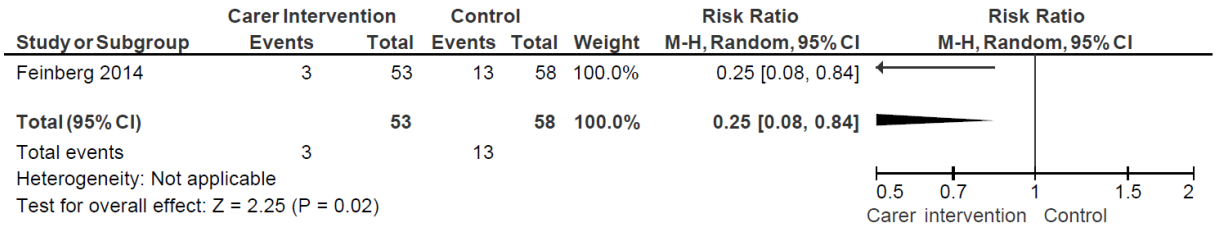


Figure 228: Carer health and well-being (anxiety, trait) – post-treatment

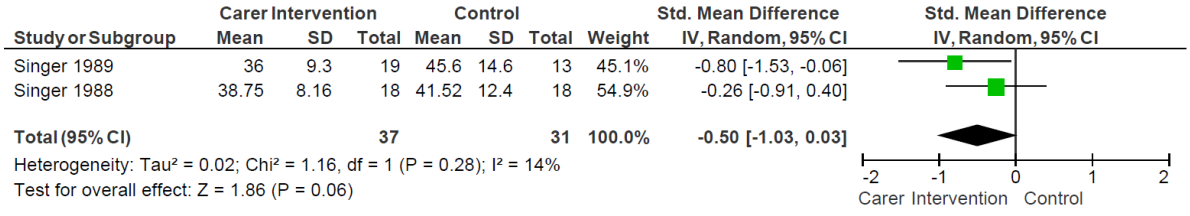


Figure 229: Carer health and well-being (anxiety, state) – post-treatment

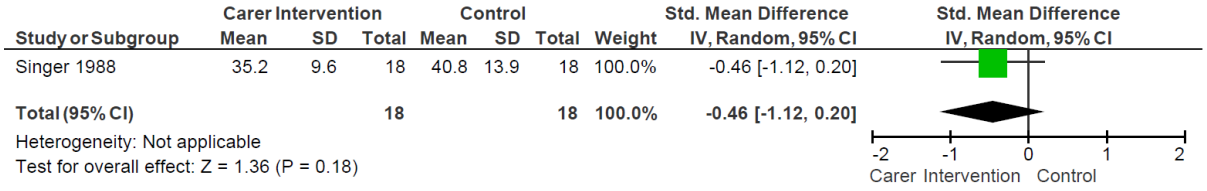


Figure 230: Carer health and well-being (mental ill health) – post-treatment

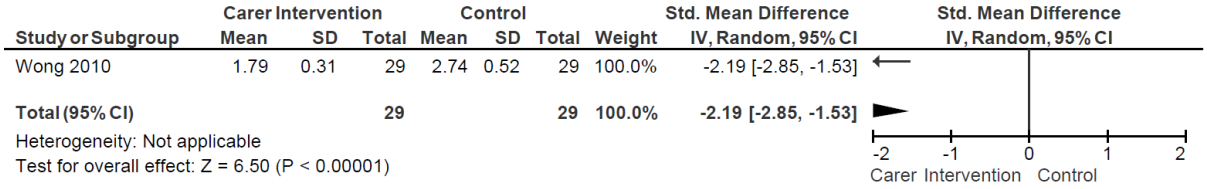


Figure 231: Carer health and well-being (quality of life) – post-treatment

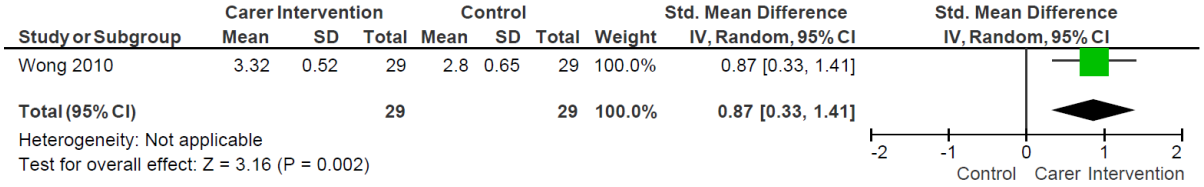


Figure 232: Carer health and well-being (clinically stressed) – post-treatment

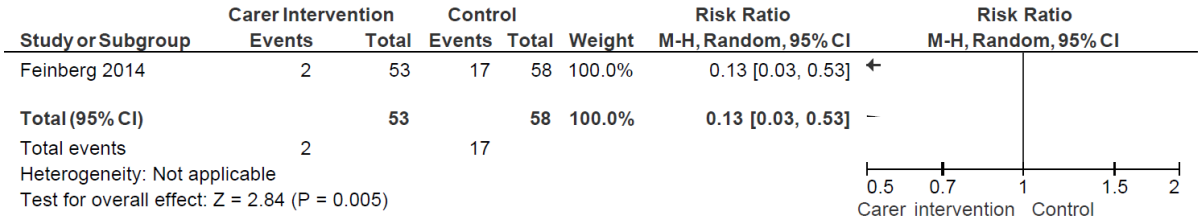


Figure 233: Carer health and well-being (stress) – post-treatment

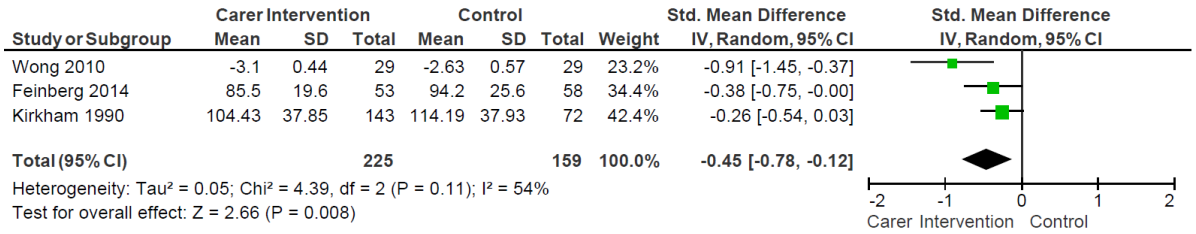
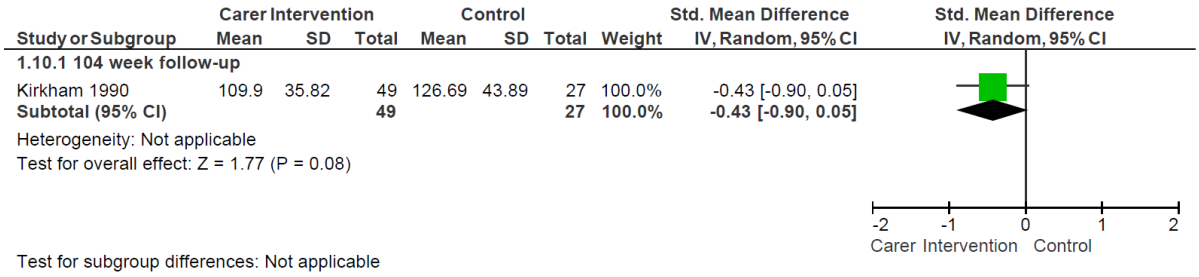


Figure 234: Carer health and well-being (stress) – follow-up



A.11.2 Psychoeducational interventions for family carers versus any control

Figure 235: Carer health and well-being (depression) – follow-up

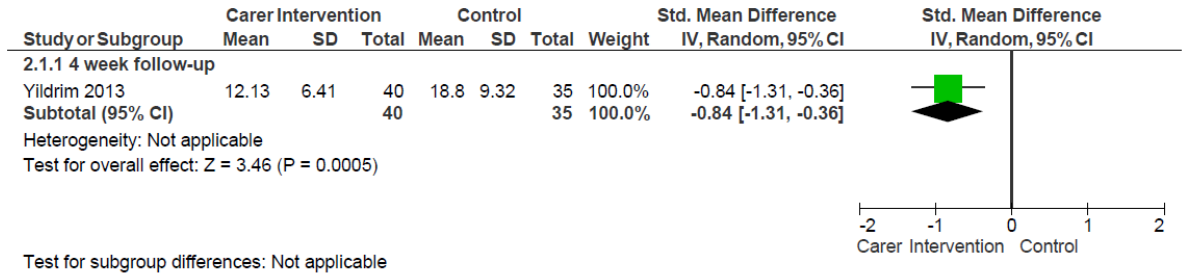
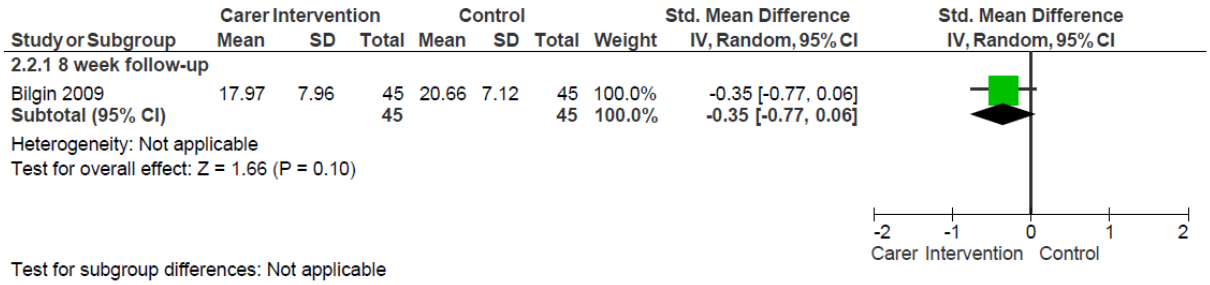
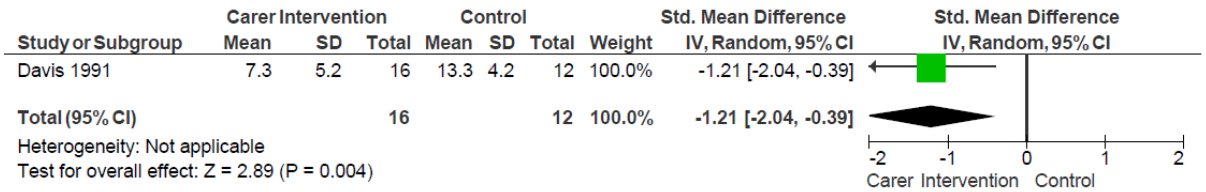


Figure 236: Carer health and well-being (burnout) – follow-up



A.11.3 Support interventions for family carers versus any control

Figure 237: Carer health and well-being (stress) – post-treatment



A.11.4 Mindfulness interventions for paid carers versus any control

Figure 238: Carer health and well-being (mental well-being) – post-treatment

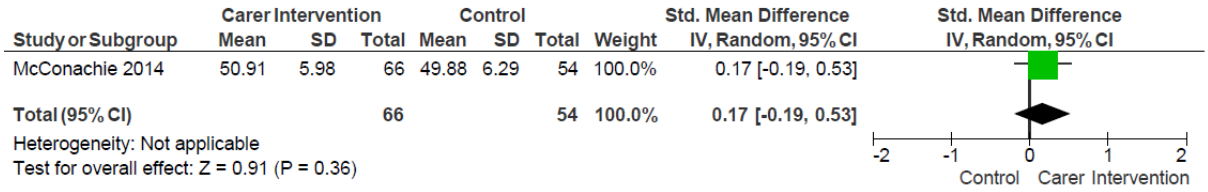


Figure 239: Carer health and well-being (mental well-being) – follow-up

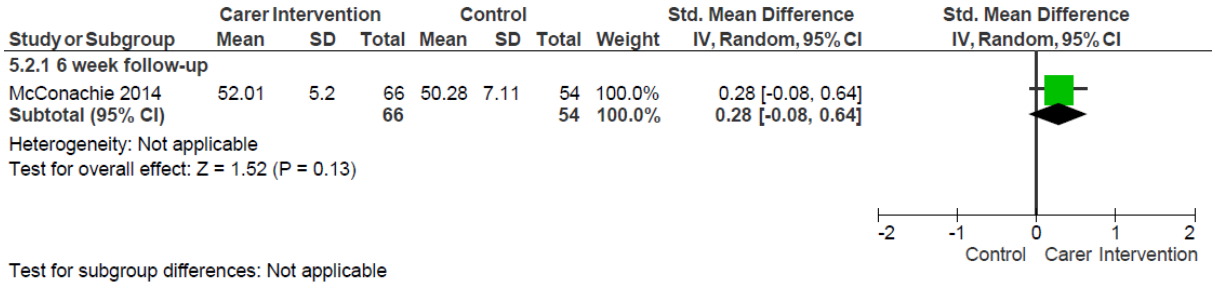


Figure 240: Carer health and well-being (mental ill health) – post-treatment

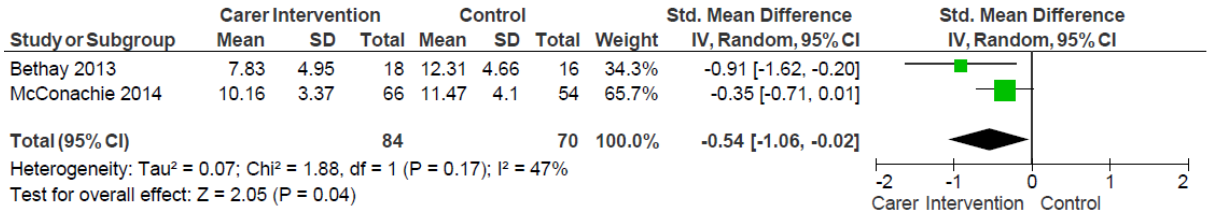


Figure 241: Carer health and well-being (mental ill health) – follow-up

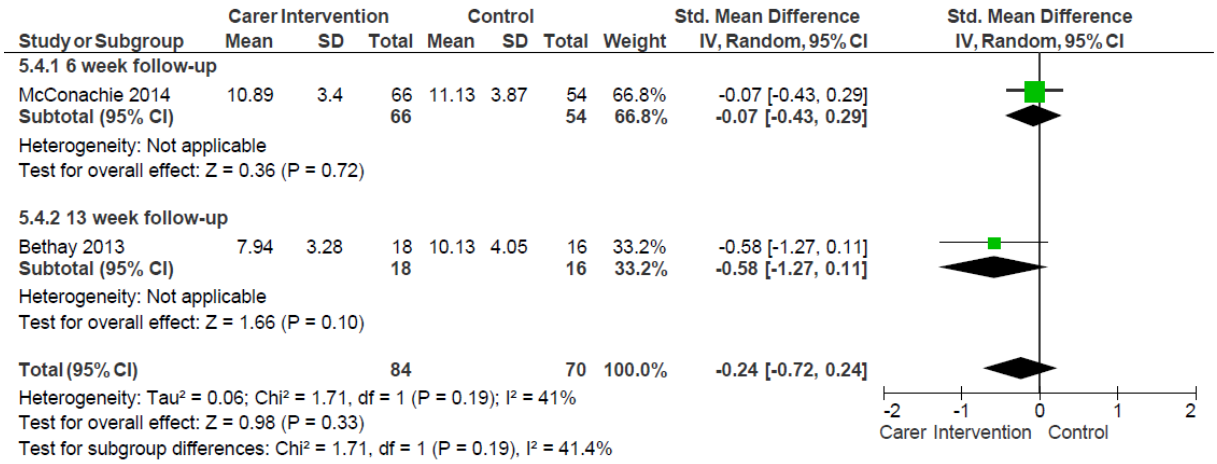


Figure 242: Carer health and well-being (stress) – post-treatment

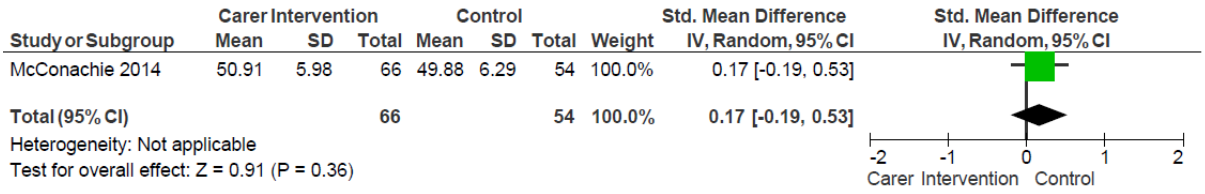


Figure 243: Carer health and well-being (stress) – follow-up

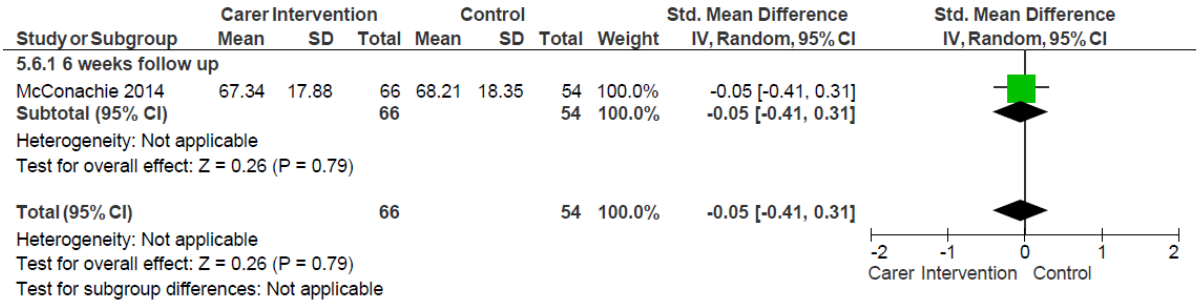


Figure 244: Carer health and well-being (burnout) – post-treatment

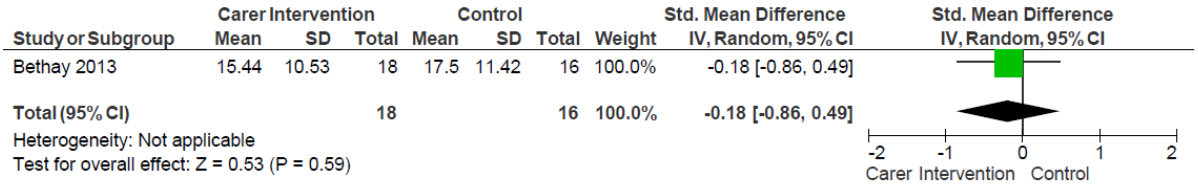


Figure 245: Carer health and well-being (burnout) – follow-up