

Appendix G. 8. WHO review: Cognitive behavioural therapies for children with chronic pain

Comparison: Cognitive behavioural therapies (including cognitive behavioural therapy, behavioural therapy, acceptance commitment therapy, relaxation) versus active (non-psychological), standard care or waitlist control

Population: children with any chronic pain

Setting: Any setting

Studies: Randomised controlled trials

Risk of bias legend

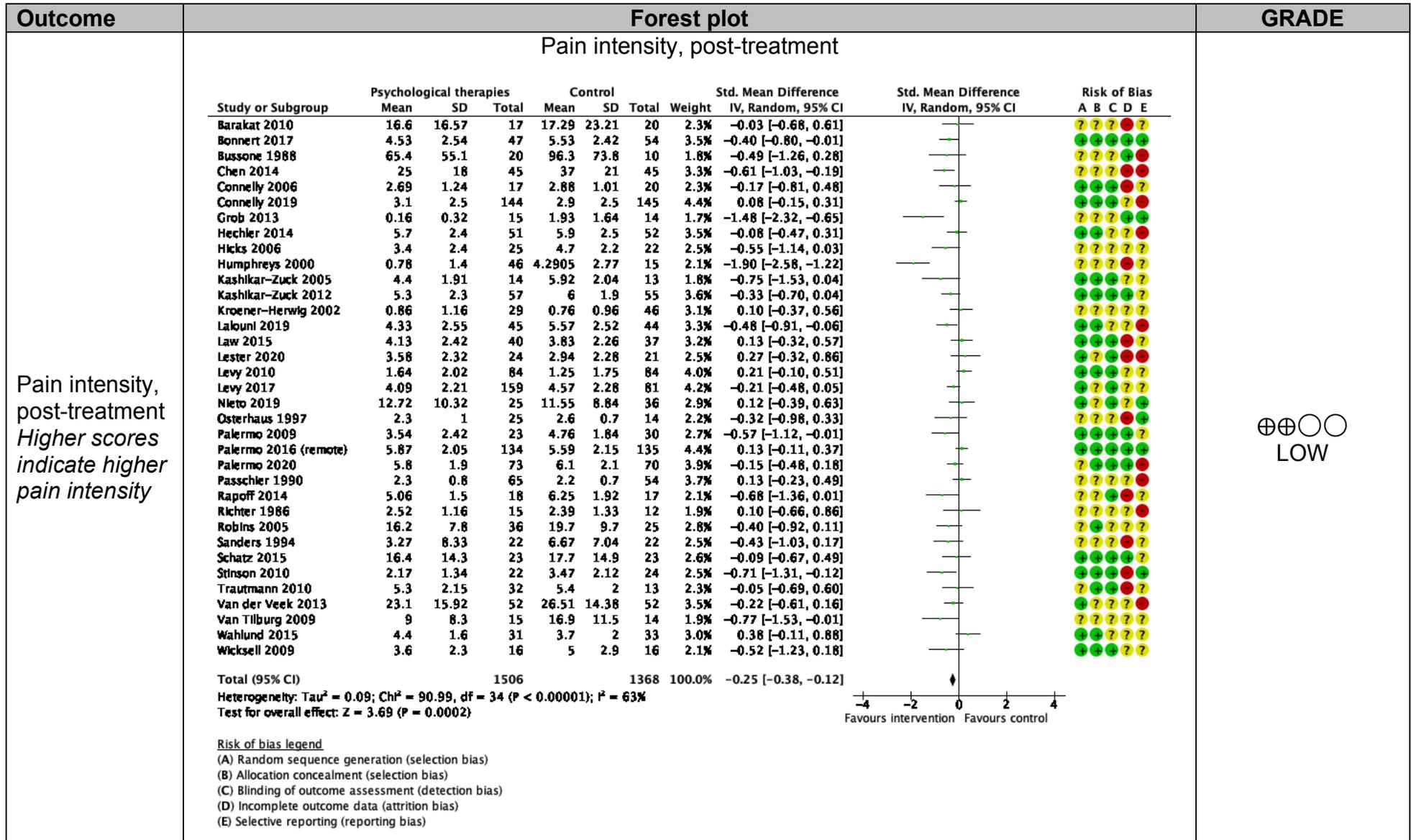
(A) Random sequence generation (selection bias)

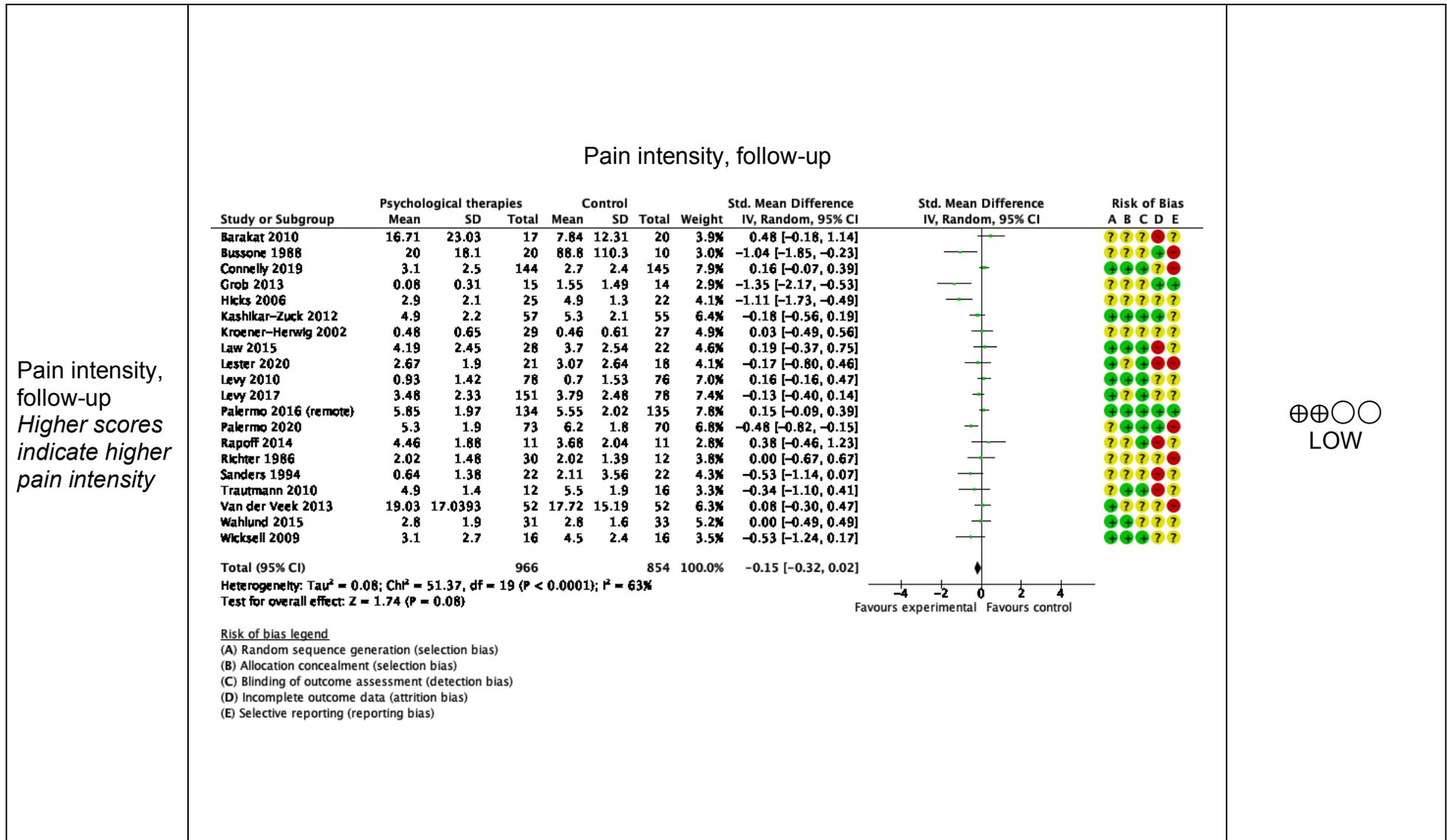
(B) Allocation concealment (selection bias)

(C) Blinding of outcome assessment (detection bias)

(D) Incomplete outcome data (attrition bias)

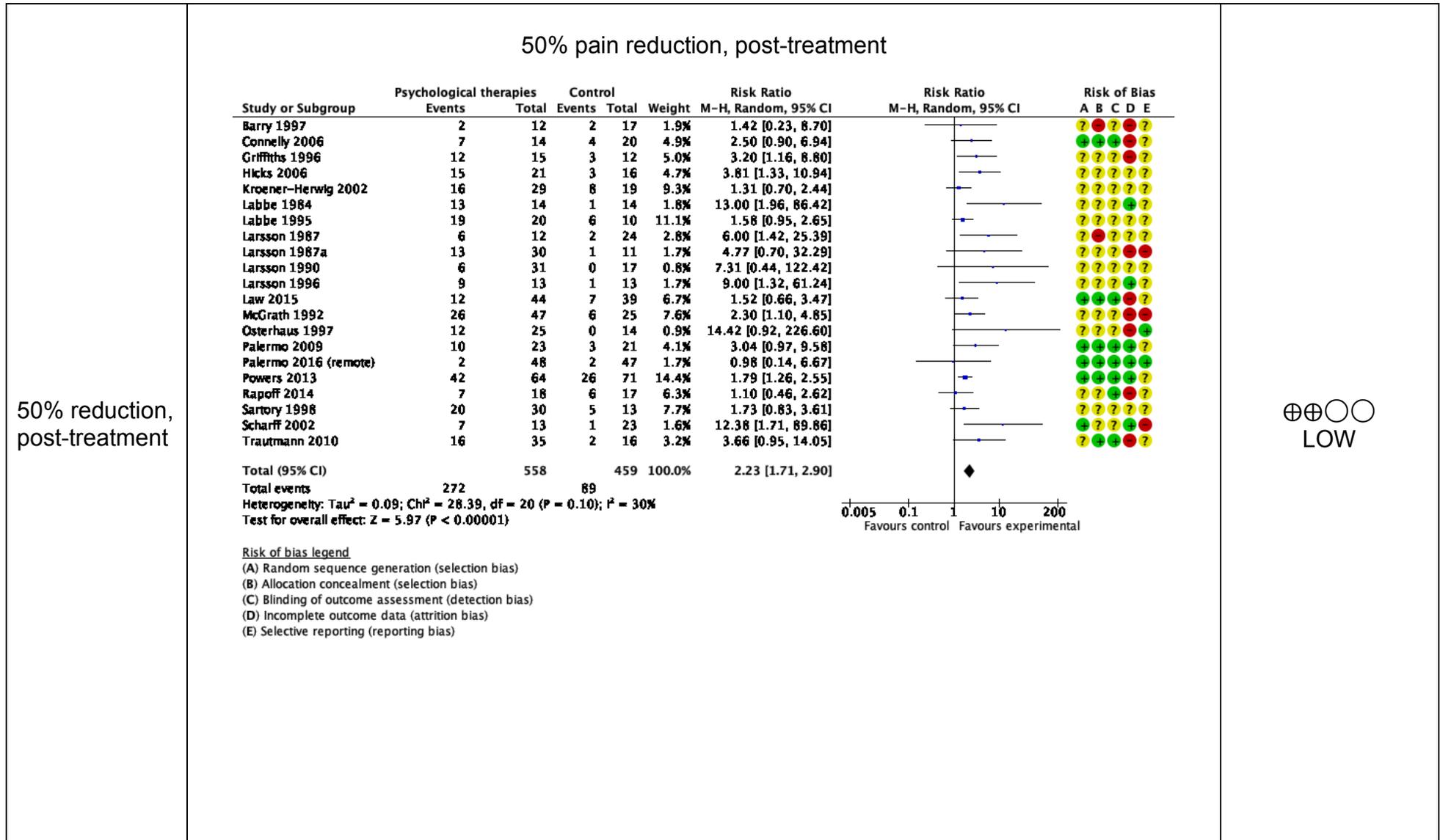
(E) Selective reporting (reporting bias)

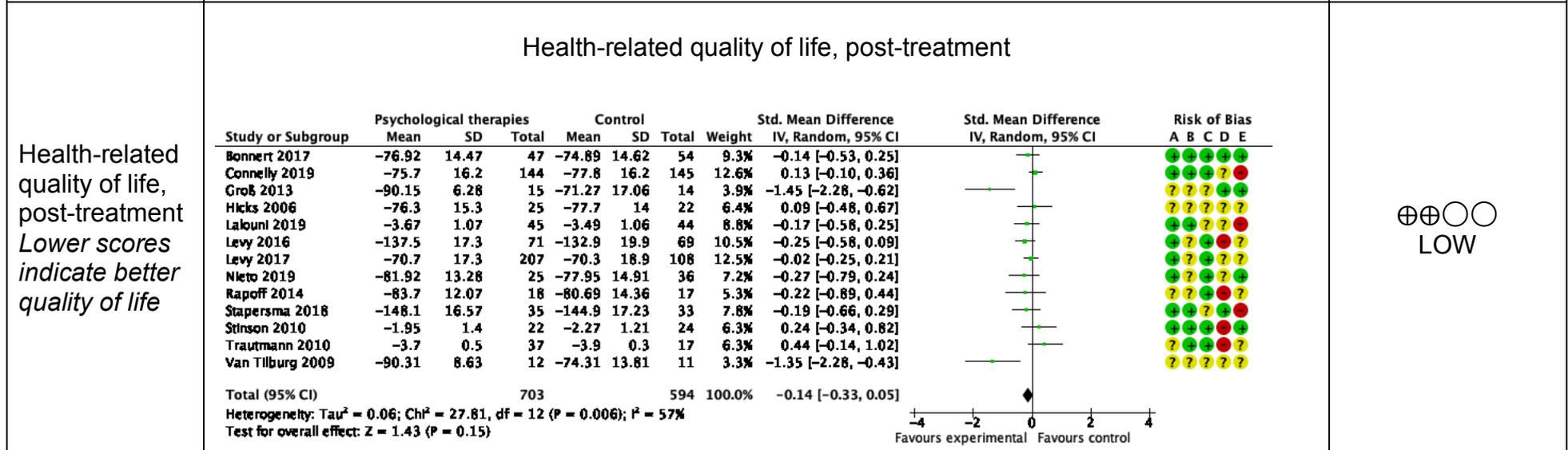
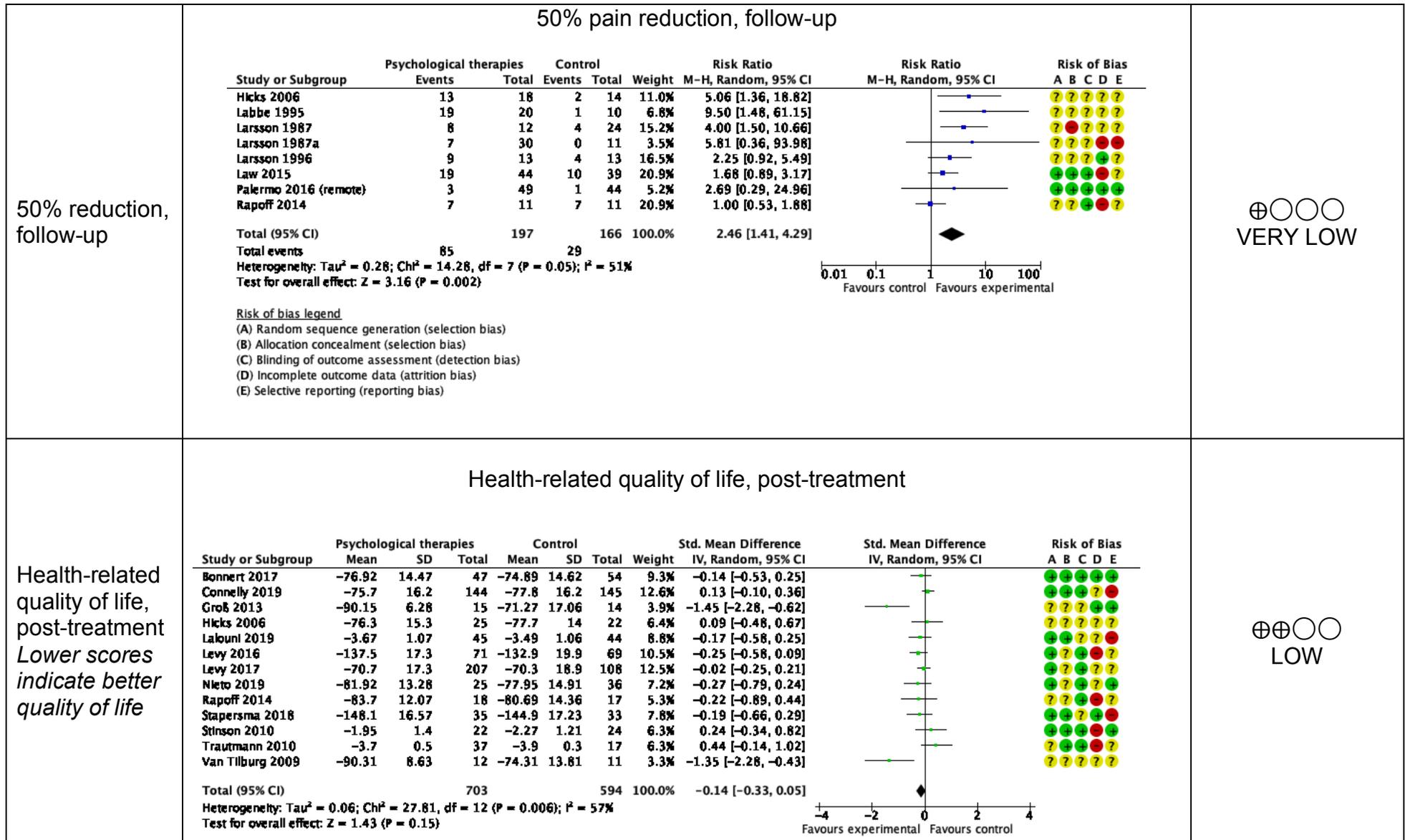




Pain intensity, follow-up
Higher scores indicate higher pain intensity

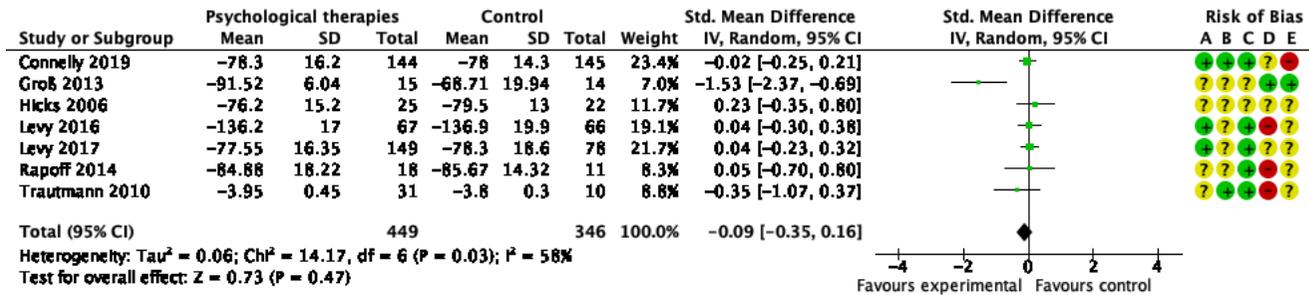
<p>30% reduction, post-treatment</p>	<h3 style="text-align: center;">30% pain reduction, post-treatment</h3> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Study or Subgroup</th> <th colspan="2">Psychological therapies</th> <th colspan="2">Control</th> <th rowspan="2">Weight</th> <th colspan="2">Risk Ratio</th> <th rowspan="2">Risk of Bias</th> </tr> <tr> <th>Events</th> <th>Total</th> <th>Events</th> <th>Total</th> <th>M-H, Fixed, 95% CI</th> <th>M-H, Fixed, 95% CI</th> </tr> </thead> <tbody> <tr> <td>Van der Veek 2013</td> <td>17</td> <td>52</td> <td>15</td> <td>52</td> <td>100.0%</td> <td>1.13 [0.64, 2.02]</td> <td></td> <td>⊕ ? ? ? ⊕</td> </tr> <tr> <td>Total (95% CI)</td> <td></td> <td>52</td> <td></td> <td>52</td> <td>100.0%</td> <td>1.13 [0.64, 2.02]</td> <td></td> <td></td> </tr> <tr> <td>Total events</td> <td>17</td> <td></td> <td>15</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="9">Heterogeneity: Not applicable</td> </tr> <tr> <td colspan="9">Test for overall effect: Z = 0.42 (P = 0.67)</td> </tr> </tbody> </table> <p><u>Risk of bias legend</u> (A) Random sequence generation (selection bias) (B) Allocation concealment (selection bias) (C) Blinding of outcome assessment (detection bias) (D) Incomplete outcome data (attrition bias) (E) Selective reporting (reporting bias)</p>	Study or Subgroup	Psychological therapies		Control		Weight	Risk Ratio		Risk of Bias	Events	Total	Events	Total	M-H, Fixed, 95% CI	M-H, Fixed, 95% CI	Van der Veek 2013	17	52	15	52	100.0%	1.13 [0.64, 2.02]		⊕ ? ? ? ⊕	Total (95% CI)		52		52	100.0%	1.13 [0.64, 2.02]			Total events	17		15						Heterogeneity: Not applicable									Test for overall effect: Z = 0.42 (P = 0.67)									<p style="text-align: center;">⊕○○○ VERY LOW</p>
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Health-related quality of life, follow-up
 Lower scores indicate better quality of life

Health-related quality of life, follow-up



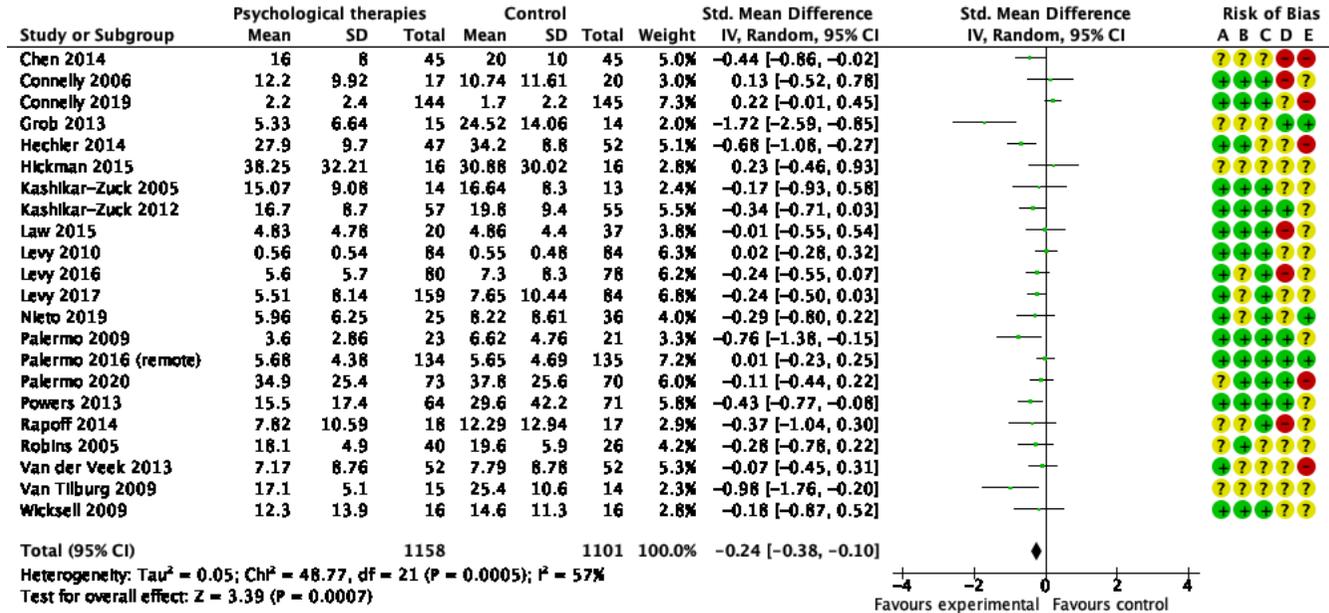
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- (A) Random sequence generation (selection bias)
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- (E) Selective reporting (reporting bias)

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 LOW

Functional disability, post-treatment

Functional disability, post-treatment
Higher scores indicate higher disability

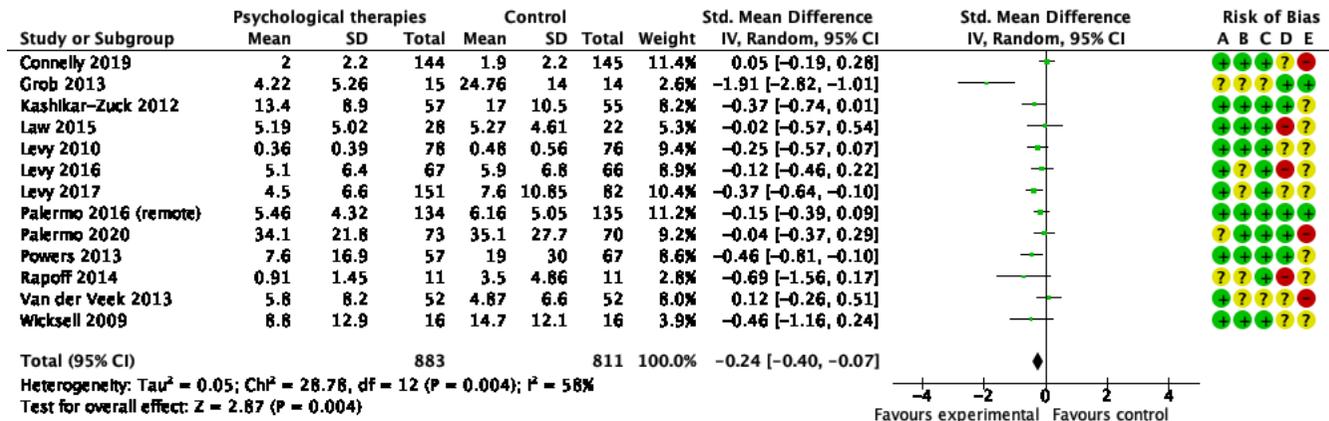


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 LOW

Functional disability, follow-up
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Functional disability, follow-up



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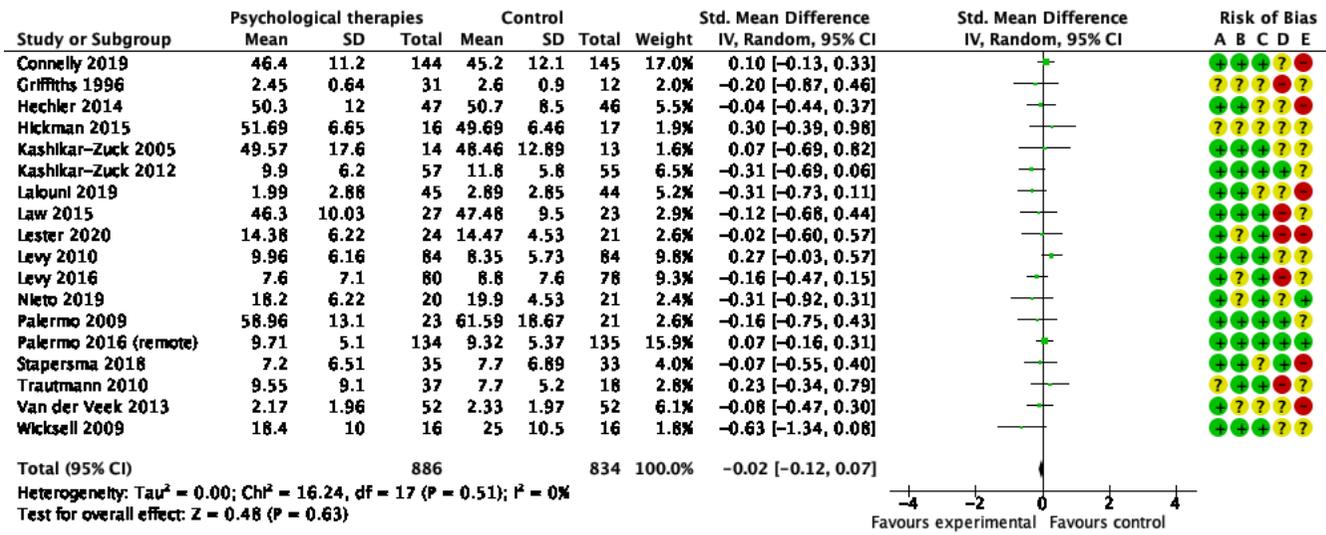
⊕⊕⊕○
 MODERATE

<p>Role functioning (school absence), post-treatment <i>Higher scores indicate more absence from school</i></p>	<h3 style="text-align: center;">Role functioning (school absence), post-treatment</h3> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Study or Subgroup</th> <th colspan="3">Psychological therapies</th> <th colspan="3">Control</th> <th rowspan="2">Weight</th> <th rowspan="2">Std. Mean Difference IV, Random, 95% CI</th> <th rowspan="2">Std. Mean Difference IV, Random, 95% CI</th> <th rowspan="2">Risk of Bias A B C D E</th> </tr> <tr> <th>Mean</th> <th>SD</th> <th>Total</th> <th>Mean</th> <th>SD</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Bonnert 2017</td> <td>1.04</td> <td>1.1</td> <td>47</td> <td>1.31</td> <td>1.1</td> <td>54</td> <td>13.6%</td> <td>-0.24 [-0.64, 0.15]</td> <td></td> <td>● ● ● ● ●</td> </tr> <tr> <td>Hechler 2014</td> <td>1.6</td> <td>3.3</td> <td>47</td> <td>5</td> <td>6.1</td> <td>47</td> <td>13.3%</td> <td>-0.69 [-1.10, -0.27]</td> <td></td> <td>● ● ? ? ●</td> </tr> <tr> <td>Humphreys 2000</td> <td>0.06</td> <td>0.17</td> <td>46</td> <td>0.8</td> <td>1.26</td> <td>15</td> <td>10.6%</td> <td>-1.16 [-1.78, -0.54]</td> <td></td> <td>? ? ? ? ●</td> </tr> <tr> <td>Lakouni 2019</td> <td>0.21</td> <td>0.94</td> <td>45</td> <td>0.41</td> <td>0.93</td> <td>44</td> <td>13.3%</td> <td>-0.21 [-0.63, 0.20]</td> <td></td> <td>● ● ? ? ●</td> </tr> <tr> <td>Levy 2017</td> <td>6.3</td> <td>11.95</td> <td>205</td> <td>7.8</td> <td>15</td> <td>109</td> <td>15.5%</td> <td>-0.11 [-0.35, 0.12]</td> <td></td> <td>● ● ● ● ?</td> </tr> <tr> <td>Van Tilburg 2009</td> <td>1</td> <td>1.3</td> <td>14</td> <td>1.79</td> <td>1.25</td> <td>14</td> <td>9.0%</td> <td>-0.60 [-1.36, 0.16]</td> <td></td> <td>? ? ? ? ?</td> </tr> <tr> <td>Wahlund 2003</td> <td>1.24</td> <td>3.36</td> <td>34</td> <td>0.08</td> <td>0.4</td> <td>39</td> <td>12.6%</td> <td>0.50 [0.03, 0.96]</td> <td></td> <td>? ? ? ● ●</td> </tr> <tr> <td>Wahlund 2015</td> <td>1.2</td> <td>2.1</td> <td>31</td> <td>0.3</td> <td>0.8</td> <td>33</td> <td>12.2%</td> <td>0.57 [0.07, 1.07]</td> <td></td> <td>● ● ? ? ?</td> </tr> <tr> <td>Total (95% CI)</td> <td></td> <td></td> <td>469</td> <td></td> <td></td> <td>355</td> <td>100.0%</td> <td>-0.22 [-0.55, 0.12]</td> <td></td> <td></td> </tr> </tbody> </table> <p>Heterogeneity: Tau² = 0.17; Chi² = 33.43, df = 7 (P < 0.0001); I² = 79% Test for overall effect: Z = 1.26 (P = 0.21)</p> <p><u>Risk of bias legend</u> (A) Random sequence generation (selection bias) (B) Allocation concealment (selection bias) (C) Blinding of outcome assessment (detection bias) (D) Incomplete outcome data (attrition bias) (E) Selective reporting (reporting bias)</p>	Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference IV, Random, 95% CI	Std. Mean Difference IV, Random, 95% CI	Risk of Bias A B C D E	Mean	SD	Total	Mean	SD	Total	Bonnert 2017	1.04	1.1	47	1.31	1.1	54	13.6%	-0.24 [-0.64, 0.15]		● ● ● ● ●	Hechler 2014	1.6	3.3	47	5	6.1	47	13.3%	-0.69 [-1.10, -0.27]		● ● ? ? ●	Humphreys 2000	0.06	0.17	46	0.8	1.26	15	10.6%	-1.16 [-1.78, -0.54]		? ? ? ? ●	Lakouni 2019	0.21	0.94	45	0.41	0.93	44	13.3%	-0.21 [-0.63, 0.20]		● ● ? ? ●	Levy 2017	6.3	11.95	205	7.8	15	109	15.5%	-0.11 [-0.35, 0.12]		● ● ● ● ?	Van Tilburg 2009	1	1.3	14	1.79	1.25	14	9.0%	-0.60 [-1.36, 0.16]		?	Wahlund 2003	1.24	3.36	34	0.08	0.4	39	12.6%	0.50 [0.03, 0.96]		? ? ? ● ●	Wahlund 2015	1.2	2.1	31	0.3	0.8	33	12.2%	0.57 [0.07, 1.07]		● ● ? ? ?	Total (95% CI)			469			355	100.0%	-0.22 [-0.55, 0.12]			<p style="text-align: center;">⊕○○○ VERY LOW</p>
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MODERATE

Emotional functioning: Depression, post-treatment

Emotional functioning: Depression, post-treatment
Higher scores indicate higher depressive symptomology

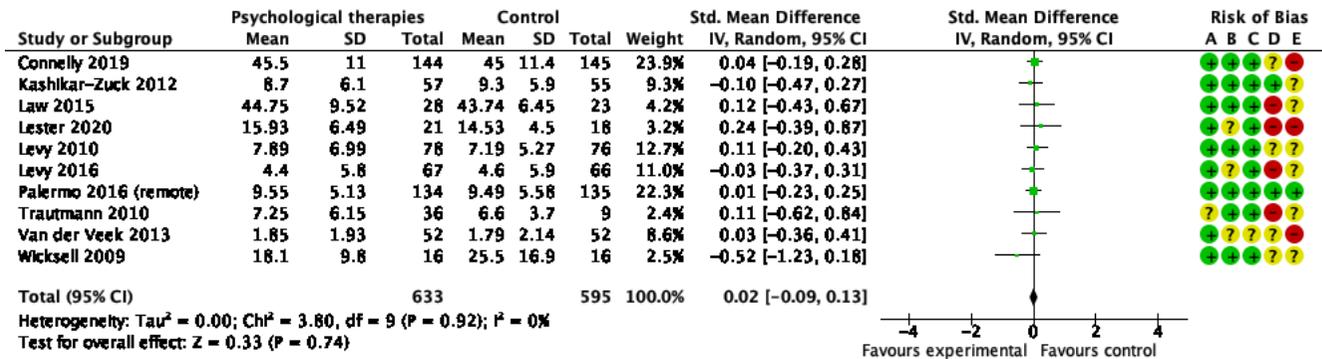


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 - (E) Selective reporting (reporting bias)

⊕⊕⊕⊕
HIGH

Emotional functioning: Depression, follow-up

Emotional functioning: Depression, follow-up
Higher scores indicate higher depressive symptomology



Risk of bias legend

- (A) Random sequence generation (selection bias)
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<p>Emotional functioning: Anxiety, post-treatment <i>Higher scores indicate higher anxious symptomology</i></p>	<p style="text-align: center;">Emotional functioning: Anxiety, post-treatment</p> <table border="1"> <thead> <tr> <th rowspan="2">Study or Subgroup</th> <th colspan="3">Psychological therapies</th> <th colspan="3">Control</th> <th rowspan="2">Weight</th> <th rowspan="2">Std. Mean Difference IV, Random, 95% CI</th> <th rowspan="2">Std. 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Appendix G. 9 WHO review: Cognitive behavioural therapies for children with chronic pain, by route

Comparison: Cognitive behavioural therapies (including cognitive behavioural therapy, behavioural therapy, acceptance commitment therapy, relaxation) versus active (non-psychological), standard care or waitlist control, by route (face-to-face vs. remotely delivered)

Population: children with any chronic pain

Setting: Any setting

Studies: Randomised controlled trials

Risk of bias legend

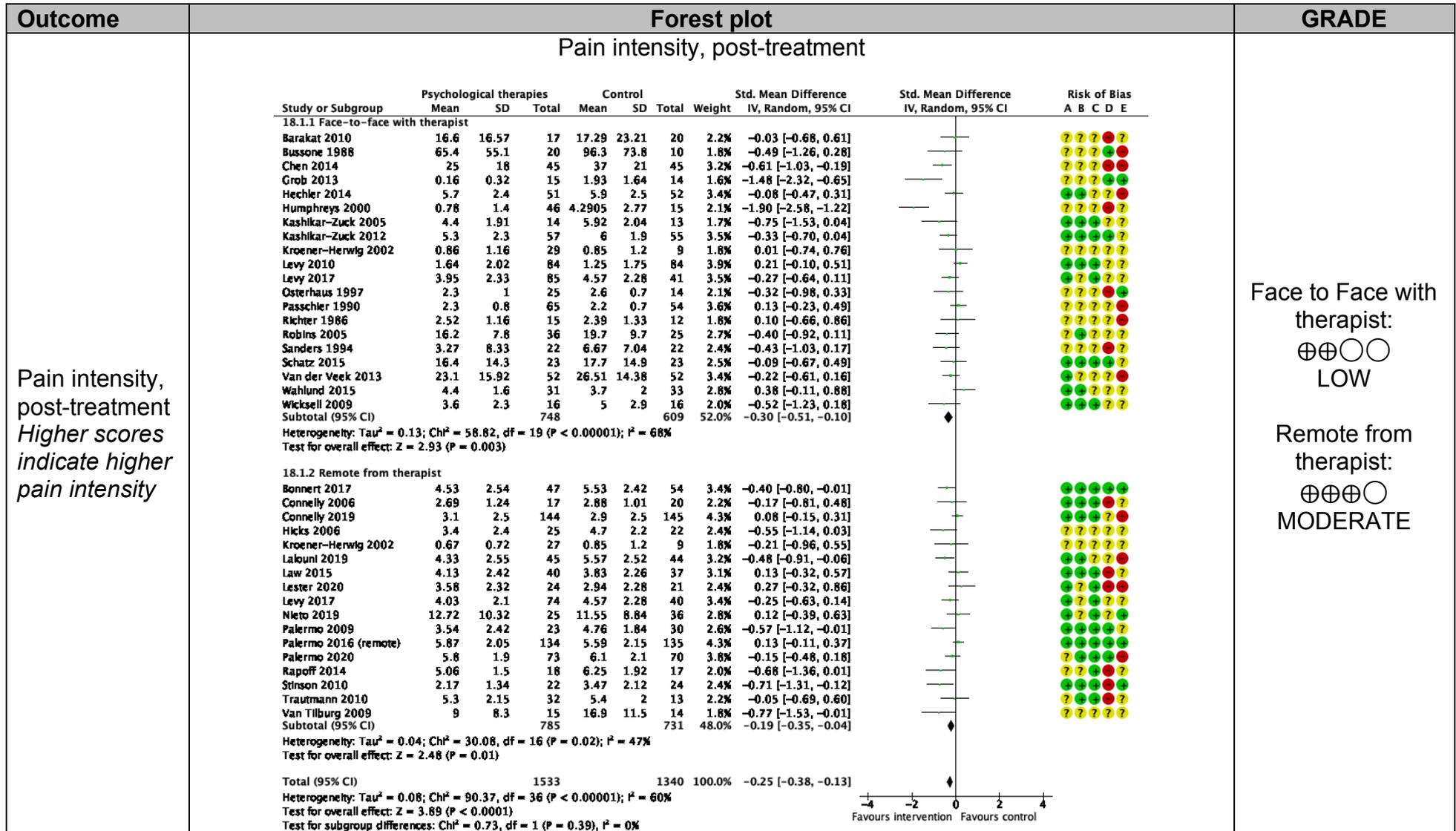
(A) Random sequence generation (selection bias)

(B) Allocation concealment (selection bias)

(C) Blinding of outcome assessment (detection bias)

(D) Incomplete outcome data (attrition bias)

(E) Selective reporting (reporting bias)

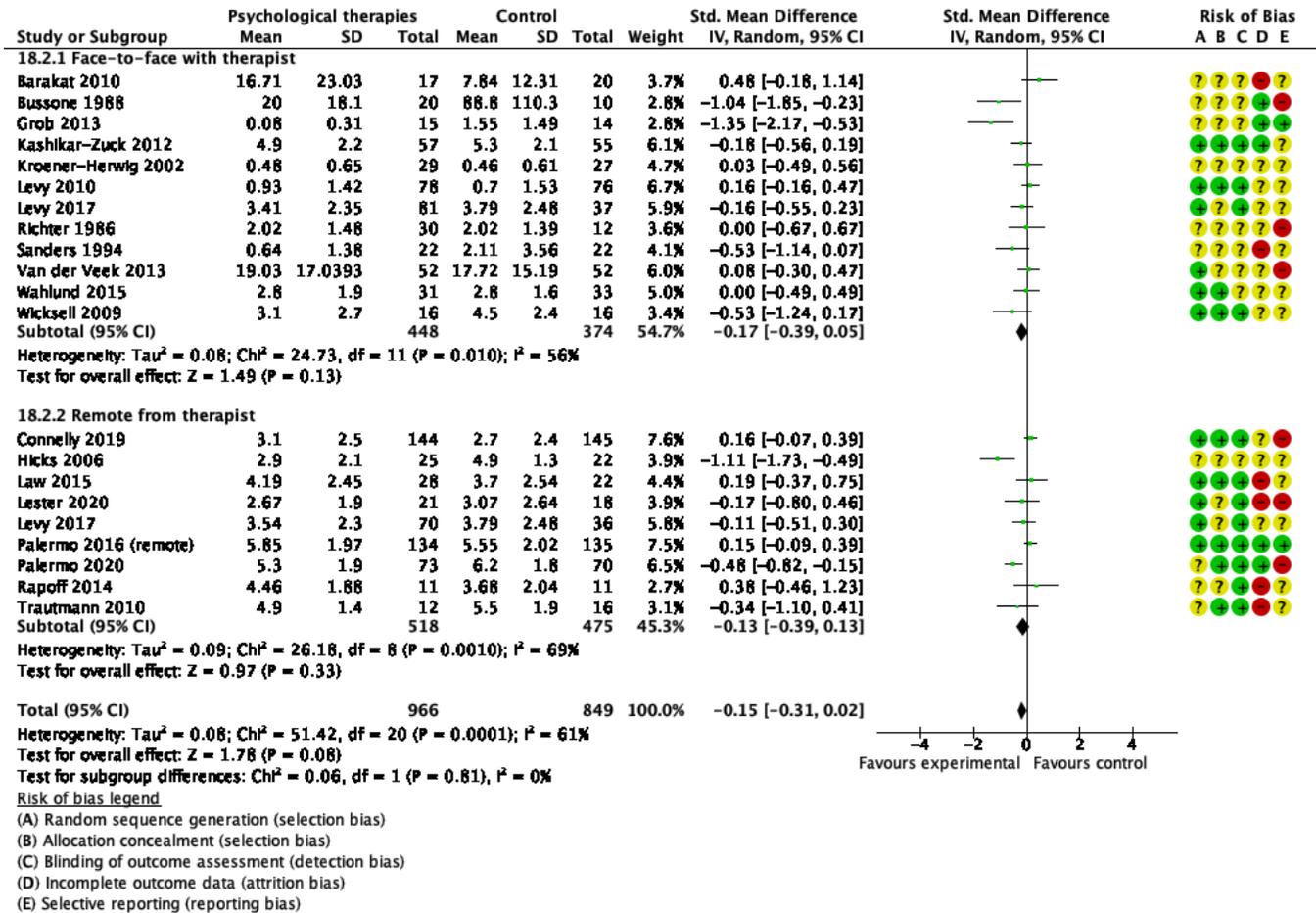


Pain intensity, post-treatment
Higher scores indicate higher pain intensity

Face to Face with therapist:
⊕⊕○○
LOW

Remote from therapist:
⊕⊕⊕○
MODERATE

Pain intensity, follow-up



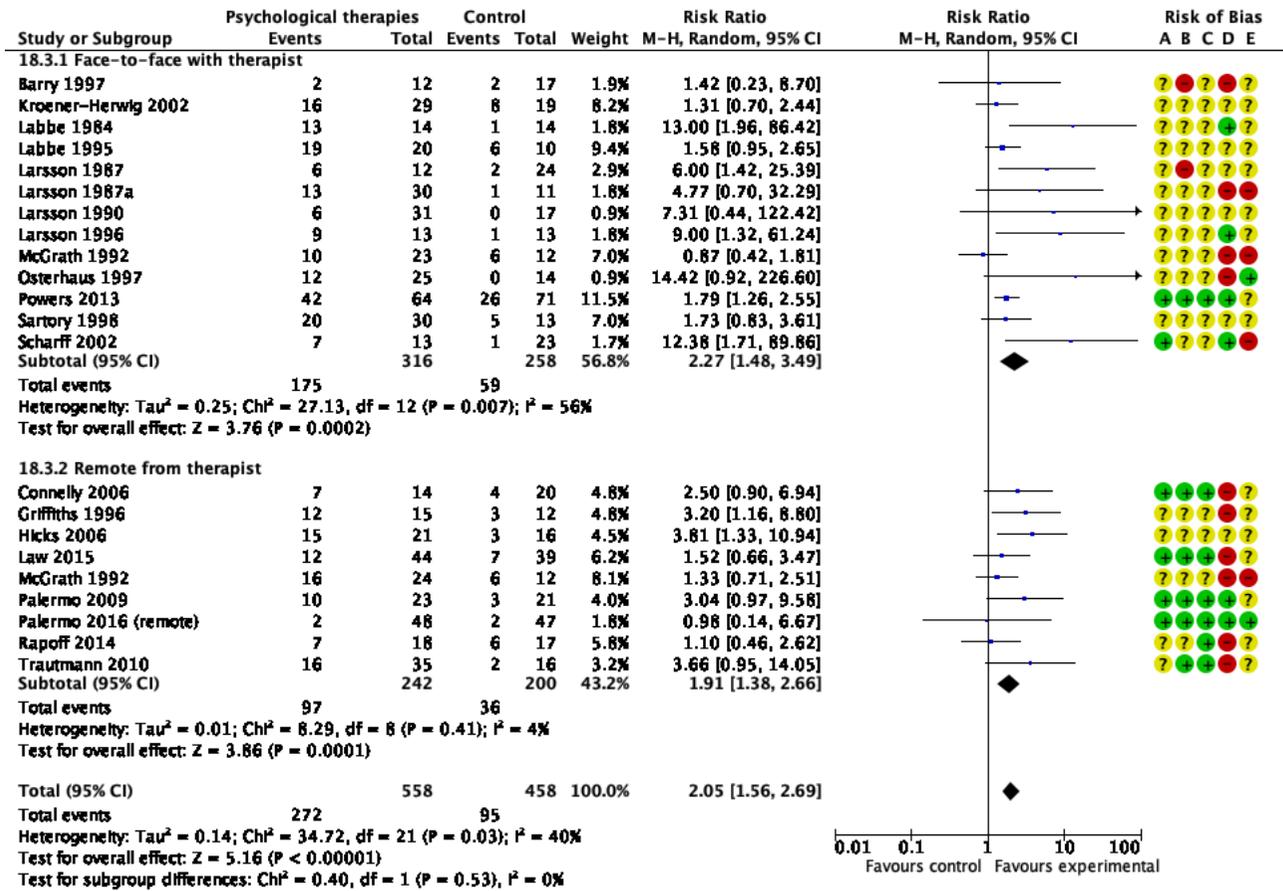
Pain intensity, follow-up
Higher scores indicate higher pain intensity

Face to Face with therapist:
⊕⊕○○
LOW

Remote from therapist:
⊕⊕○○
LOW

<p>30% reduction, post-treatment</p>	<p style="text-align: center;">30% pain reduction, post-treatment (face-to-face)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Study or Subgroup</th> <th colspan="2">Psychological therapies</th> <th colspan="2">Control</th> <th rowspan="2">Weight</th> <th colspan="2">Risk Ratio</th> <th rowspan="2">Risk of Bias</th> </tr> <tr> <th>Events</th> <th>Total</th> <th>Events</th> <th>Total</th> <th>M-H, Fixed, 95% CI</th> <th>M-H, Fixed, 95% CI</th> </tr> </thead> <tbody> <tr> <td>Van der Veek 2013</td> <td>17</td> <td>52</td> <td>15</td> <td>52</td> <td>100.0%</td> <td>1.13</td> <td>[0.64, 2.02]</td> <td style="text-align: center;"> <table border="0"> <tr> <td style="font-size: 8px;">Risk of Bias</td> <td style="font-size: 8px;">A</td> <td style="font-size: 8px;">B</td> <td style="font-size: 8px;">C</td> <td style="font-size: 8px;">D</td> <td style="font-size: 8px;">E</td> </tr> <tr> <td></td> <td style="text-align: center;">●</td> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> <td style="text-align: center;">●</td> </tr> </table> </td> </tr> <tr> <td>Total (95% CI)</td> <td></td> <td>52</td> <td></td> <td>52</td> <td>100.0%</td> <td>1.13</td> <td>[0.64, 2.02]</td> <td></td> </tr> <tr> <td>Total events</td> <td>17</td> <td></td> <td>15</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="9">Heterogeneity: Not applicable</td> </tr> <tr> <td colspan="9">Test for overall effect: Z = 0.42 (P = 0.67)</td> </tr> </tbody> </table> <p><u>Risk of bias legend</u> (A) Random sequence generation (selection bias) (B) Allocation concealment (selection bias) (C) Blinding of outcome assessment (detection bias) (D) Incomplete outcome data (attrition bias) (E) Selective reporting (reporting bias)</p>	Study or Subgroup	Psychological therapies		Control		Weight	Risk Ratio		Risk of Bias	Events	Total	Events	Total	M-H, Fixed, 95% CI	M-H, Fixed, 95% CI	Van der Veek 2013	17	52	15	52	100.0%	1.13	[0.64, 2.02]	<table border="0"> <tr> <td style="font-size: 8px;">Risk of Bias</td> <td style="font-size: 8px;">A</td> <td style="font-size: 8px;">B</td> <td style="font-size: 8px;">C</td> <td style="font-size: 8px;">D</td> <td style="font-size: 8px;">E</td> </tr> <tr> <td></td> <td style="text-align: center;">●</td> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> <td style="text-align: center;">?</td> <td style="text-align: center;">●</td> </tr> </table>	Risk of Bias	A	B	C	D	E		●	?	?	?	●	Total (95% CI)		52		52	100.0%	1.13	[0.64, 2.02]		Total events	17		15						Heterogeneity: Not applicable									Test for overall effect: Z = 0.42 (P = 0.67)									<p>Face to Face with therapist: ⊕○○○ VERY LOW</p>
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50% pain reduction, post-treatment



50% reduction,
post-treatment

Face to Face with
therapist:
⊕○○○
VERY LOW

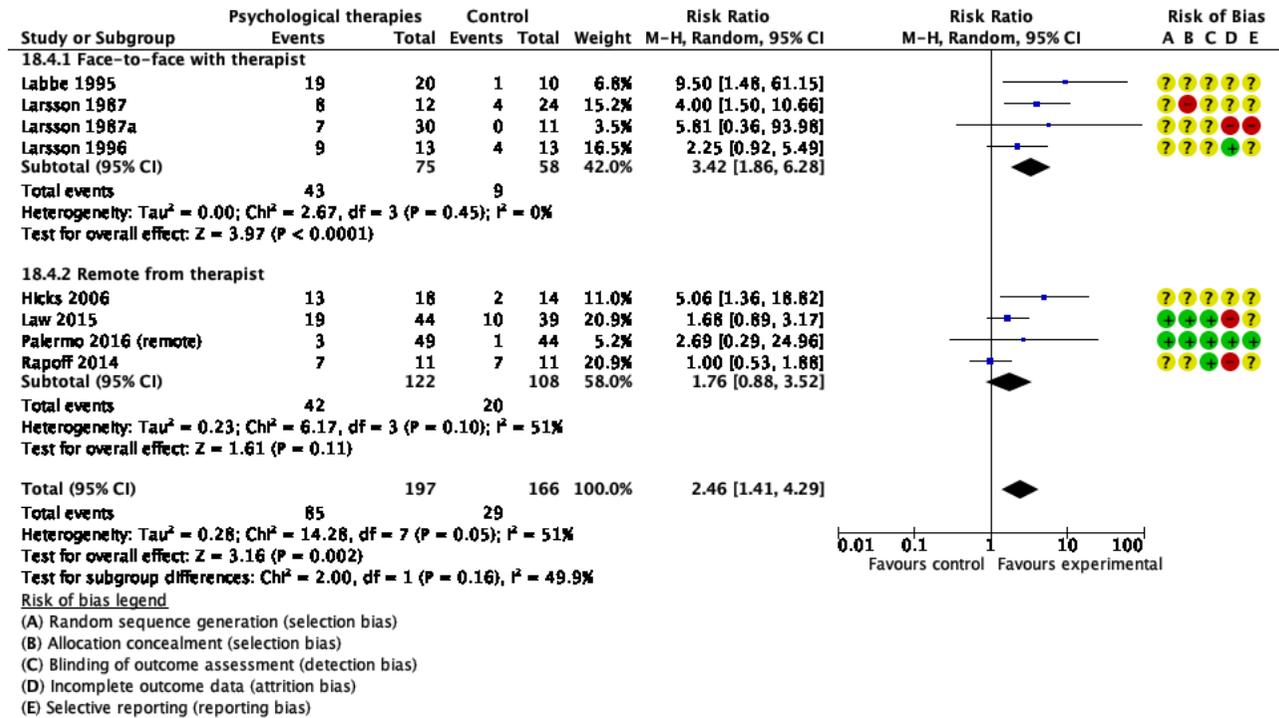
Remote from
therapist:
⊕⊕○○
LOW

Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of outcome assessment (detection bias)
- (D) Incomplete outcome data (attrition bias)
- (E) Selective reporting (reporting bias)

50% pain reduction, follow-up

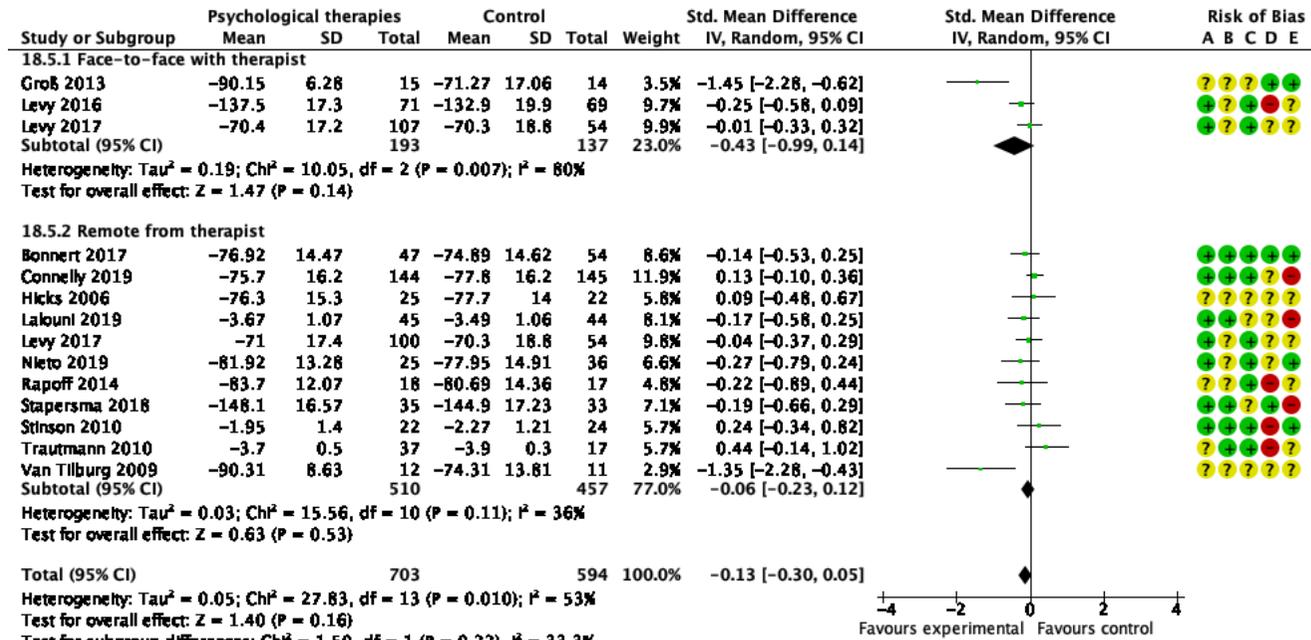
50% reduction, follow-up



Face to Face with therapist:
⊕○○○
VERY LOW

Remote from therapist:
⊕○○○
VERY LOW

Health-related quality of life, post-treatment



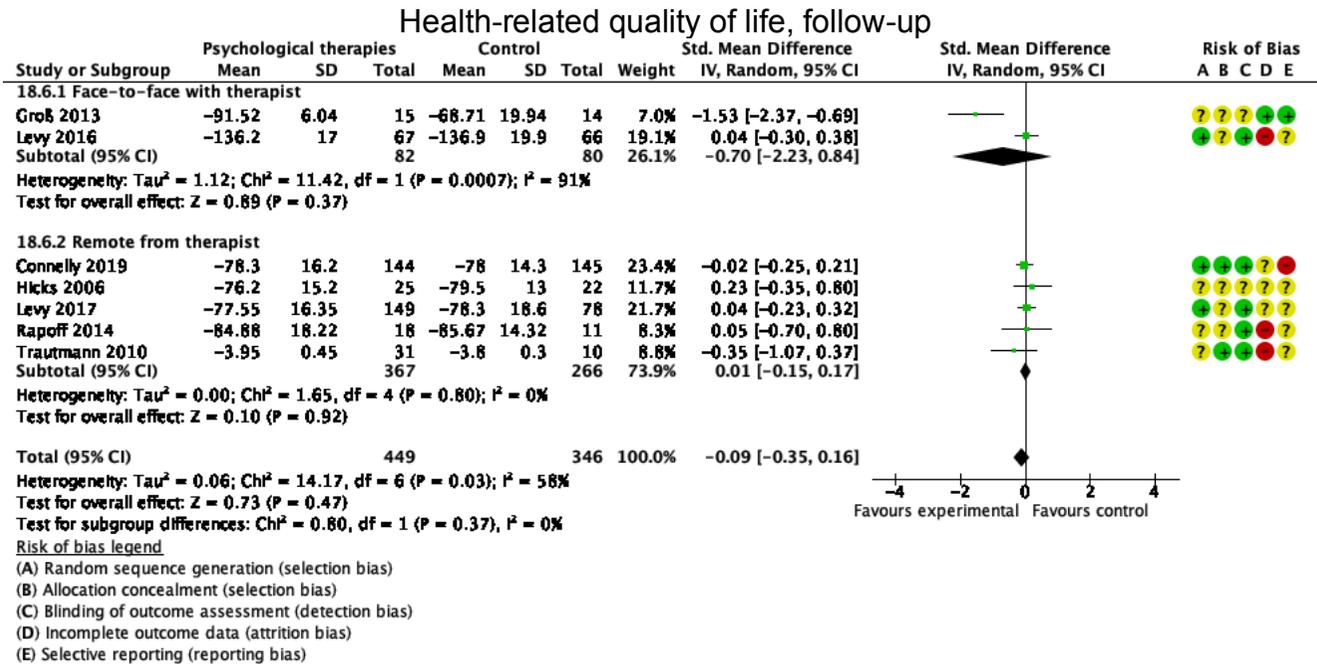
Health-related quality of life, post-treatment
Lower scores indicate better quality of life

Face to Face with therapist:
⊕○○○
VERY LOW

Remote from therapist:
⊕⊕⊕○
MODERATE

- Risk of bias legend**
- (A) Random sequence generation (selection bias)
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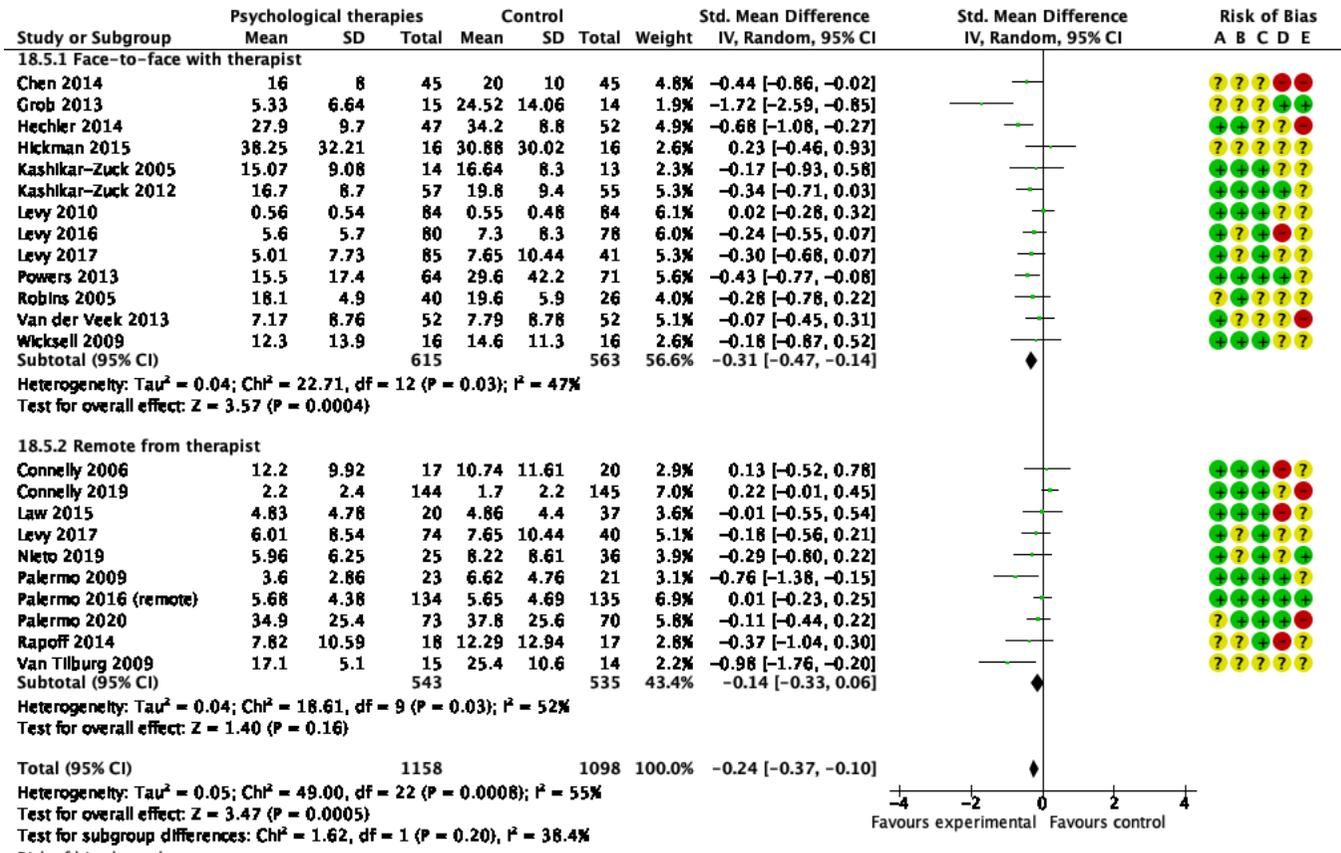
Health-related quality of life, follow-up
Lower scores indicate better quality of life



Face to Face with therapist:
⊕○○○
VERY LOW

Remote from therapist:
⊕⊕⊕○
MODERATE

Functional disability, post-treatment

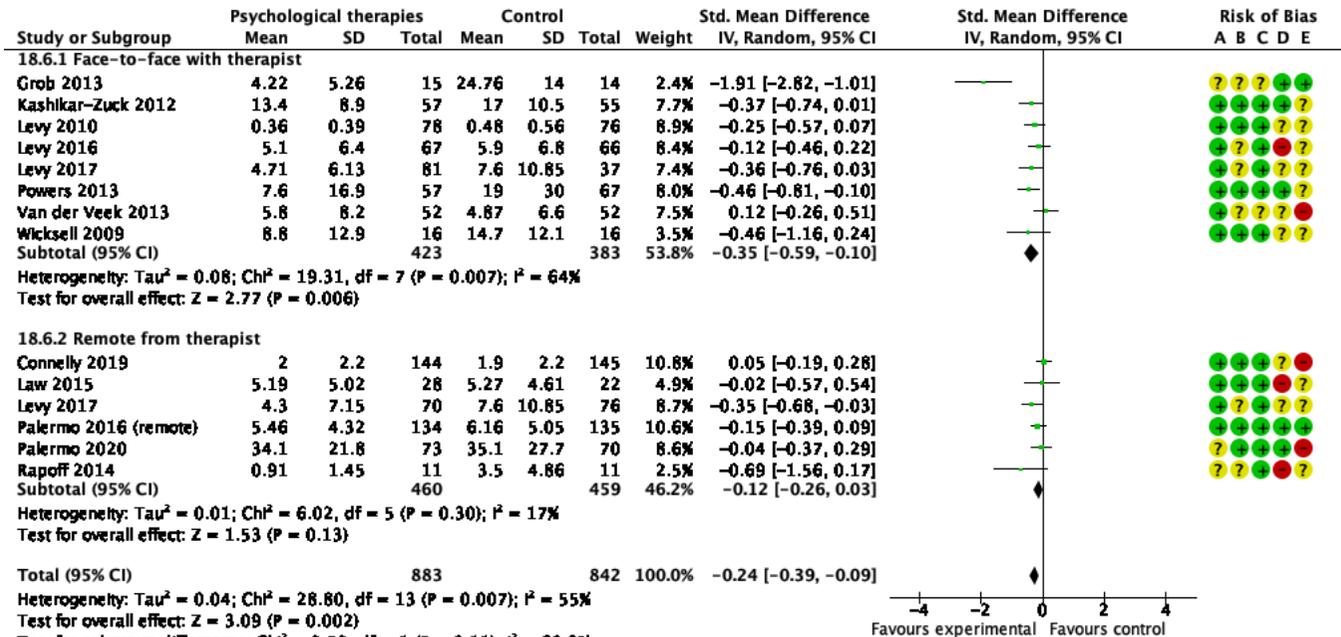


Functional disability, post-treatment
Higher scores indicate higher disability

Face to Face with therapist:
⊕⊕○○
LOW

Remote from therapist:
⊕⊕⊕○
MODERATE

Functional disability, follow-up



Functional disability, follow-up
Higher scores indicate higher disability

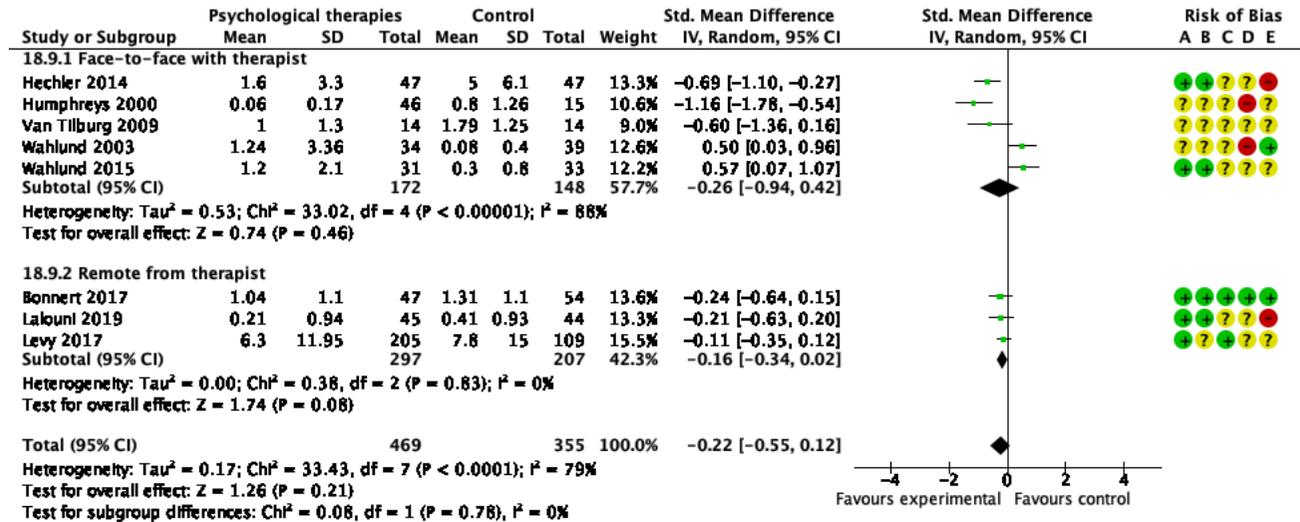
Face to Face with therapist:
⊕⊕⊕○
MODERATE

Remote from therapist:
⊕⊕⊕⊕
HIGH

Risk of bias legend

- (A) Random sequence generation (selection bias)
- (B) Allocation concealment (selection bias)
- (C) Blinding of outcome assessment (detection bias)
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Role functioning (school absence), post-treatment



Role functioning (school absence), post-treatment
Higher scores indicate more absence from school

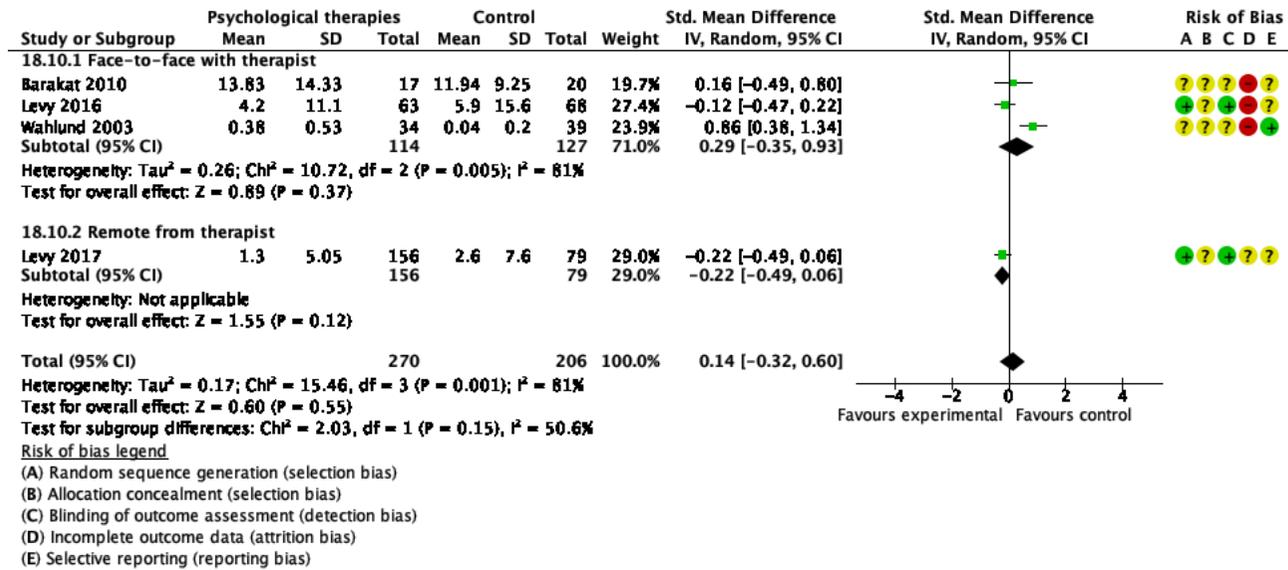
Face to Face with therapist:
⊕○○○
VERY LOW

Remote from therapist:
⊕⊕⊕○
MODERATE

- Risk of bias legend
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Role functioning (school absence), post-treatment
Higher scores indicate more absence from school

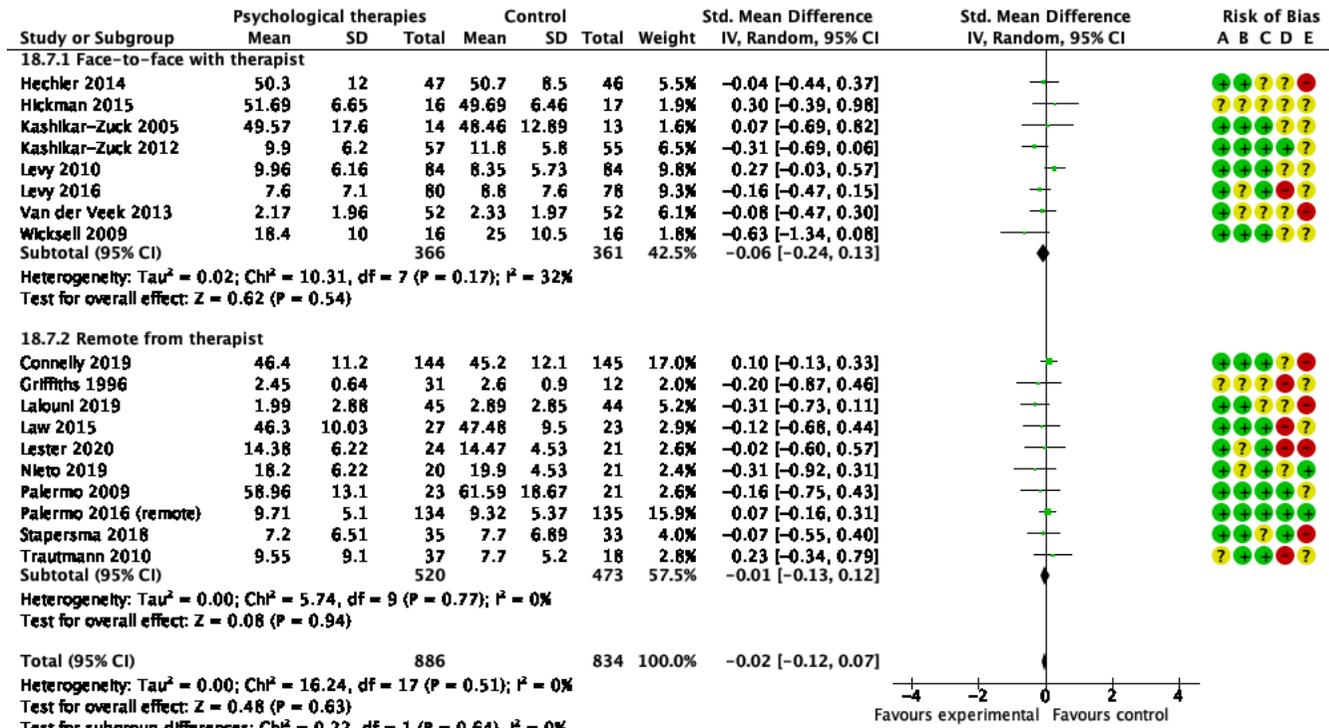
Role functioning (school absence), follow-up



Face to Face with therapist:
 ⊕○○○
 VERY LOW

Remote from therapist:
 ⊕○○○
 VERY LOW

Emotional functioning: Depression, post-treatment



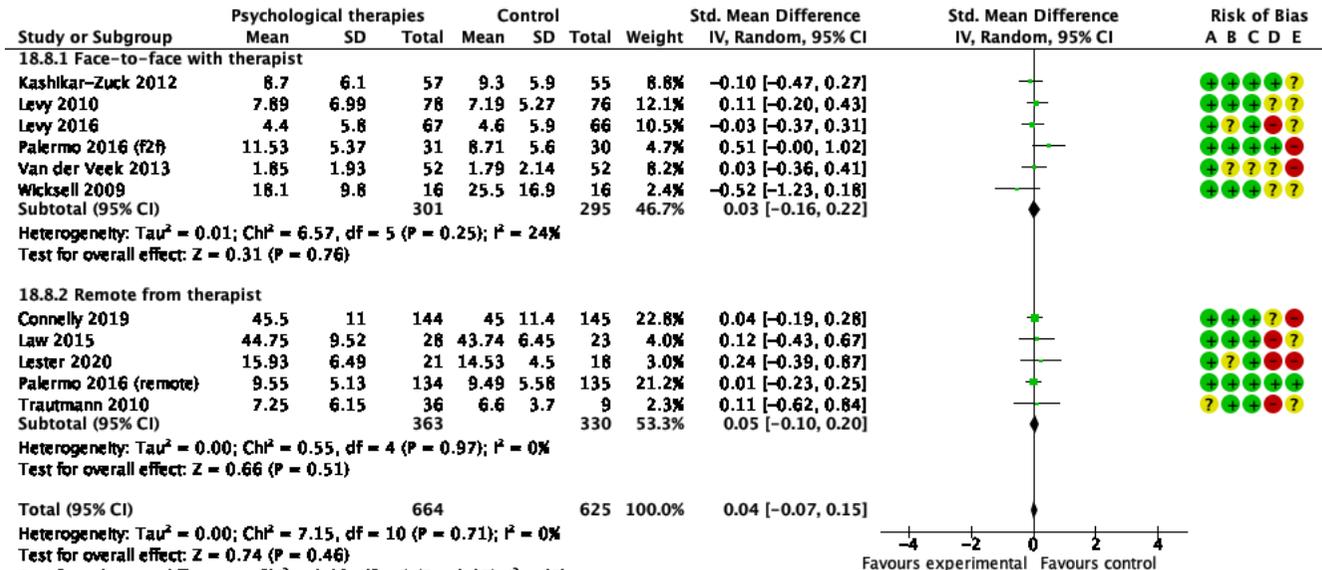
Emotional functioning: Depression, post-treatment
Higher scores indicate higher depressive symptomology

Face to Face with therapist:
⊕⊕⊕○
MODERATE

Remote from therapist:
⊕⊕⊕⊕
HIGH

- Risk of bias legend
- (A) Random sequence generation (selection bias)
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Emotional functioning: Depression, follow-up



Emotional functioning: Depression, follow-up
Higher scores indicate higher depressive symptomology

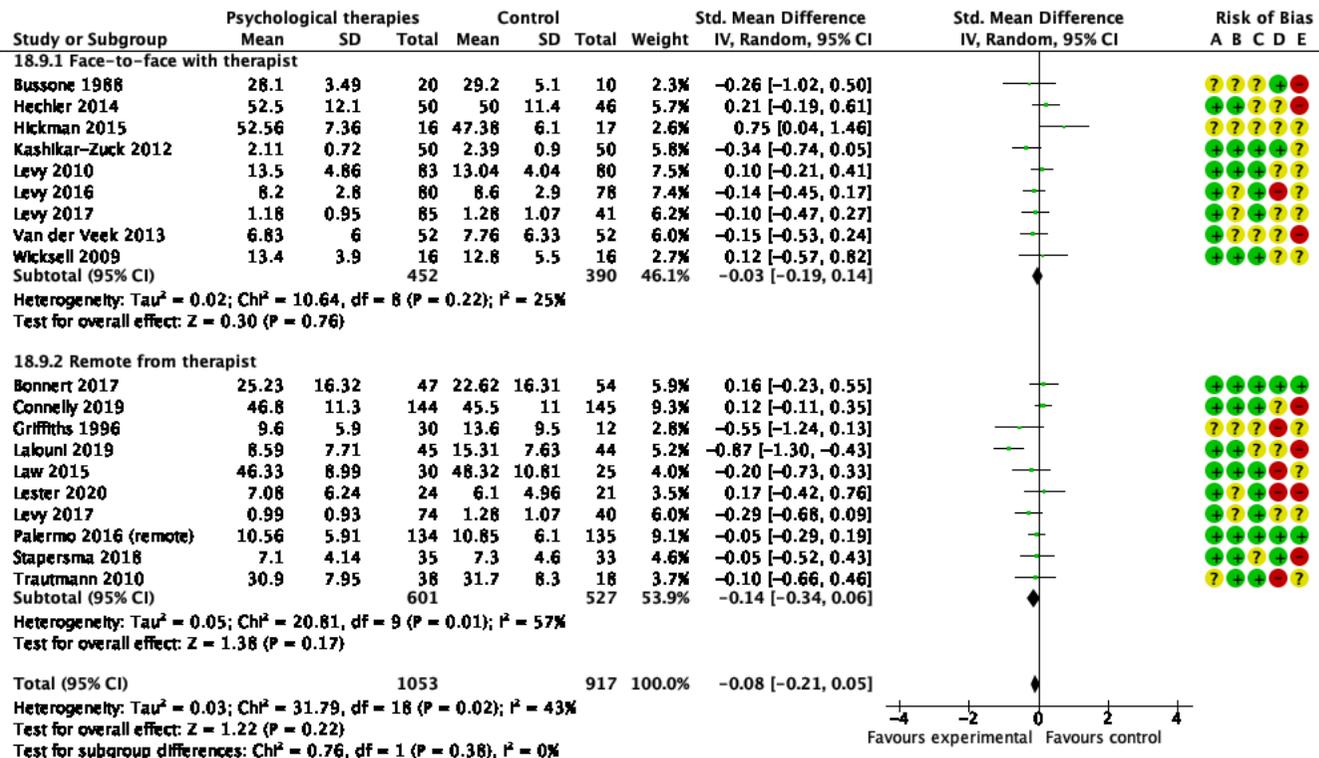
Face to Face with therapist:
⊕⊕⊕⊕
HIGH

Remote from therapist:
⊕⊕⊕⊕
HIGH

Risk of bias legend

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Emotional functioning: Anxiety, post-treatment

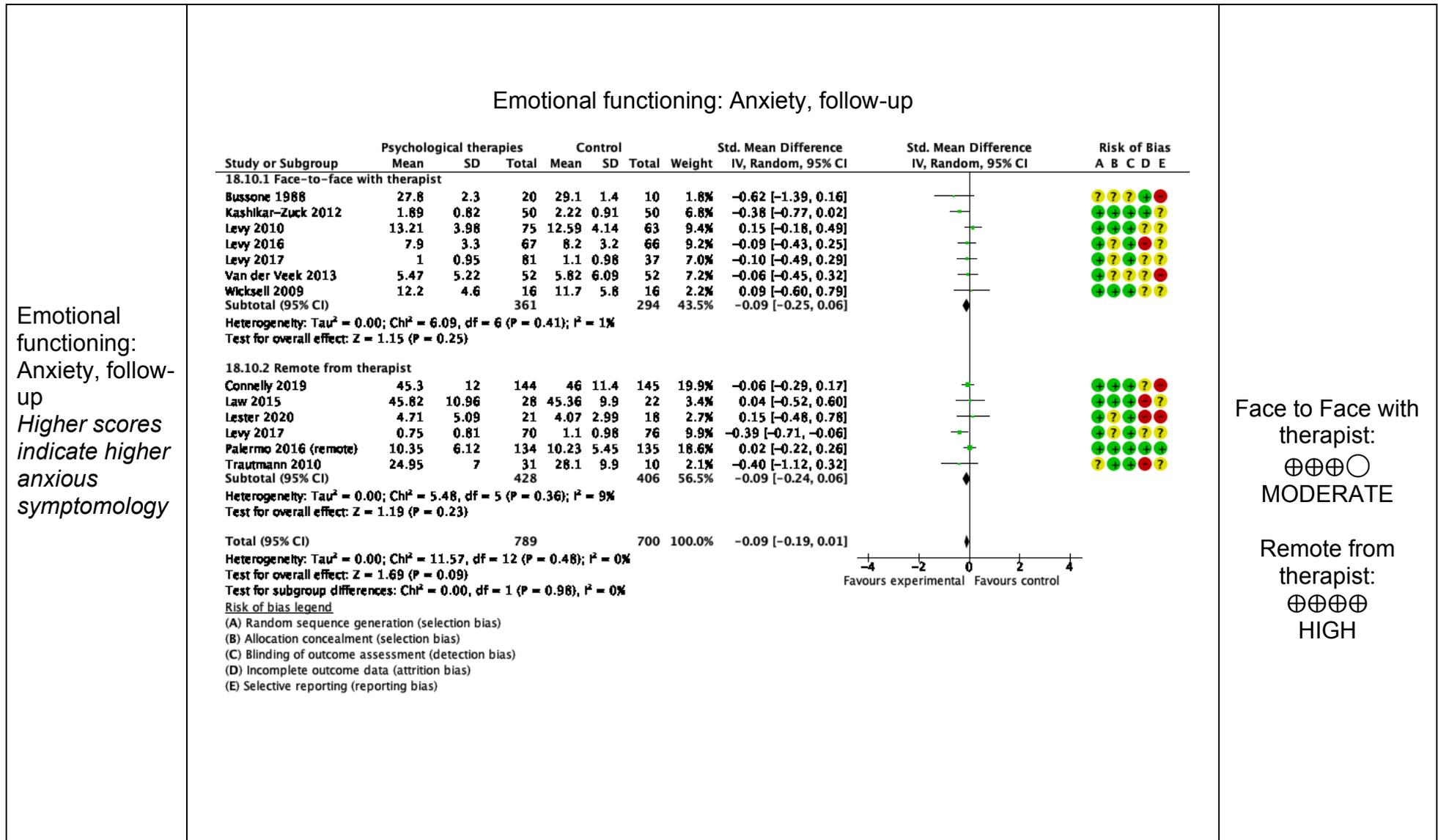


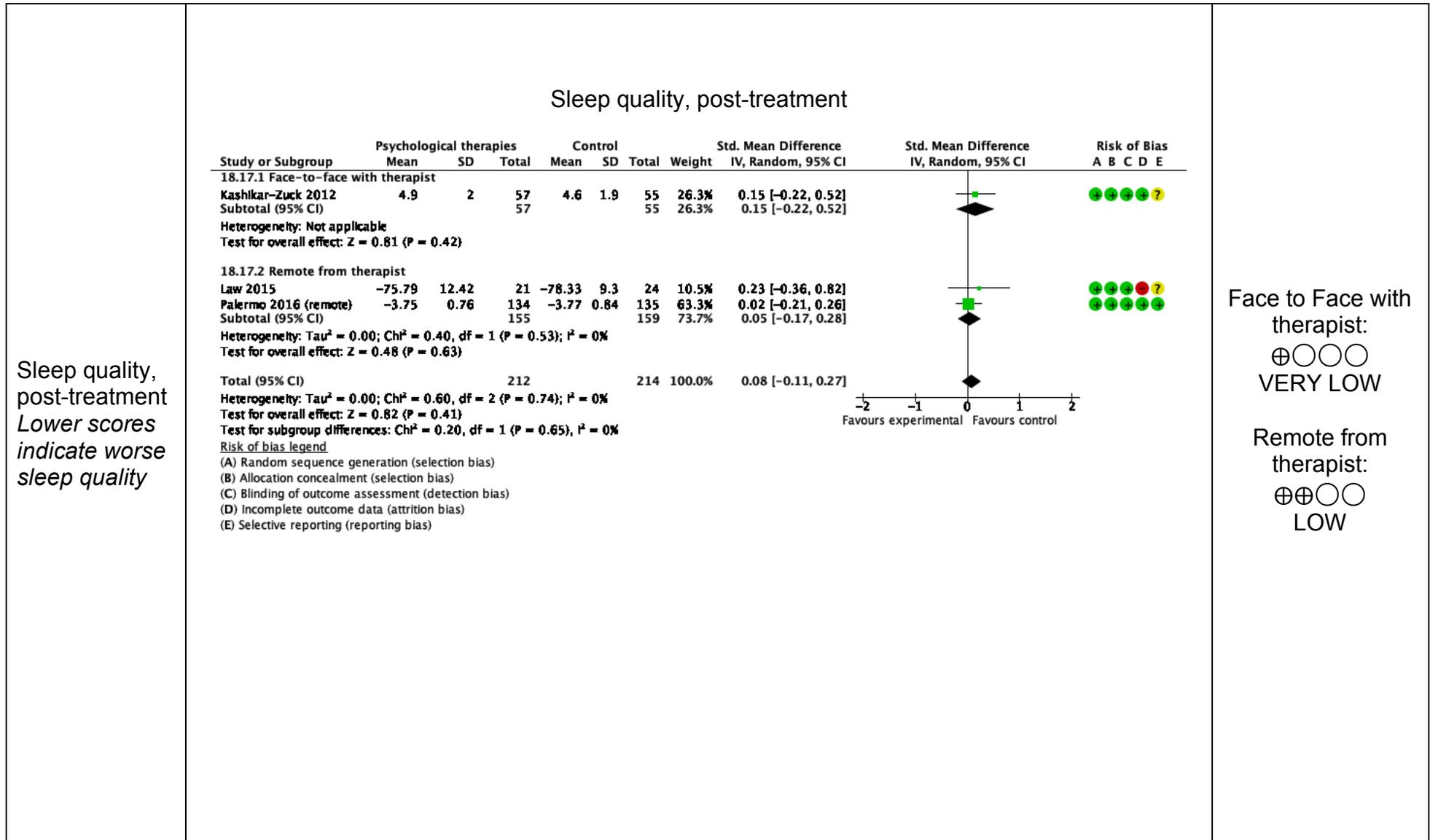
Emotional functioning: Anxiety, post-treatment
Higher scores indicate higher anxious symptomology

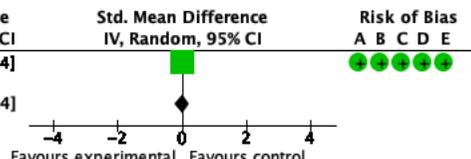
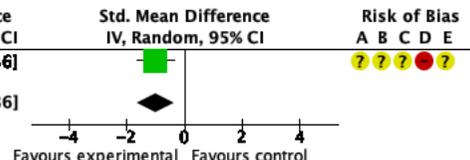
Face to Face with therapist:
⊕⊕⊕○
MODERATE

Remote from therapist:
⊕⊕⊕○
MODERATE

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- (A) Random sequence generation (selection bias)
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 - (C) Blinding of outcome assessment (detection bias)
 - (D) Incomplete outcome data (attrition bias)
 - (E) Selective reporting (reporting bias)





<p>Sleep quality, follow-up Lower scores indicate worse sleep quality</p>	<h3 style="text-align: center;">Sleep quality, follow-up (remotely delivered)</h3> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Study or Subgroup</th> <th colspan="3">Psychological therapies</th> <th colspan="3">Control</th> <th rowspan="2">Weight</th> <th rowspan="2">Std. Mean Difference IV, Random, 95% CI</th> <th rowspan="2">Std. Mean Difference IV, Random, 95% CI</th> <th rowspan="2">Risk of Bias A B C D E</th> </tr> <tr> <th>Mean</th> <th>SD</th> <th>Total</th> <th>Mean</th> <th>SD</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Palermo 2016 (remote)</td> <td>-3.76</td> <td>0.8</td> <td>134</td> <td>-3.76</td> <td>0.77</td> <td>135</td> <td>100.0%</td> <td>0.00 [-0.24, 0.24]</td> <td style="text-align: center;">■</td> <td style="text-align: center;">●●●●●</td> </tr> <tr> <td>Total (95% CI)</td> <td></td> <td></td> <td>134</td> <td></td> <td></td> <td>135</td> <td>100.0%</td> <td>0.00 [-0.24, 0.24]</td> <td style="text-align: center;">◆</td> <td></td> </tr> </tbody> </table> <p>Heterogeneity: Not applicable Test for overall effect: Z = 0.00 (P = 1.00)</p> <p><u>Risk of bias legend</u> (A) Random sequence generation (selection bias) (B) Allocation concealment (selection bias) (C) Blinding of outcome assessment (detection bias) (D) Incomplete outcome data (attrition bias) (E) Selective reporting (reporting bias)</p> 	Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference IV, Random, 95% CI	Std. Mean Difference IV, Random, 95% CI	Risk of Bias A B C D E	Mean	SD	Total	Mean	SD	Total	Palermo 2016 (remote)	-3.76	0.8	134	-3.76	0.77	135	100.0%	0.00 [-0.24, 0.24]	■	●●●●●	Total (95% CI)			134			135	100.0%	0.00 [-0.24, 0.24]	◆		<p>Remote from therapist: ⊕⊕○○ LOW</p>
Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference IV, Random, 95% CI					Std. Mean Difference IV, Random, 95% CI	Risk of Bias A B C D E																											
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<p>Activity participation, follow-up (no post-treatment data) Higher scores indicate higher interference with child activities</p>	<h3 style="text-align: center;">Activity participation, follow-up (face-to-face)</h3> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Study or Subgroup</th> <th colspan="3">Psychological therapies</th> <th colspan="3">Control</th> <th rowspan="2">Weight</th> <th rowspan="2">Std. Mean Difference IV, Random, 95% CI</th> <th rowspan="2">Std. Mean Difference IV, Random, 95% CI</th> <th rowspan="2">Risk of Bias A B C D E</th> </tr> <tr> <th>Mean</th> <th>SD</th> <th>Total</th> <th>Mean</th> <th>SD</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Sanders 1994</td> <td>0.3</td> <td>0.8</td> <td>22</td> <td>1.9</td> <td>2.1</td> <td>22</td> <td>100.0%</td> <td>-0.99 [-1.62, -0.36]</td> <td style="text-align: center;">■</td> <td style="text-align: center;">? ? ? ?</td> </tr> <tr> <td>Total (95% CI)</td> <td></td> <td></td> <td>22</td> <td></td> <td></td> <td>22</td> <td>100.0%</td> <td>-0.99 [-1.62, -0.36]</td> <td style="text-align: center;">◆</td> <td></td> </tr> </tbody> </table> <p>Heterogeneity: Not applicable Test for overall effect: Z = 3.08 (P = 0.002)</p> <p><u>Risk of bias legend</u> (A) Random sequence generation (selection bias) (B) Allocation concealment (selection bias) (C) Blinding of outcome assessment (detection bias) (D) Incomplete outcome data (attrition bias) (E) Selective reporting (reporting bias)</p> 	Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference IV, Random, 95% CI	Std. Mean Difference IV, Random, 95% CI	Risk of Bias A B C D E	Mean	SD	Total	Mean	SD	Total	Sanders 1994	0.3	0.8	22	1.9	2.1	22	100.0%	-0.99 [-1.62, -0.36]	■	? ? ? ?	Total (95% CI)			22			22	100.0%	-0.99 [-1.62, -0.36]	◆		<p>Face to Face with therapist: ⊕○○○ VERY LOW</p>
Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference IV, Random, 95% CI					Std. Mean Difference IV, Random, 95% CI	Risk of Bias A B C D E																											
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Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference		Risk of Bias
	Mean	SD	Total	Mean	SD	Total		IV, Random, 95% CI	IV, Random, 95% CI	
Global satisfaction with treatment, post-treatment										
18.20.1 Face-to-face with therapist										
Kroener-Herwig 2002	-2.65	0.55	29	-2.37	0.79	27	10.5%	-0.41	[-0.94, 0.12]	⚠⚠⚠⚠⚠
Larsson 1987a	-4.1	0.6	14	-3.9	0.5	16	5.6%	-0.35	[-1.08, 0.37]	⚠⚠⚠⚠⚠
Sanders 1994	-59.42	9.94	22	-50.17	9.28	22	7.5%	-0.94	[-1.57, -0.32]	⚠⚠⚠⚠⚠
Subtotal (95% CI)			65			65	23.7%	-0.57	[-0.93, -0.21]	⚠⚠⚠⚠⚠
Heterogeneity: Tau ² = 0.00; Chi ² = 2.07, df = 2 (P = 0.35); I ² = 4%										
Test for overall effect: Z = 3.08 (P = 0.002)										
18.20.2 Remote from therapist										
Bonnert 2017	-25.23	16.32	47	-22.62	16.31	54	19.3%	-0.16	[-0.55, 0.23]	⊕⊕⊕⊕⊕
Palermo 2016 (remote)	-32.2	4.7	134	-29.9		5	50.4%	-0.47	[-0.71, -0.23]	⊕⊕⊕⊕⊕
Trautmann 2010	-2.3	0.6	17	-2	0.9	18	6.6%	-0.38	[-1.05, 0.29]	⚠⊕⊕⚠⚠
Subtotal (95% CI)			198			207	76.3%	-0.39	[-0.58, -0.19]	⚠⊕⊕⚠⚠
Heterogeneity: Tau ² = 0.00; Chi ² = 1.78, df = 2 (P = 0.41); I ² = 0%										
Test for overall effect: Z = 3.83 (P = 0.0001)										
Total (95% CI)										
			263			272	100.0%	-0.43	[-0.60, -0.26]	
Heterogeneity: Tau ² = 0.00; Chi ² = 4.63, df = 5 (P = 0.46); I ² = 0%										
Test for overall effect: Z = 4.88 (P < 0.00001)										
Test for subgroup differences: Chi ² = 0.75, df = 1 (P = 0.39), I ² = 0%										
<u>Risk of bias legend</u>										
(A) Random sequence generation (selection bias)										
(B) Allocation concealment (selection bias)										
(C) Blinding of outcome assessment (detection bias)										
(D) Incomplete outcome data (attrition bias)										
(E) Selective reporting (reporting bias)										
Global satisfaction with treatment, follow-up										
Palermo 2016 (remote)										
	-31.9	4.9	134	-29.7	5.9	135	100.0%	-2.20	[-3.50, -0.90]	⊕⊕⊕⊕⊕
Total (95% CI)										
			134			135	100.0%	-2.20	[-3.50, -0.90]	
Heterogeneity: Not applicable										
Test for overall effect: Z = 3.33 (P = 0.0009)										
<u>Risk of bias legend</u>										
(A) Random sequence generation (selection bias)										
(B) Allocation concealment (selection bias)										
(C) Blinding of outcome assessment (detection bias)										
(D) Incomplete outcome data (attrition bias)										
(E) Selective reporting (reporting bias)										

Global satisfaction with treatment, post-treatment
Lower scores indicate higher satisfaction with treatment

Face to Face with therapist:
⊕○○○
VERY LOW

Remote from therapist:
⊕⊕○○
LOW

Global satisfaction with treatment, follow-up
Lower scores indicate higher satisfaction with treatment

Remote from therapist:
⊕○○○
VERY LOW

<p>Patient global impression of change, post-treatment <i>Lower scores indicate higher impression of change</i></p>	<p style="text-align: center;">Patient global impression of change, post-treatment (remotely delivered)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Study or Subgroup</th> <th colspan="3">Psychological therapies</th> <th colspan="3">Control</th> <th rowspan="2">Weight</th> <th rowspan="2">Std. Mean Difference IV, Random, 95% CI</th> <th rowspan="2">Std. Mean Difference IV, Random, 95% CI</th> <th rowspan="2">Risk of Bias A B C D E</th> </tr> <tr> <th>Mean</th> <th>SD</th> <th>Total</th> <th>Mean</th> <th>SD</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Palermo 2020</td> <td>-3.9</td> <td>1.8</td> <td>73</td> <td>-2.9</td> <td>1.8</td> <td>70</td> <td>100.0%</td> <td>-0.55 [-0.89, -0.22]</td> <td></td> <td></td> </tr> <tr> <td>Total (95% CI)</td> <td></td> <td></td> <td>73</td> <td></td> <td></td> <td>70</td> <td>100.0%</td> <td>-0.55 [-0.89, -0.22]</td> <td></td> <td></td> </tr> </tbody> </table> <p>Heterogeneity: Not applicable Test for overall effect: Z = 3.24 (P = 0.001)</p> <p><u>Risk of bias legend</u> (A) Random sequence generation (selection bias) (B) Allocation concealment (selection bias) (C) Blinding of outcome assessment (detection bias) (D) Incomplete outcome data (attrition bias) (E) Selective reporting (reporting bias)</p>	Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference IV, Random, 95% CI	Std. Mean Difference IV, Random, 95% CI	Risk of Bias A B C D E	Mean	SD	Total	Mean	SD	Total	Palermo 2020	-3.9	1.8	73	-2.9	1.8	70	100.0%	-0.55 [-0.89, -0.22]			Total (95% CI)			73			70	100.0%	-0.55 [-0.89, -0.22]			<p>Remote from therapist: ⊕○○○ VERY LOW</p>
Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference IV, Random, 95% CI					Std. Mean Difference IV, Random, 95% CI	Risk of Bias A B C D E																											
	Mean	SD	Total	Mean	SD	Total																																			
Palermo 2020	-3.9	1.8	73	-2.9	1.8	70	100.0%	-0.55 [-0.89, -0.22]																																	
Total (95% CI)			73			70	100.0%	-0.55 [-0.89, -0.22]																																	
<p>Patient global impression of change, follow-up <i>Lower scores indicate higher impression of change</i></p>	<p style="text-align: center;">Patient global impression of change, follow-up (remotely delivered)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th rowspan="2">Study or Subgroup</th> <th colspan="3">Psychological therapies</th> <th colspan="3">Control</th> <th rowspan="2">Weight</th> <th rowspan="2">Std. Mean Difference IV, Random, 95% CI</th> <th rowspan="2">Std. Mean Difference IV, Random, 95% CI</th> <th rowspan="2">Risk of Bias A B C D E</th> </tr> <tr> <th>Mean</th> <th>SD</th> <th>Total</th> <th>Mean</th> <th>SD</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Palermo 2020</td> <td>-4.2</td> <td>1.7</td> <td>73</td> <td>-3.4</td> <td>2</td> <td>70</td> <td>100.0%</td> <td>-0.43 [-0.76, -0.10]</td> <td></td> <td></td> </tr> <tr> <td>Total (95% CI)</td> <td></td> <td></td> <td>73</td> <td></td> <td></td> <td>70</td> <td>100.0%</td> <td>-0.43 [-0.76, -0.10]</td> <td></td> <td></td> </tr> </tbody> </table> <p>Heterogeneity: Not applicable Test for overall effect: Z = 2.54 (P = 0.01)</p> <p><u>Risk of bias legend</u> (A) Random sequence generation (selection bias) (B) Allocation concealment (selection bias) (C) Blinding of outcome assessment (detection bias) (D) Incomplete outcome data (attrition bias) (E) Selective reporting (reporting bias)</p>	Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference IV, Random, 95% CI	Std. Mean Difference IV, Random, 95% CI	Risk of Bias A B C D E	Mean	SD	Total	Mean	SD	Total	Palermo 2020	-4.2	1.7	73	-3.4	2	70	100.0%	-0.43 [-0.76, -0.10]			Total (95% CI)			73			70	100.0%	-0.43 [-0.76, -0.10]			<p>Remote from therapist: ⊕○○○ VERY LOW</p>
Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference IV, Random, 95% CI					Std. Mean Difference IV, Random, 95% CI	Risk of Bias A B C D E																											
	Mean	SD	Total	Mean	SD	Total																																			
Palermo 2020	-4.2	1.7	73	-3.4	2	70	100.0%	-0.43 [-0.76, -0.10]																																	
Total (95% CI)			73			70	100.0%	-0.43 [-0.76, -0.10]																																	

Appendix G. 10. WHO review: Psychological interventions for children with chronic pain
Subgroup analysis: by size

Comparison: Psychological therapies versus active (non-psychological), standard care or waitlist control; by size

Population: Children and adolescents with chronic pain

Setting: Any setting

Studies: Randomised controlled trials

Risk of bias legend

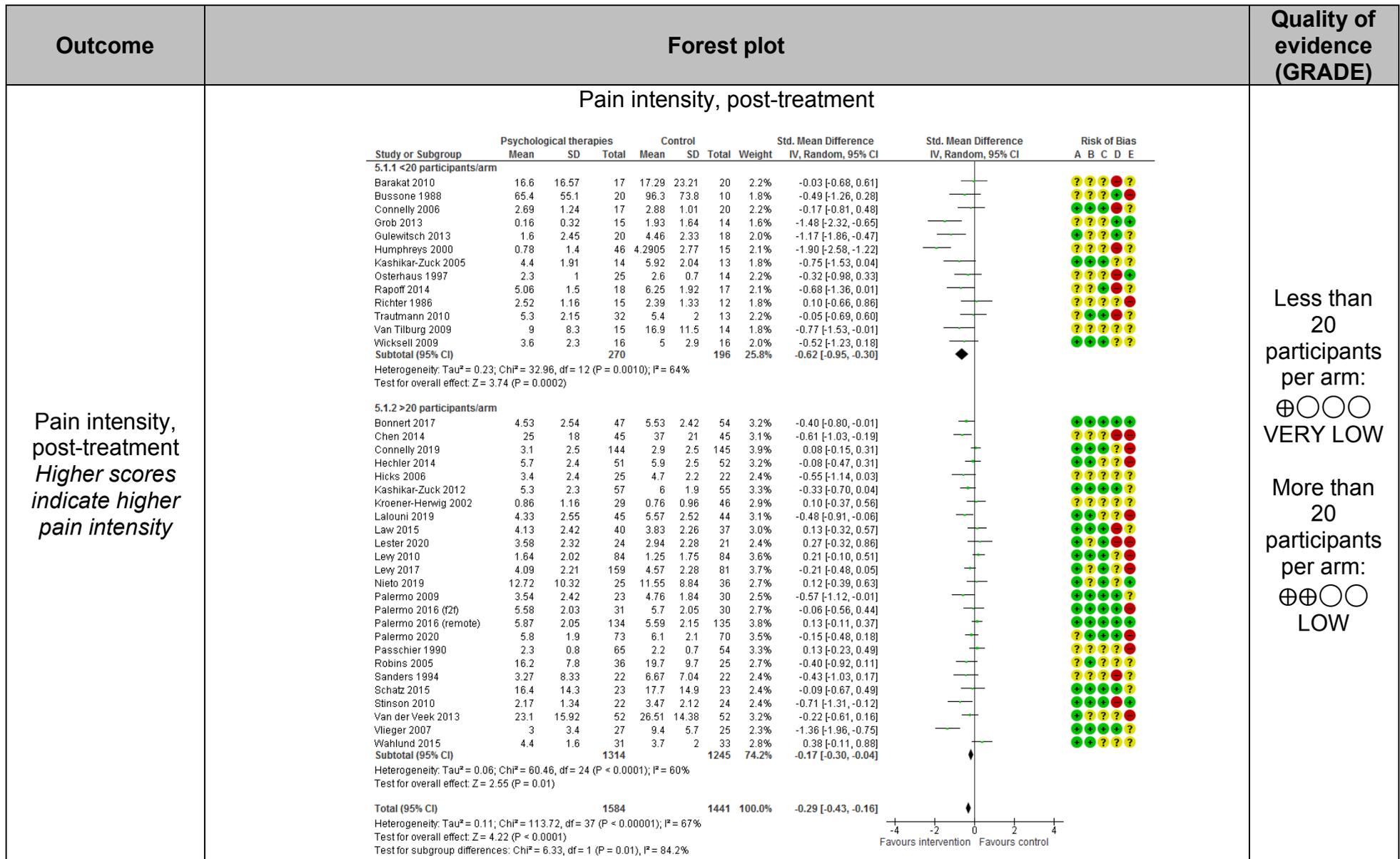
(A) Random sequence generation (selection bias)

(B) Allocation concealment (selection bias)

(C) Blinding of outcome assessment (detection bias)

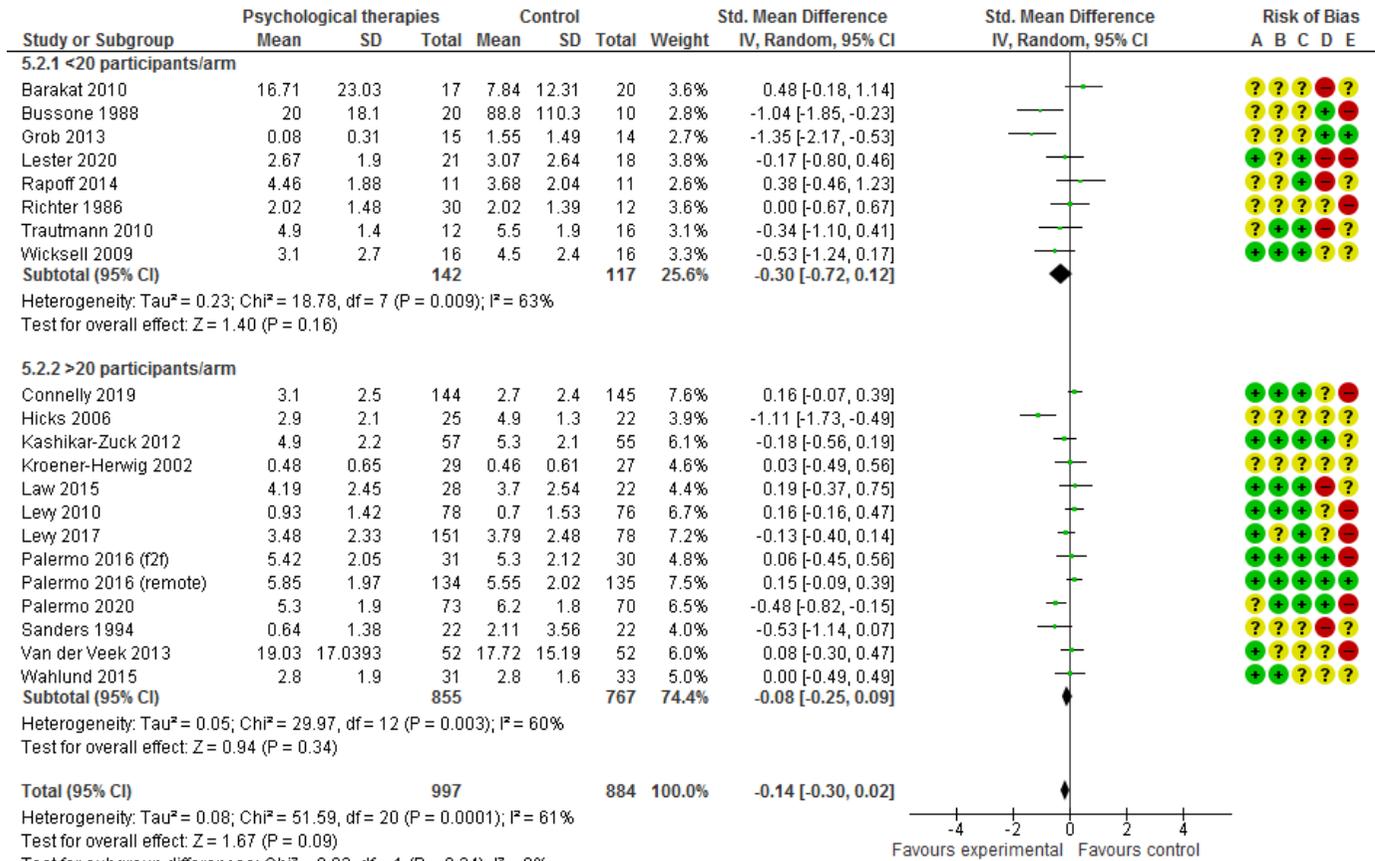
(D) Incomplete outcome data (attrition bias)

(E) Selective reporting (reporting bias)



Pain intensity, follow-up
Higher scores indicate higher pain intensity

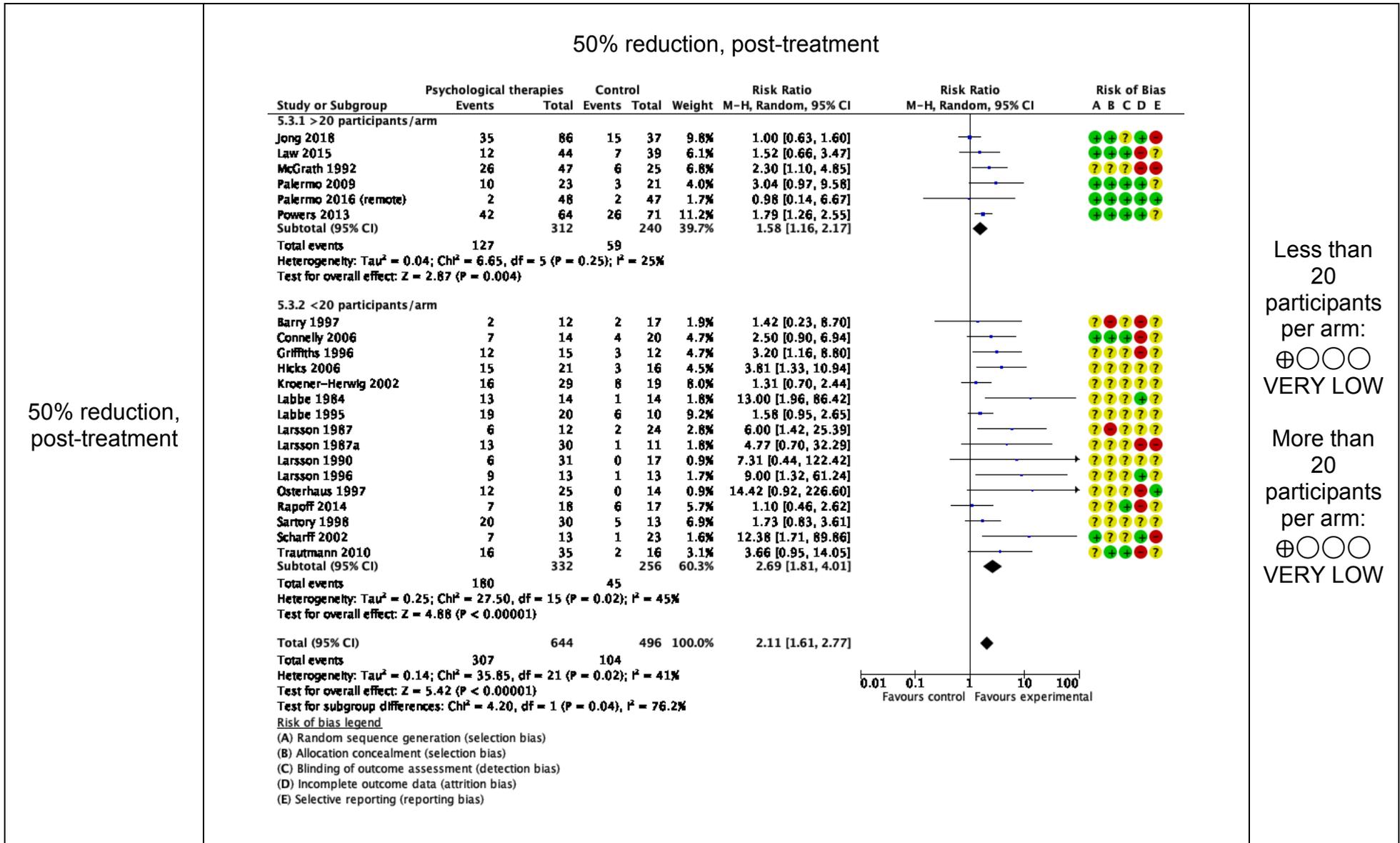
Pain intensity, follow-up

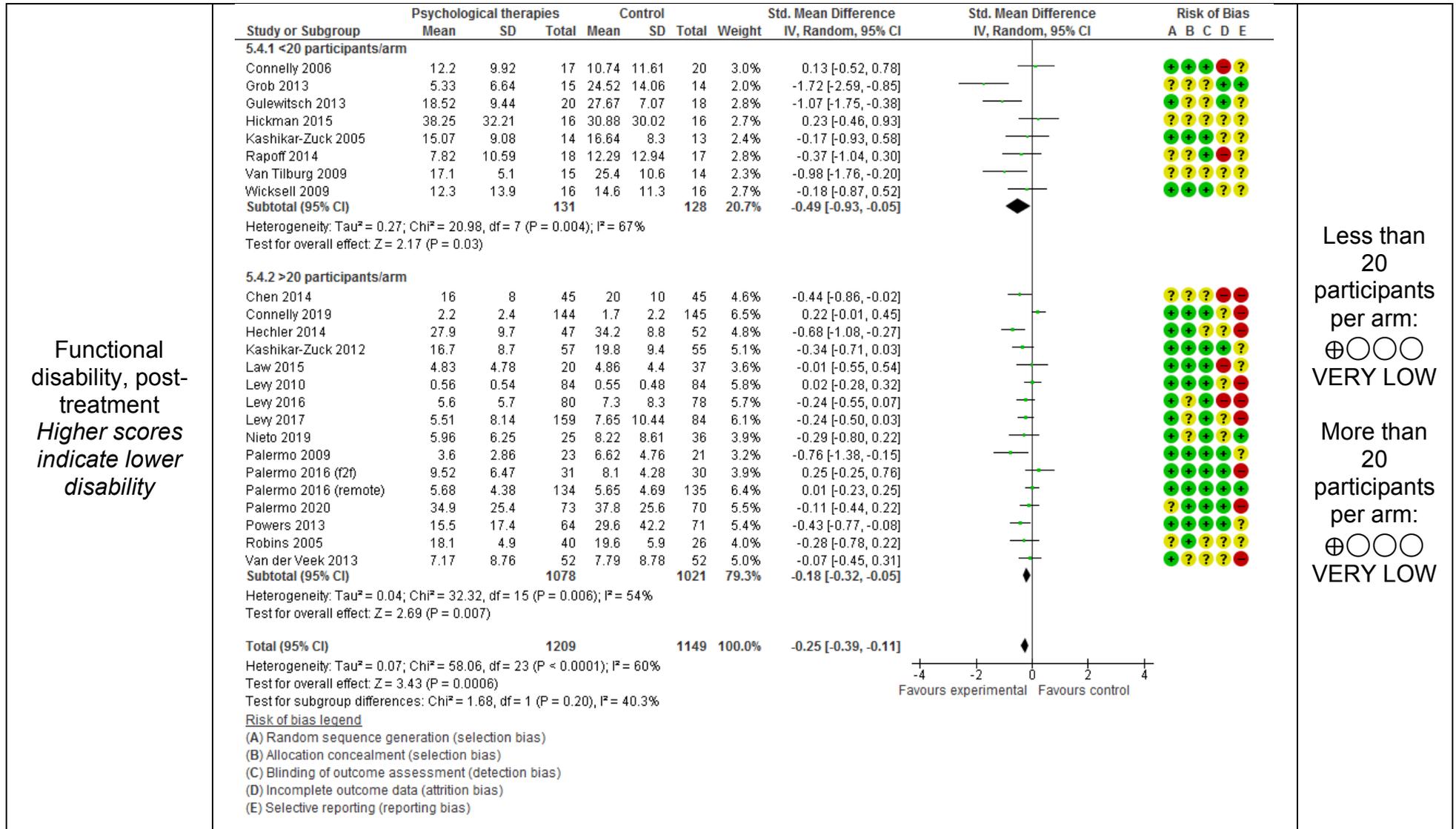


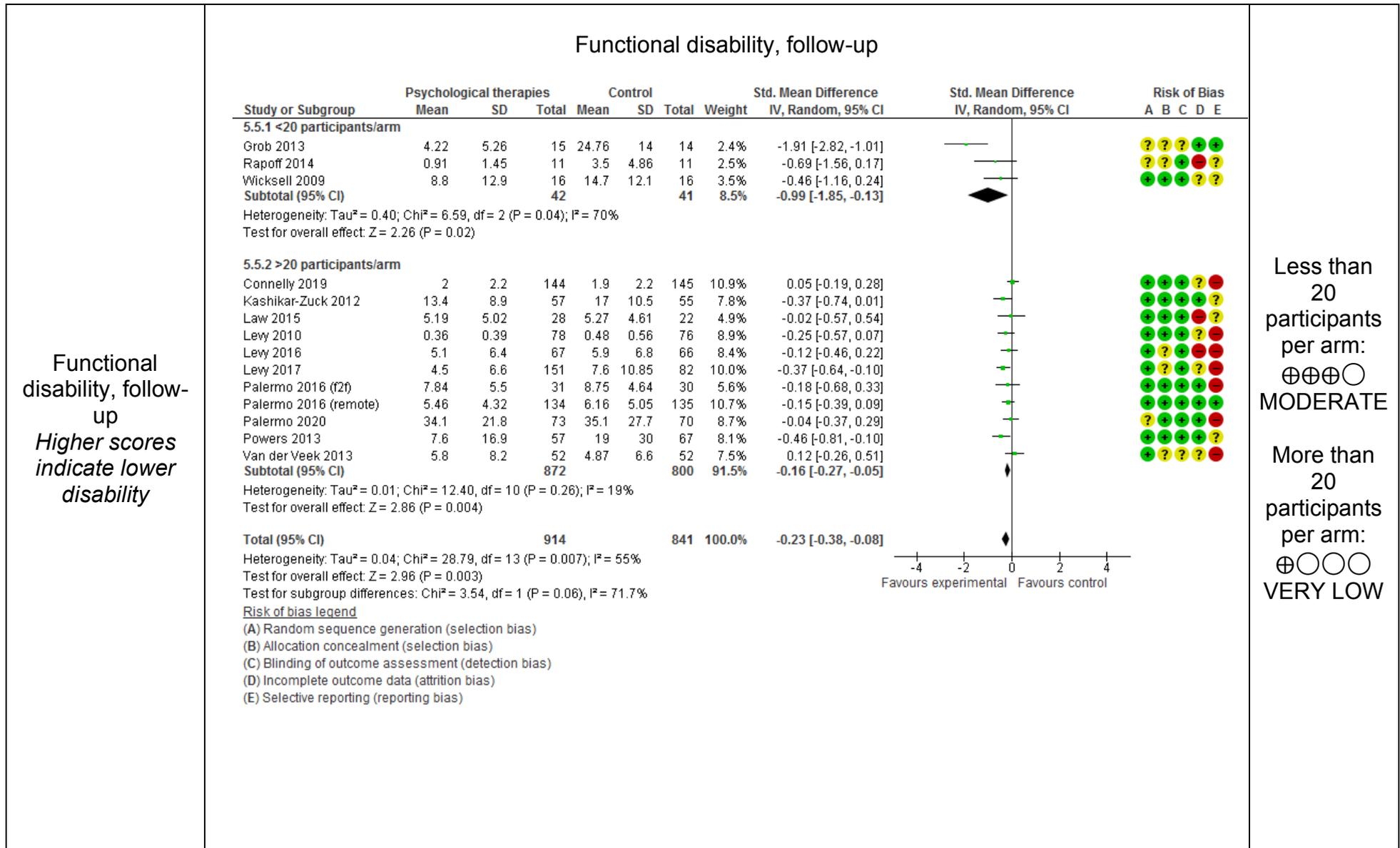
Risk of bias legend
 (A) Random sequence generation (selection bias)
 (B) Allocation concealment (selection bias)
 (C) Blinding of outcome assessment (detection bias)
 (D) Incomplete outcome data (attrition bias)
 (E) Selective reporting (reporting bias)

Less than 20 participants per arm:
⊕○○○
VERY LOW

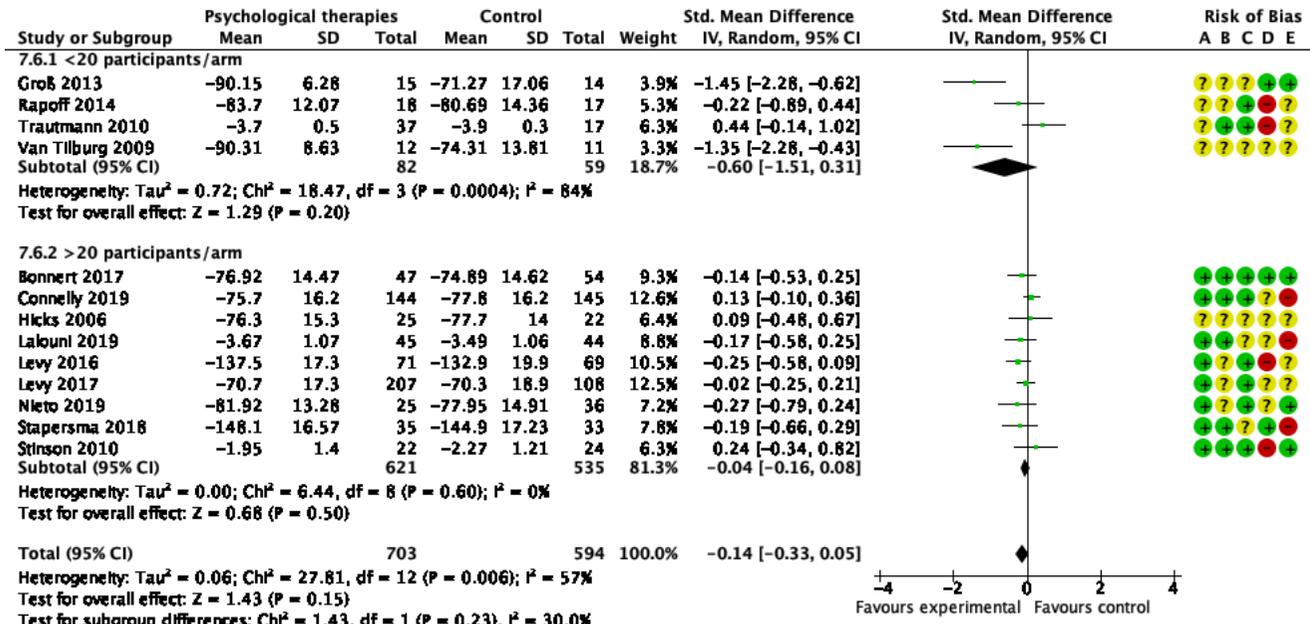
More than 20 participants per arm:
⊕⊕○○
LOW







Health-related quality of life, post-treatment



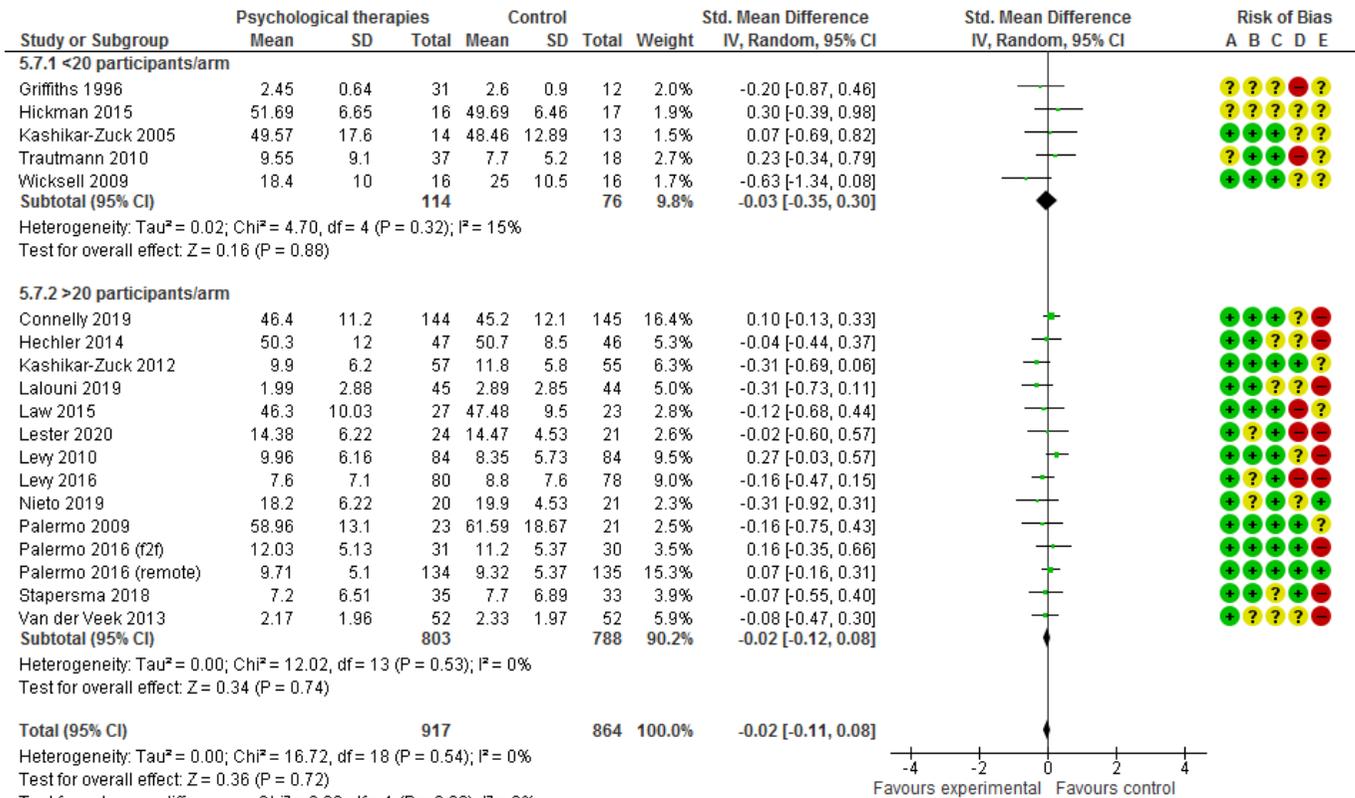
Health-related quality of life, post-treatment
Lower scores indicate better quality of life

Less than 20 participants per arm:
⊕○○○
VERY LOW

More than 20 participants per arm:
⊕⊕⊕⊕
HIGH

- Risk of bias legend**
- (A) Random sequence generation (selection bias)
 - (B) Allocation concealment (selection bias)
 - (C) Blinding of outcome assessment (detection bias)
 - (D) Incomplete outcome data (attrition bias)
 - (E) Selective reporting (reporting bias)

Emotional functioning: Depression, post-treatment



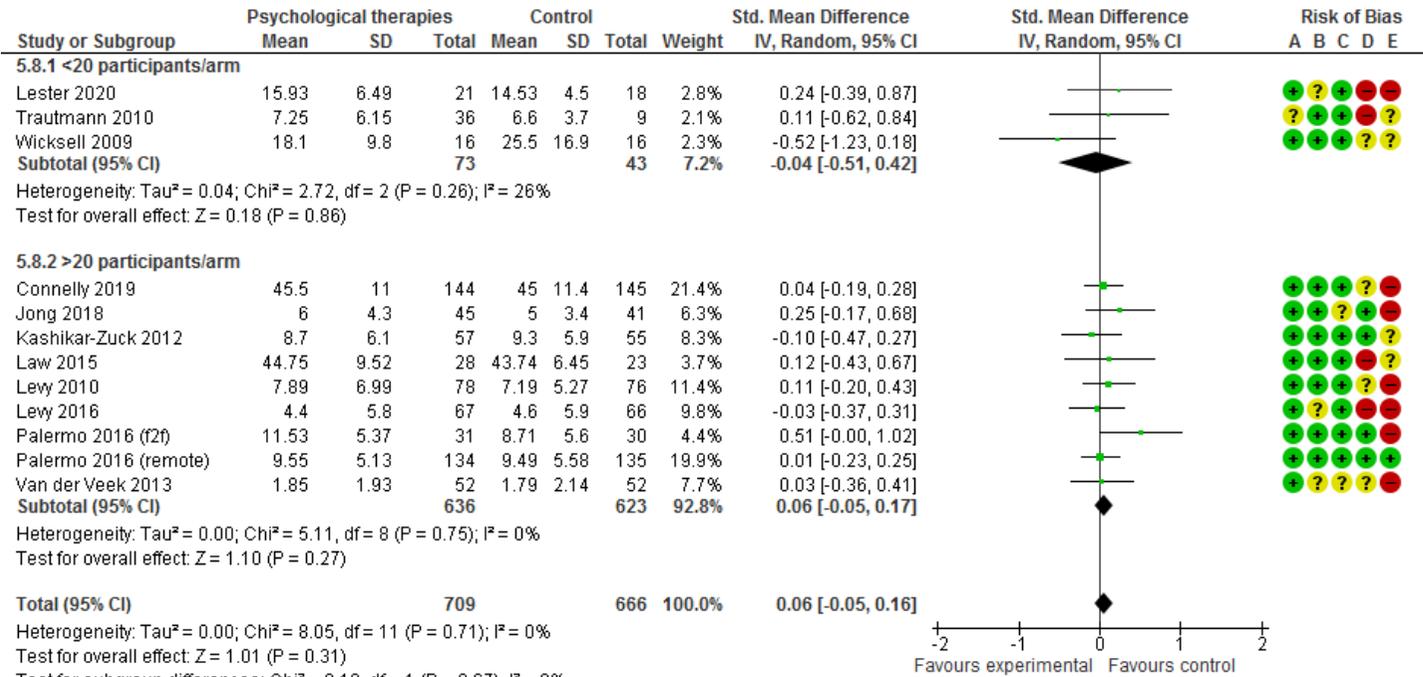
Emotional functioning: Depression, post-treatment
Higher scores indicate higher depressive symptomology

Less than 20 participants per arm:
⊕○○○
VERY LOW

More than 20 participants per arm:
⊕⊕⊕⊕
HIGH

- Risk of bias legend**
- (A) Random sequence generation (selection bias)
 - (B) Allocation concealment (selection bias)
 - (C) Blinding of outcome assessment (detection bias)
 - (D) Incomplete outcome data (attrition bias)
 - (E) Selective reporting (reporting bias)

Emotional functioning: Depression, follow up



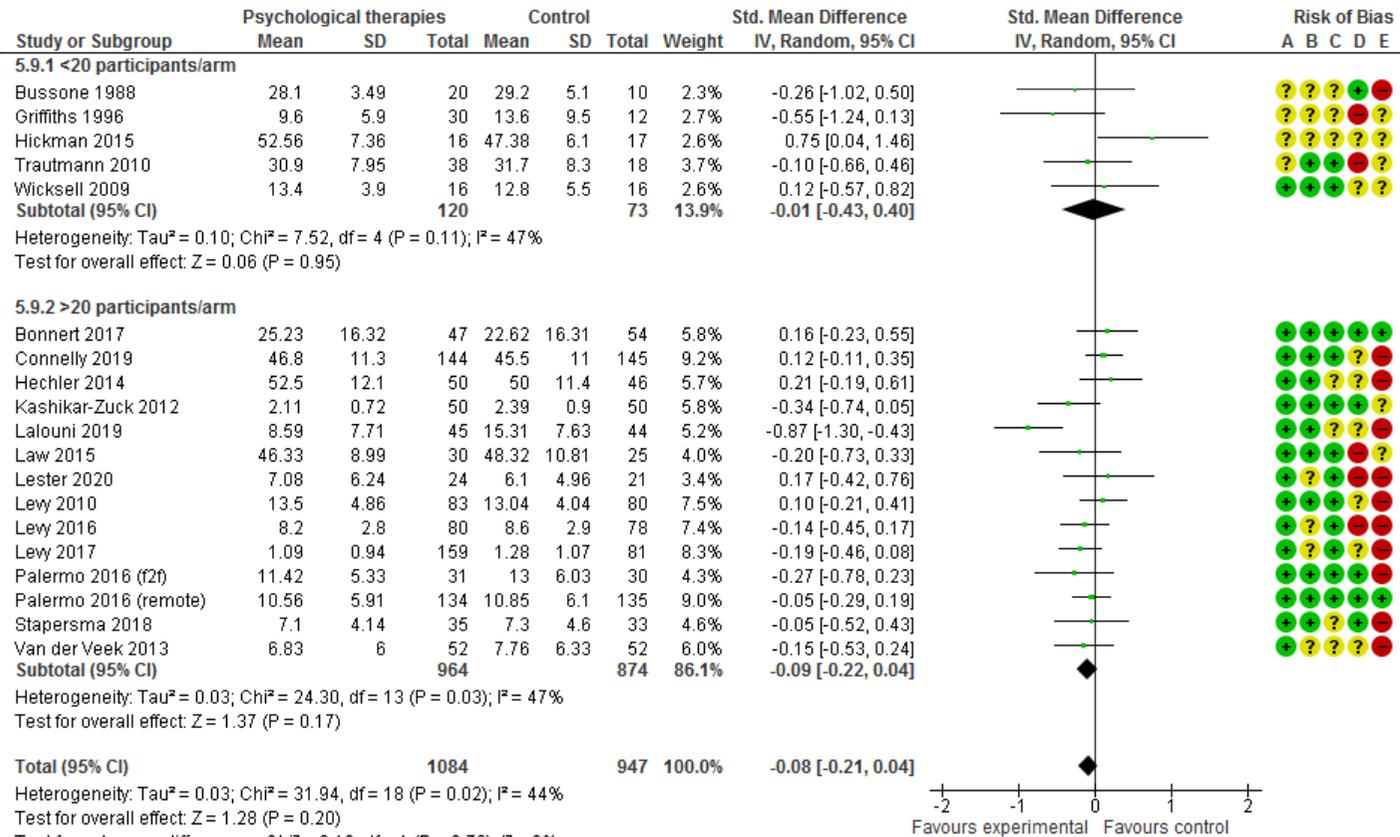
Emotional functioning: Depression, follow up
Higher scores indicate higher depressive symptomology

Less than 20 participants per arm:
⊕○○○
VERY LOW

More than 20 participants per arm:
⊕⊕⊕⊕
HIGH

Risk of bias legend
 (A) Random sequence generation (selection bias)
 (B) Allocation concealment (selection bias)
 (C) Blinding of outcome assessment (detection bias)
 (D) Incomplete outcome data (attrition bias)
 (E) Selective reporting (reporting bias)

Emotional functioning: Anxiety, post-treatment

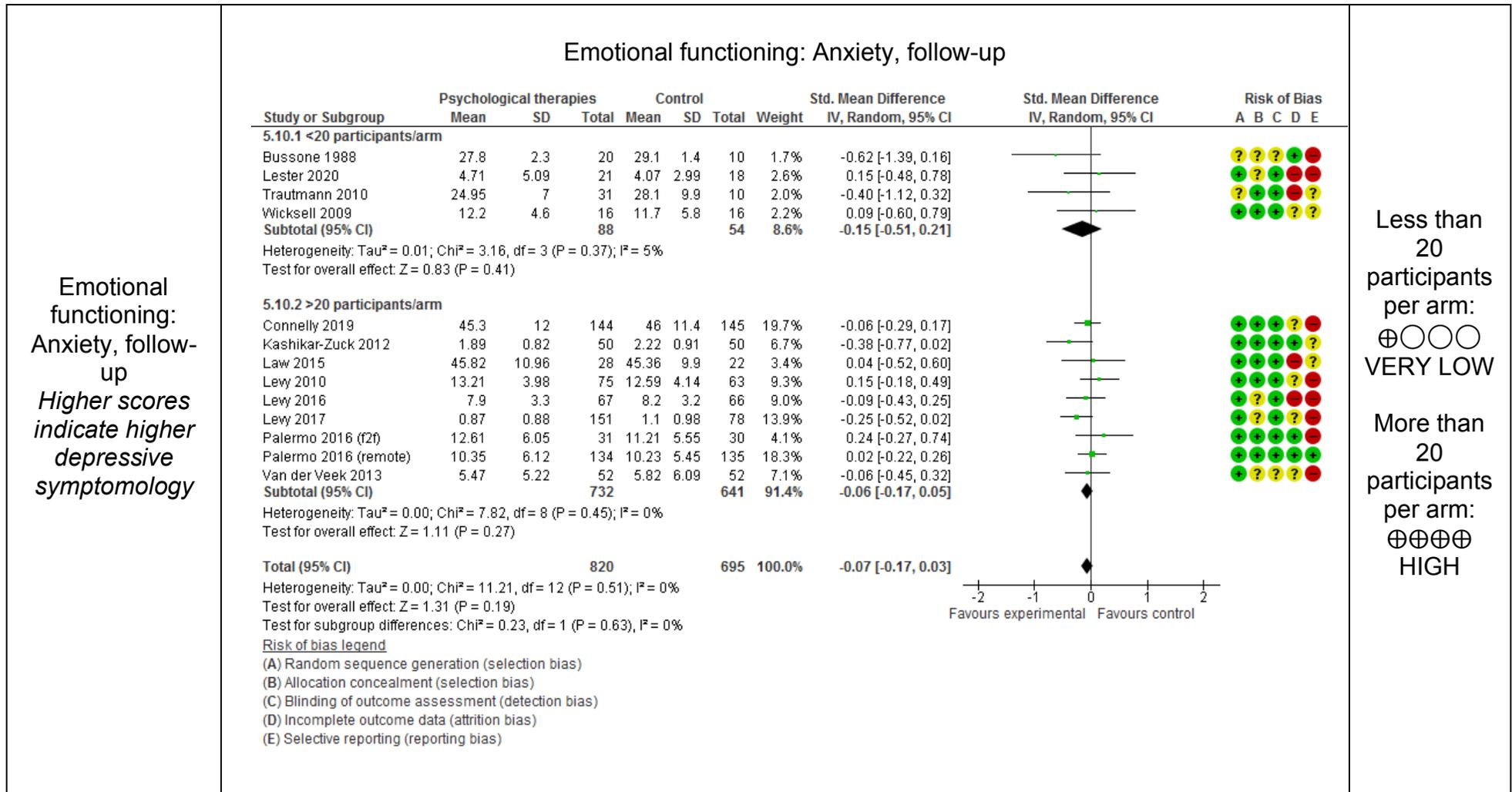


Emotional functioning: Anxiety, post-treatment
Higher scores indicate higher depressive symptomology

Less than 20 participants per arm:
⊕○○○
VERY LOW

More than 20 participants per arm:
⊕⊕⊕⊕
HIGH

- Risk of bias legend**
- (A) Random sequence generation (selection bias)
 - (B) Allocation concealment (selection bias)
 - (C) Blinding of outcome assessment (detection bias)
 - (D) Incomplete outcome data (attrition bias)
 - (E) Selective reporting (reporting bias)



**Appendix G.11. WHO review: Psychological interventions for children with chronic pain
Sensitivity Analysis; excluding non-chronic headache**

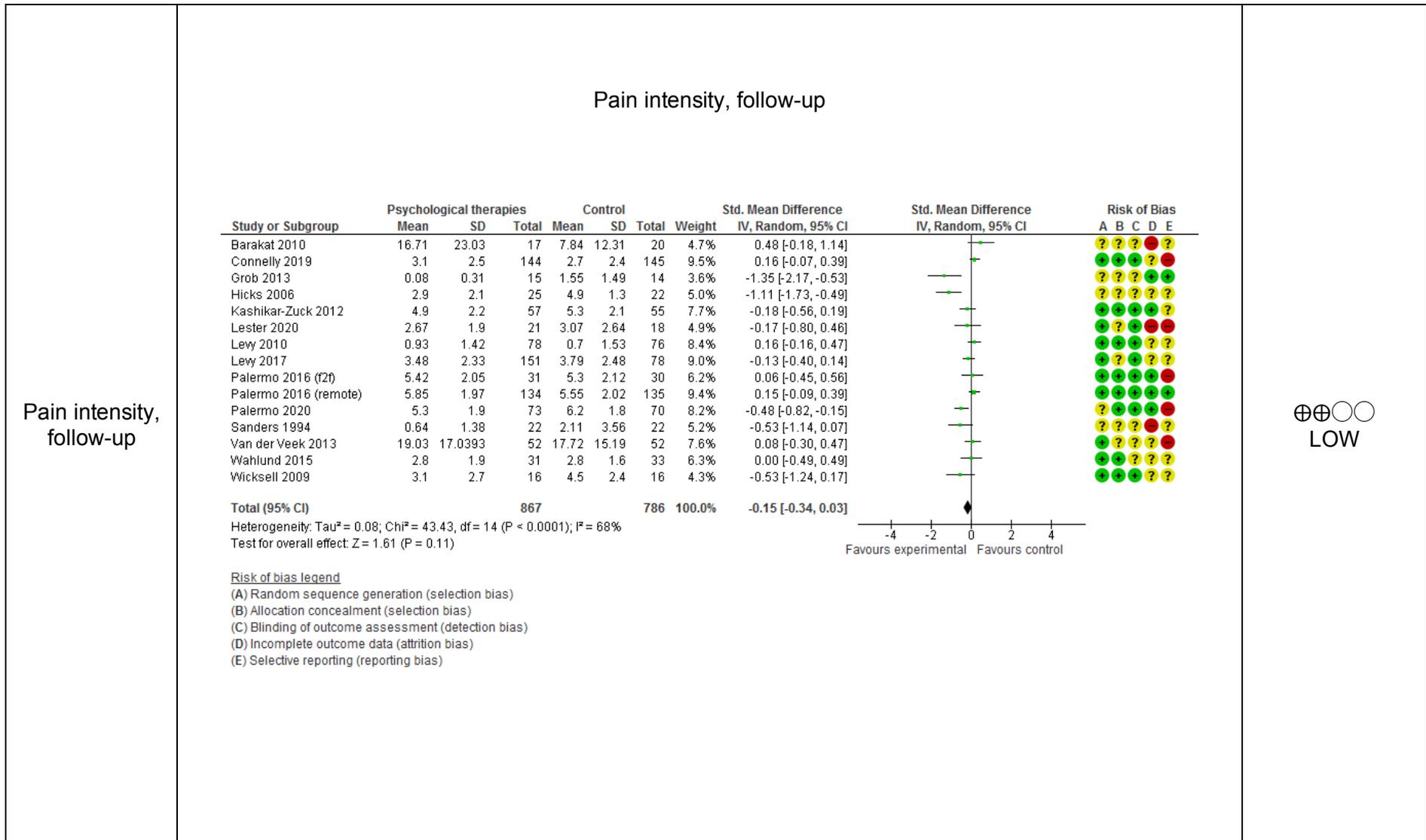
Comparison: Psychological therapies versus active (non-psychological), standard care or waitlist control; excluding studies including children with non-chronic headache

Population: Children and adolescents with chronic pain

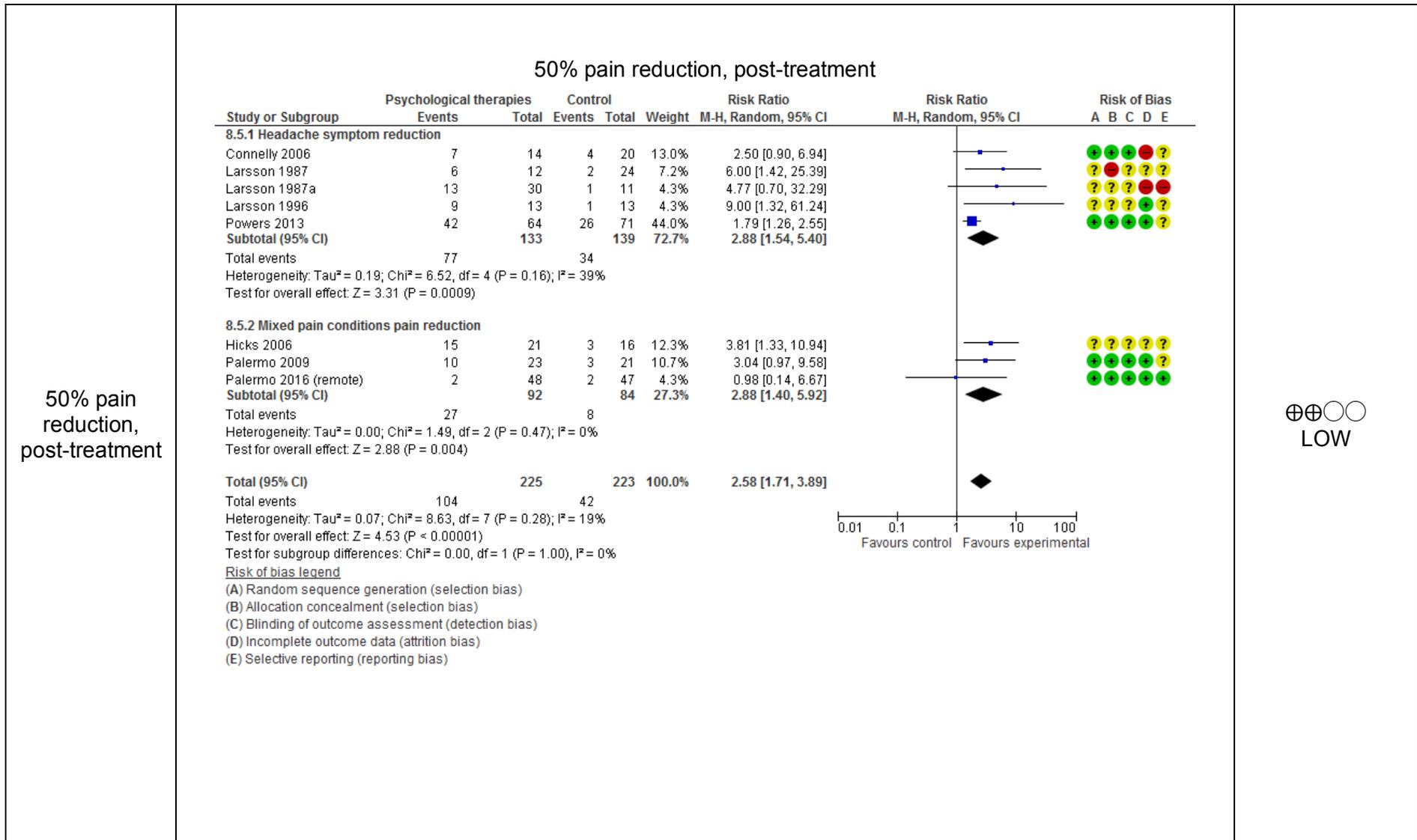
Setting: Any setting

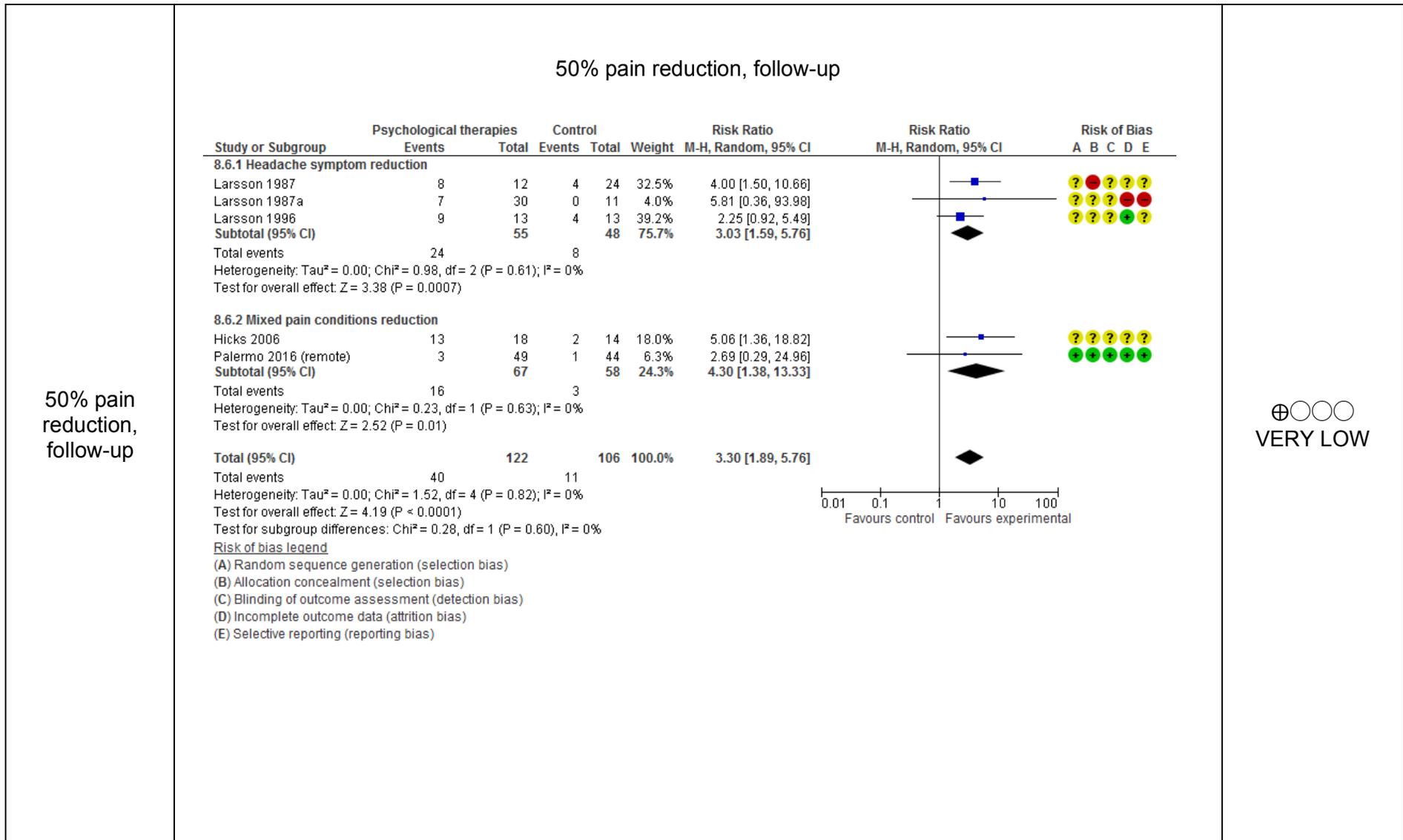
Studies: Randomised controlled trials

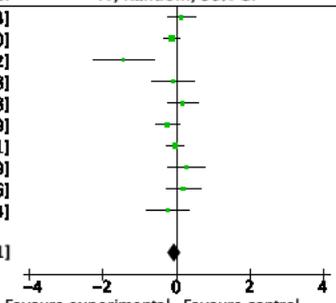
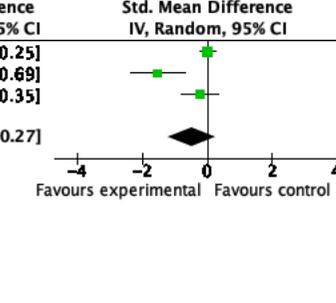
Outcome	Forest Plot										Quality of evidence																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Pain intensity, post-treatment	Pain intensity, post-treatment										 LOW																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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Mean Difference IV, Random, 95% CI</th> <th colspan="5">Risk of Bias</th> </tr> <tr> <th>Mean</th> <th>SD</th> <th>Total</th> <th>Mean</th> <th>SD</th> <th>Total</th> <th>A</th> <th>B</th> <th>C</th> <th>D</th> <th>E</th> </tr> </thead> <tbody> <tr><td>Barakat 2010</td><td>16.6</td><td>16.57</td><td>17</td><td>17.29</td><td>23.21</td><td>20</td><td>3.0%</td><td>-0.03 [-0.88, 0.61]</td><td></td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td></tr> <tr><td>Bonnert 2017</td><td>4.53</td><td>2.54</td><td>47</td><td>5.53</td><td>2.42</td><td>54</td><td>4.1%</td><td>-0.40 [-0.80, -0.01]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Connelly 2019</td><td>3.1</td><td>2.5</td><td>144</td><td>2.9</td><td>2.5</td><td>145</td><td>4.9%</td><td>0.08 [-0.15, 0.31]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Grob 2013</td><td>0.16</td><td>0.32</td><td>15</td><td>1.93</td><td>1.64</td><td>14</td><td>2.3%</td><td>-1.48 [-2.32, -0.65]</td><td></td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td></tr> <tr><td>Gulewitsch 2013</td><td>1.6</td><td>2.45</td><td>20</td><td>4.46</td><td>2.33</td><td>18</td><td>2.8%</td><td>-1.17 [-1.86, -0.47]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Hechler 2014</td><td>5.7</td><td>2.4</td><td>51</td><td>5.9</td><td>2.5</td><td>52</td><td>4.2%</td><td>-0.08 [-0.47, 0.31]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Hicks 2006</td><td>3.4</td><td>2.4</td><td>25</td><td>4.7</td><td>2.2</td><td>22</td><td>3.2%</td><td>-0.55 [-1.14, 0.03]</td><td></td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td></tr> <tr><td>Humphreys 2000</td><td>0.78</td><td>1.4</td><td>46</td><td>4.2905</td><td>2.77</td><td>15</td><td>2.8%</td><td>-1.90 [-2.58, -1.22]</td><td></td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td></tr> <tr><td>Kashikar-Zuck 2005</td><td>4.4</td><td>1.91</td><td>14</td><td>5.92</td><td>2.04</td><td>13</td><td>2.5%</td><td>-0.75 [-1.53, 0.04]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Kashikar-Zuck 2012</td><td>5.3</td><td>2.3</td><td>57</td><td>6</td><td>1.9</td><td>55</td><td>4.3%</td><td>-0.33 [-0.70, 0.04]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Lalouni 2019</td><td>4.33</td><td>2.55</td><td>45</td><td>5.57</td><td>2.52</td><td>44</td><td>4.0%</td><td>-0.48 [-0.91, -0.06]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Lester 2020</td><td>3.58</td><td>2.32</td><td>24</td><td>2.94</td><td>2.28</td><td>21</td><td>3.2%</td><td>0.27 [-0.32, 0.86]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Lew 2010</td><td>1.64</td><td>2.02</td><td>84</td><td>1.25</td><td>1.75</td><td>84</td><td>4.6%</td><td>0.21 [-0.10, 0.51]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Lew 2017</td><td>4.09</td><td>2.21</td><td>159</td><td>4.57</td><td>2.28</td><td>81</td><td>4.7%</td><td>-0.21 [-0.48, 0.05]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Nieto 2019</td><td>12.72</td><td>10.32</td><td>25</td><td>11.55</td><td>8.84</td><td>36</td><td>3.6%</td><td>0.12 [-0.39, 0.63]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Palermo 2009</td><td>3.54</td><td>2.42</td><td>23</td><td>4.76</td><td>1.84</td><td>30</td><td>3.4%</td><td>-0.57 [-1.12, -0.01]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Palermo 2016 (f2f)</td><td>5.58</td><td>2.03</td><td>31</td><td>5.7</td><td>2.05</td><td>30</td><td>3.6%</td><td>-0.06 [-0.56, 0.44]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Palermo 2016 (remote)</td><td>5.87</td><td>2.05</td><td>134</td><td>5.59</td><td>2.15</td><td>135</td><td>4.9%</td><td>0.13 [-0.11, 0.37]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Palermo 2020</td><td>5.8</td><td>1.9</td><td>73</td><td>6.1</td><td>2.1</td><td>70</td><td>4.5%</td><td>-0.15 [-0.48, 0.18]</td><td></td><td>?</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Robins 2005</td><td>16.2</td><td>7.8</td><td>36</td><td>19.7</td><td>9.7</td><td>25</td><td>3.6%</td><td>-0.40 [-0.92, 0.11]</td><td></td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td></tr> <tr><td>Sanders 1994</td><td>3.27</td><td>8.33</td><td>22</td><td>6.67</td><td>7.04</td><td>22</td><td>3.2%</td><td>-0.43 [-1.03, 0.17]</td><td></td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td></tr> <tr><td>Schatz 2015</td><td>16.4</td><td>14.3</td><td>23</td><td>17.7</td><td>14.9</td><td>23</td><td>3.3%</td><td>-0.09 [-0.67, 0.49]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Stinson 2010</td><td>2.17</td><td>1.34</td><td>22</td><td>3.47</td><td>2.12</td><td>24</td><td>3.2%</td><td>-0.71 [-1.31, -0.12]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Van der Veek 2013</td><td>23.1</td><td>15.92</td><td>52</td><td>26.51</td><td>14.38</td><td>52</td><td>4.2%</td><td>-0.22 [-0.61, 0.16]</td><td></td><td>+</td><td>?</td><td>?</td><td>?</td><td>?</td></tr> <tr><td>Van Tilburg 2009</td><td>9</td><td>8.3</td><td>15</td><td>16.9</td><td>11.5</td><td>14</td><td>2.5%</td><td>-0.77 [-1.53, -0.01]</td><td></td><td>?</td><td>?</td><td>?</td><td>?</td><td>?</td></tr> <tr><td>Vlieger 2007</td><td>3</td><td>3.4</td><td>27</td><td>9.4</td><td>5.7</td><td>25</td><td>3.1%</td><td>-1.36 [-1.96, -0.75]</td><td></td><td>+</td><td>+</td><td>+</td><td>+</td><td>+</td></tr> <tr><td>Wahlund 2015</td><td>4.4</td><td>1.6</td><td>31</td><td>3.7</td><td>2</td><td>33</td><td>3.7%</td><td>0.38 [-0.11, 0.88]</td><td></td><td>+</td><td>+</td><td>?</td><td>?</td><td>?</td></tr> <tr><td>Wicksell 2009</td><td>3.6</td><td>2.3</td><td>16</td><td>5</td><td>2.9</td><td>16</td><td>2.7%</td><td>-0.52 [-1.23, 0.18]</td><td></td><td>+</td><td>+</td><td>?</td><td>?</td><td>?</td></tr> <tr> <td>Total (95% CI)</td> <td></td> <td></td> <td>1278</td> <td></td> <td></td> <td>1173</td> <td>100.0%</td> <td>-0.34 [-0.51, -0.18]</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>Heterogeneity: Tau² = 0.13; Chi² = 100.12, df = 27 (P < 0.00001); I² = 73% Test for overall effect: Z = 4.03 (P < 0.0001)</p> <p><u>Risk of bias legend</u> (A) Random sequence generation (selection bias) (B) Allocation concealment (selection bias) (C) Blinding of outcome assessment (detection bias) (D) Incomplete outcome data (attrition bias) (E) Selective reporting (reporting bias)</p>	Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference IV, Random, 95% CI		Std. Mean Difference IV, Random, 95% CI	Risk of Bias					Mean	SD	Total	Mean	SD	Total	A	B	C	D	E	Barakat 2010	16.6	16.57	17	17.29	23.21	20	3.0%	-0.03 [-0.88, 0.61]		?	?	?	?	?	Bonnert 2017	4.53	2.54	47	5.53	2.42	54	4.1%	-0.40 [-0.80, -0.01]		+	+	+	+	+	Connelly 2019	3.1	2.5	144	2.9	2.5	145	4.9%	0.08 [-0.15, 0.31]		+	+	+	+	+	Grob 2013	0.16	0.32	15	1.93	1.64	14	2.3%	-1.48 [-2.32, -0.65]		?	?	?	?	?	Gulewitsch 2013	1.6	2.45	20	4.46	2.33	18	2.8%	-1.17 [-1.86, -0.47]		+	+	+	+	+	Hechler 2014	5.7	2.4	51	5.9	2.5	52	4.2%	-0.08 [-0.47, 0.31]		+	+	+	+	+	Hicks 2006	3.4	2.4	25	4.7	2.2	22	3.2%	-0.55 [-1.14, 0.03]		?	?	?	?	?	Humphreys 2000	0.78	1.4	46	4.2905	2.77	15	2.8%	-1.90 [-2.58, -1.22]		?	?	?	?	?	Kashikar-Zuck 2005	4.4	1.91	14	5.92	2.04	13	2.5%	-0.75 [-1.53, 0.04]		+	+	+	+	+	Kashikar-Zuck 2012	5.3	2.3	57	6	1.9	55	4.3%	-0.33 [-0.70, 0.04]		+	+	+	+	+	Lalouni 2019	4.33	2.55	45	5.57	2.52	44	4.0%	-0.48 [-0.91, -0.06]		+	+	+	+	+	Lester 2020	3.58	2.32	24	2.94	2.28	21	3.2%	0.27 [-0.32, 0.86]		+	+	+	+	+	Lew 2010	1.64	2.02	84	1.25	1.75	84	4.6%	0.21 [-0.10, 0.51]		+	+	+	+	+	Lew 2017	4.09	2.21	159	4.57	2.28	81	4.7%	-0.21 [-0.48, 0.05]		+	+	+	+	+	Nieto 2019	12.72	10.32	25	11.55	8.84	36	3.6%	0.12 [-0.39, 0.63]		+	+	+	+	+	Palermo 2009	3.54	2.42	23	4.76	1.84	30	3.4%	-0.57 [-1.12, -0.01]		+	+	+	+	+	Palermo 2016 (f2f)	5.58	2.03	31	5.7	2.05	30	3.6%	-0.06 [-0.56, 0.44]		+	+	+	+	+	Palermo 2016 (remote)	5.87	2.05	134	5.59	2.15	135	4.9%	0.13 [-0.11, 0.37]		+	+	+	+	+	Palermo 2020	5.8	1.9	73	6.1	2.1	70	4.5%	-0.15 [-0.48, 0.18]		?	+	+	+	+	Robins 2005	16.2	7.8	36	19.7	9.7	25	3.6%	-0.40 [-0.92, 0.11]		?	?	?	?	?	Sanders 1994	3.27	8.33	22	6.67	7.04	22	3.2%	-0.43 [-1.03, 0.17]		?	?	?	?	?	Schatz 2015	16.4	14.3	23	17.7	14.9	23	3.3%	-0.09 [-0.67, 0.49]		+	+	+	+	+	Stinson 2010	2.17	1.34	22	3.47	2.12	24	3.2%	-0.71 [-1.31, -0.12]		+	+	+	+	+	Van der Veek 2013	23.1	15.92	52	26.51	14.38	52	4.2%	-0.22 [-0.61, 0.16]		+	?	?	?	?	Van Tilburg 2009	9	8.3	15	16.9	11.5	14	2.5%	-0.77 [-1.53, -0.01]		?	?	?	?	?	Vlieger 2007	3	3.4	27	9.4	5.7	25	3.1%	-1.36 [-1.96, -0.75]		+	+	+	+	+	Wahlund 2015	4.4	1.6	31	3.7	2	33	3.7%	0.38 [-0.11, 0.88]		+	+	?	?	?	Wicksell 2009	3.6	2.3	16	5	2.9	16	2.7%	-0.52 [-1.23, 0.18]		+	+	?	?	?	Total (95% CI)			1278			1173	100.0%	-0.34 [-0.51, -0.18]				
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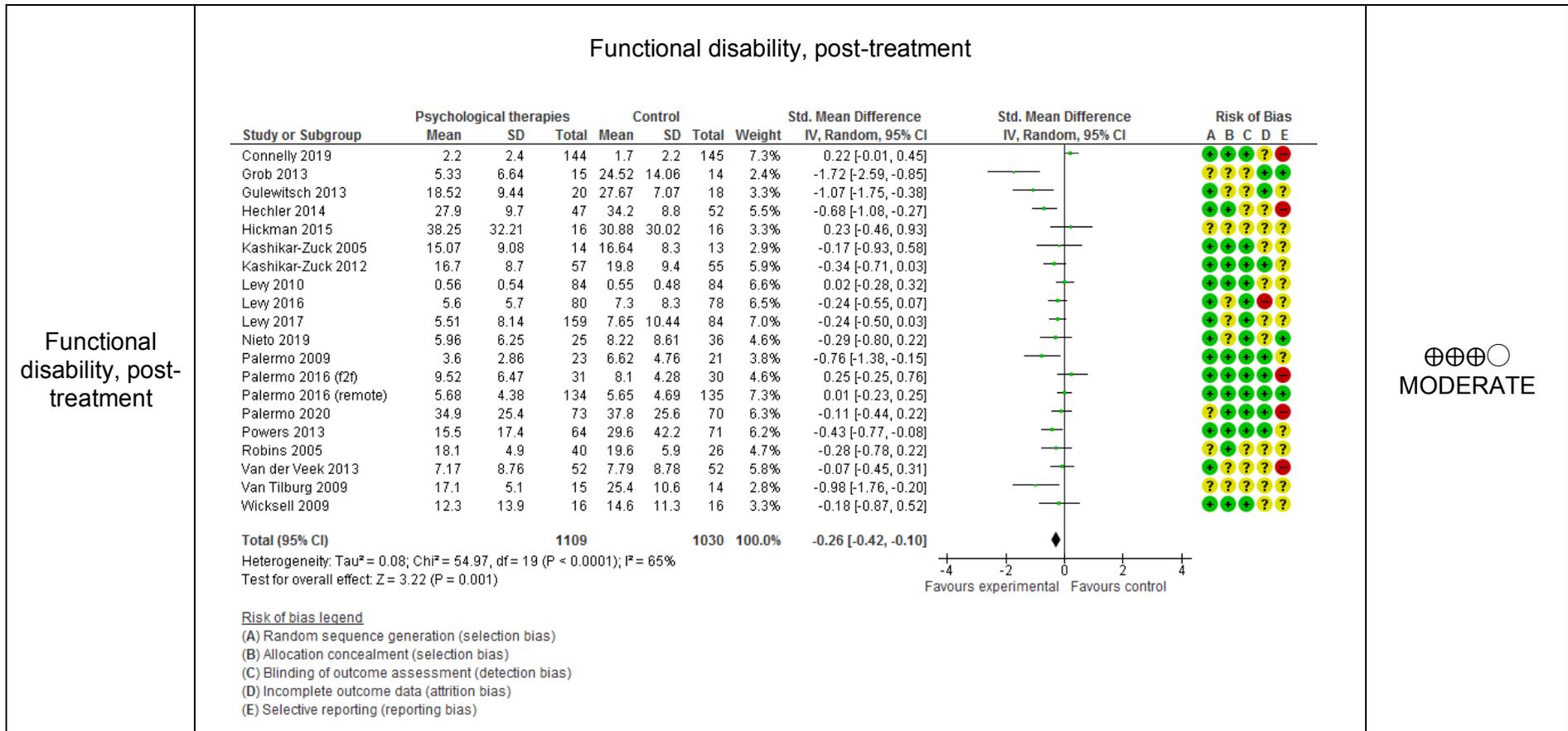


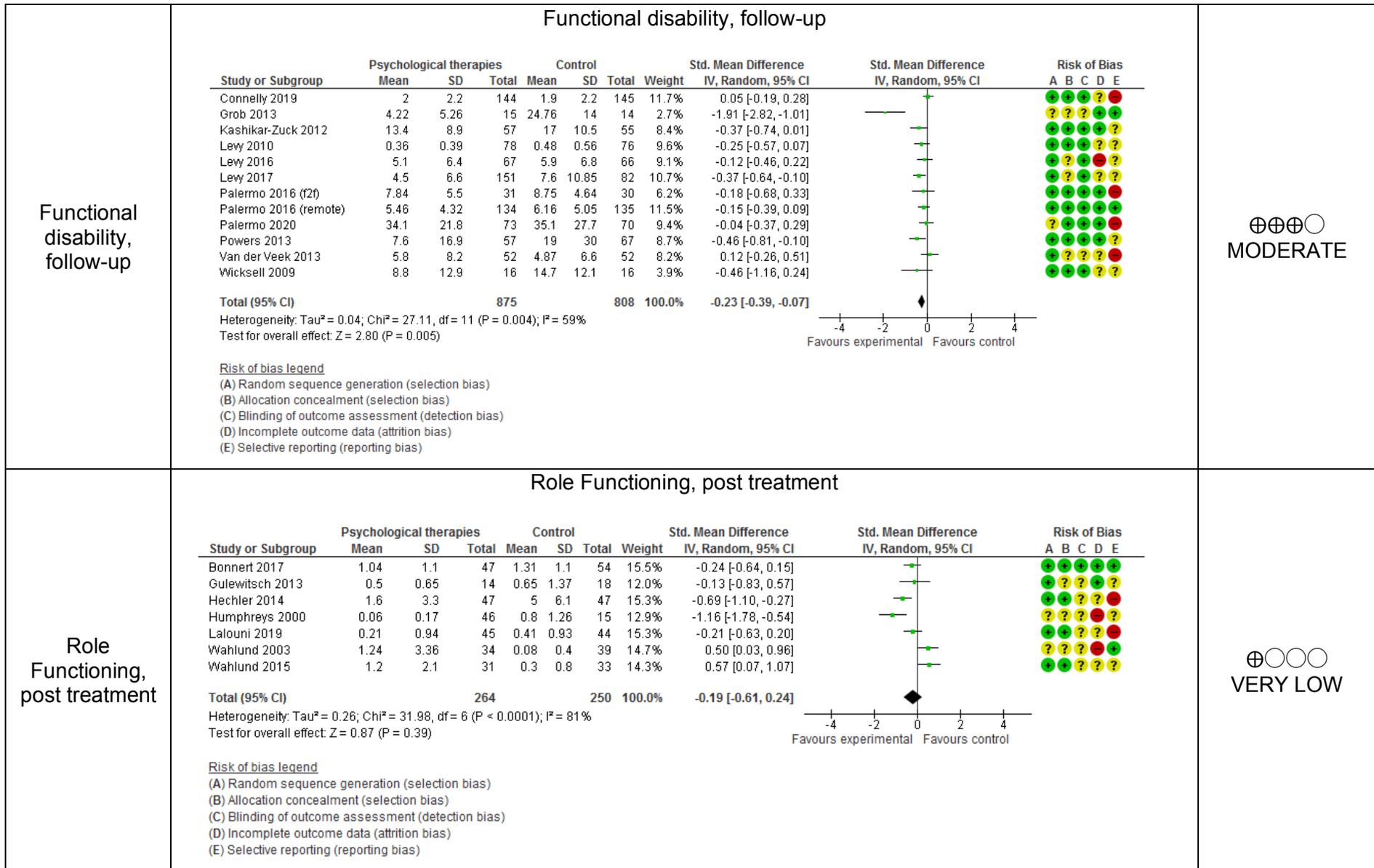
<p>30% pain reduction, post-treatment</p>	<p style="text-align: center;">30% pain reduction, post-treatment</p> <table border="1"> <thead> <tr> <th rowspan="2">Study or Subgroup</th> <th colspan="2">Psychological therapies</th> <th colspan="2">Control</th> <th rowspan="2">Weight</th> <th colspan="2">Risk Ratio</th> <th rowspan="2">Risk of Bias</th> </tr> <tr> <th>Events</th> <th>Total</th> <th>Events</th> <th>Total</th> <th>M-H, Fixed, 95% CI</th> <th>M-H, Fixed, 95% CI</th> </tr> </thead> <tbody> <tr> <td>Van der Veek 2013</td> <td>17</td> <td>52</td> <td>15</td> <td>52</td> <td>100.0%</td> <td>1.13 [0.64, 2.02]</td> <td></td> <td>⊕ ? ? ? ⊖</td> </tr> <tr> <td>Total (95% CI)</td> <td></td> <td>52</td> <td></td> <td>52</td> <td>100.0%</td> <td>1.13 [0.64, 2.02]</td> <td></td> <td></td> </tr> <tr> <td>Total events</td> <td>17</td> <td></td> <td>15</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="9">Heterogeneity: Not applicable</td> </tr> <tr> <td colspan="9">Test for overall effect: Z = 0.42 (P = 0.67)</td> </tr> </tbody> </table> <p><u>Risk of bias legend</u> (A) Random sequence generation (selection bias) (B) Allocation concealment (selection bias) (C) Blinding of outcome assessment (detection bias) (D) Incomplete outcome data (attrition bias) (E) Selective reporting (reporting bias)</p>	Study or Subgroup	Psychological therapies		Control		Weight	Risk Ratio		Risk of Bias	Events	Total	Events	Total	M-H, Fixed, 95% CI	M-H, Fixed, 95% CI	Van der Veek 2013	17	52	15	52	100.0%	1.13 [0.64, 2.02]		⊕ ? ? ? ⊖	Total (95% CI)		52		52	100.0%	1.13 [0.64, 2.02]			Total events	17		15						Heterogeneity: Not applicable									Test for overall effect: Z = 0.42 (P = 0.67)									<p style="text-align: center;">⊕○○○ VERY LOW</p>
Study or Subgroup	Psychological therapies		Control		Weight	Risk Ratio		Risk of Bias																																																						
	Events	Total	Events	Total		M-H, Fixed, 95% CI	M-H, Fixed, 95% CI																																																							
Van der Veek 2013	17	52	15	52	100.0%	1.13 [0.64, 2.02]		⊕ ? ? ? ⊖																																																						
Total (95% CI)		52		52	100.0%	1.13 [0.64, 2.02]																																																								
Total events	17		15																																																											
Heterogeneity: Not applicable																																																														
Test for overall effect: Z = 0.42 (P = 0.67)																																																														
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Study or Subgroup	Psychological therapies		Control		Weight	Risk Ratio		Risk of Bias																																																						
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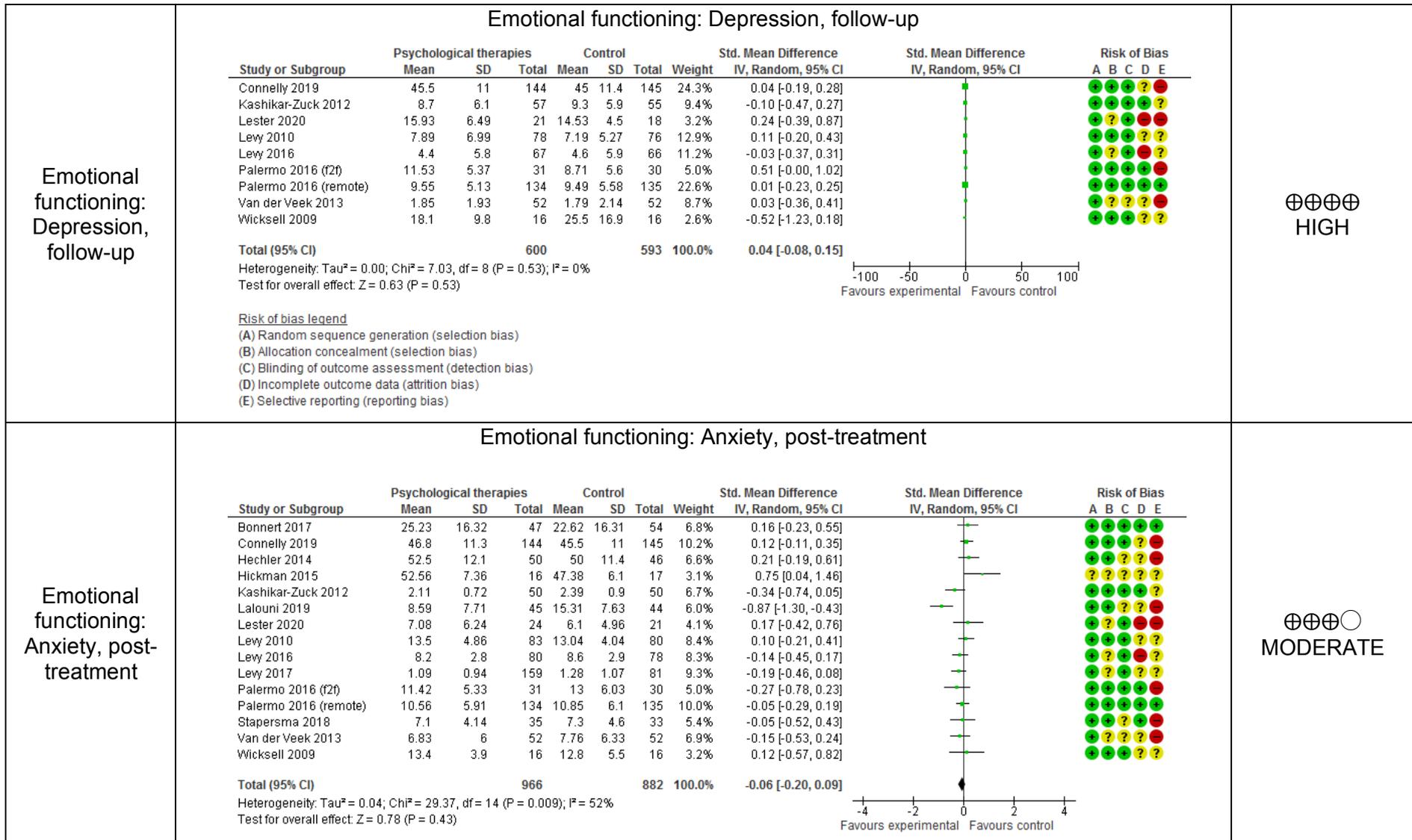


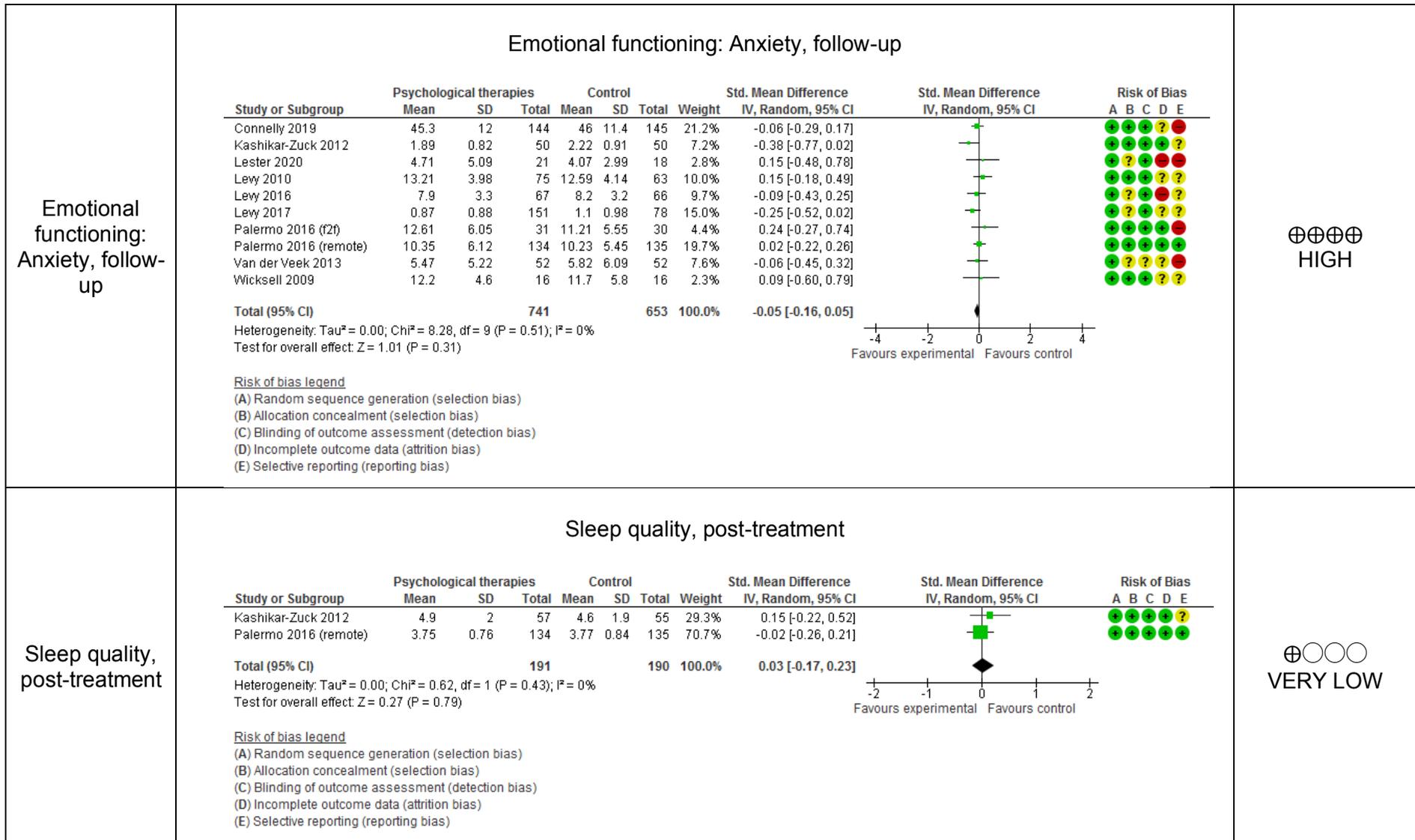
⊕⊕⊕⊕
MODERATE

⊕○○○
VERY LOW

Role Functioning, follow up	Role Functioning, follow up										 VERY LOW			
	Study or Subgroup	Psychological therapies			Control			Std. Mean Difference IV, Random, 95% CI	Std. Mean Difference IV, Random, 95% CI	Risk of Bias				
	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI	A	B	C	D	E
Barakat 2010	13.83	14.33	17	11.94	9.25	20	45.1%	0.16 [-0.49, 0.80]		?	?	?	?	?
Wahlund 2003	0.38	0.53	34	0.04	0.2	39	54.9%	0.86 [0.38, 1.34]		?	?	?	?	?
Total (95% CI)			51			59	100.0%	0.54 [-0.15, 1.23]						
Heterogeneity: Tau ² = 0.16; Chi ² = 2.95, df = 1 (P = 0.09); I ² = 66%														
Test for overall effect: Z = 1.55 (P = 0.12)														
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(A) Random sequence generation (selection bias)														
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Emotional functioning: Depression, post-treatment	Emotional functioning: Depression, post-treatment										 HIGH			
	Study or Subgroup	Psychological therapies			Control			Std. Mean Difference IV, Random, 95% CI	Std. Mean Difference IV, Random, 95% CI	Risk of Bias				
	Mean	SD	Total	Mean	SD	Total	Weight	IV, Random, 95% CI	IV, Random, 95% CI	A	B	C	D	E
Connelly 2019	46.4	11.2	144	45.2	12.1	145	17.0%	0.10 [-0.13, 0.33]		+	+	+	?	-
Hechler 2014	50.3	12	47	50.7	8.5	46	5.9%	-0.04 [-0.44, 0.37]		+	+	?	?	-
Hickman 2015	51.69	6.65	16	49.69	6.46	17	2.1%	0.30 [-0.39, 0.98]		?	?	?	?	-
Kashikar-Zuck 2005	49.57	17.6	14	48.46	12.89	13	1.7%	0.07 [-0.69, 0.82]		+	+	+	?	-
Kashikar-Zuck 2012	9.9	6.2	57	11.8	5.8	55	6.9%	-0.31 [-0.69, 0.06]		+	+	+	+	?
Lalouni 2019	1.99	2.88	45	2.89	2.85	44	5.6%	-0.31 [-0.73, 0.11]		+	+	?	-	-
Lester 2020	14.38	6.22	24	14.47	4.53	21	2.9%	-0.02 [-0.60, 0.57]		+	?	+	-	-
Lewy 2010	9.96	6.16	84	8.35	5.73	84	10.2%	0.27 [-0.03, 0.57]		+	+	+	?	?
Lewy 2016	7.6	7.1	80	8.8	7.6	78	9.7%	-0.16 [-0.47, 0.15]		+	?	+	-	?
Nieto 2019	18.2	6.22	20	19.9	4.53	21	2.6%	-0.31 [-0.92, 0.31]		+	?	+	?	-
Palermo 2009	58.96	13.1	23	61.59	18.67	21	2.8%	-0.16 [-0.75, 0.43]		+	+	+	+	?
Palermo 2016 (f2f)	12.03	5.13	31	11.2	5.37	30	3.9%	0.16 [-0.35, 0.66]		+	+	+	+	-
Palermo 2016 (remote)	9.71	5.1	134	9.32	5.37	135	15.9%	0.07 [-0.16, 0.31]		+	+	+	+	+
Stapersma 2018	7.2	6.51	35	7.7	6.89	33	4.3%	-0.07 [-0.55, 0.40]		+	+	?	+	-
Van der Veeck 2013	2.17	1.96	52	2.33	1.97	52	6.5%	-0.08 [-0.47, 0.30]		+	?	?	?	-
Wicksell 2009	18.4	10	16	25	10.5	16	2.0%	-0.63 [-1.34, 0.08]		+	+	+	?	?
Total (95% CI)			822			811	100.0%	-0.02 [-0.12, 0.08]						
Heterogeneity: Tau ² = 0.00; Chi ² = 15.57, df = 15 (P = 0.41); I ² = 4%														
Test for overall effect: Z = 0.40 (P = 0.69)														
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Emotional functioning: Anxiety, follow-up

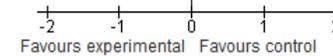
⊕⊕⊕⊕
HIGH

Sleep quality, post-treatment

Study or Subgroup	Psychological therapies		Control		Std. Mean Difference		Weight	Std. Mean Difference IV, Random, 95% CI	Risk of Bias A B C D E
	Mean	SD	Mean	SD	IV, Random, 95% CI				
	Total	Total	Total	Total					
Kashikar-Zuck 2012	4.9	2	57	4.6	1.9	55	29.3%	0.15 [-0.22, 0.52]	⊕⊕⊕⊕?
Palermo 2016 (remote)	3.75	0.76	134	3.77	0.84	135	70.7%	-0.02 [-0.26, 0.21]	⊕⊕⊕⊕⊕
Total (95% CI)			191			190	100.0%	0.03 [-0.17, 0.23]	

Heterogeneity: Tau² = 0.00; Chi² = 0.62, df = 1 (P = 0.43); I² = 0%
 Test for overall effect: Z = 0.27 (P = 0.79)

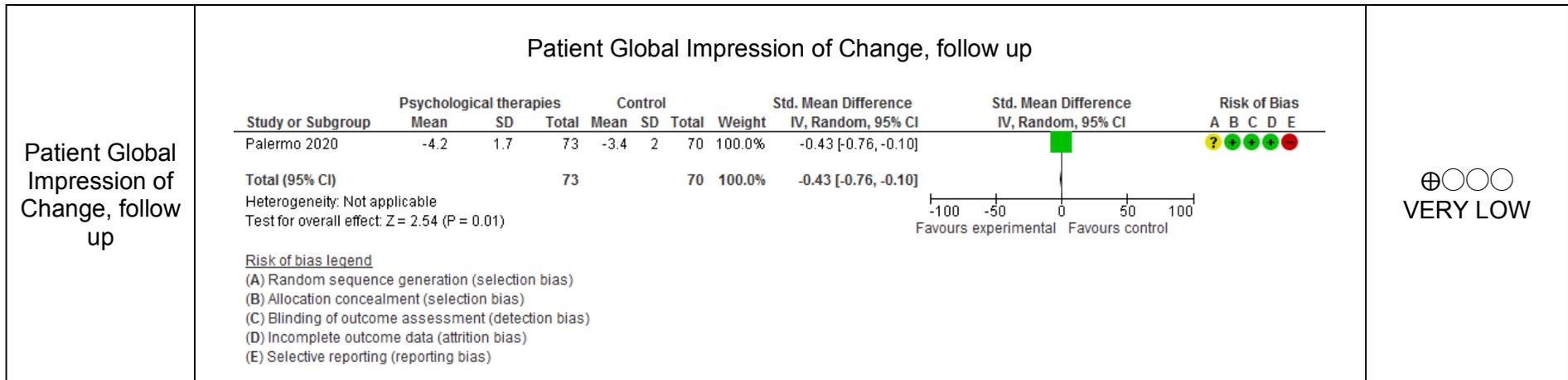
Risk of bias legend
 (A) Random sequence generation (selection bias)
 (B) Allocation concealment (selection bias)
 (C) Blinding of outcome assessment (detection bias)
 (D) Incomplete outcome data (attrition bias)
 (E) Selective reporting (reporting bias)



Sleep quality, post-treatment

⊕○○○
VERY LOW

<p>Sleep quality, follow up</p>	<p style="text-align: center;">Sleep quality, follow up</p> <table border="1"> <thead> <tr> <th rowspan="2">Study or Subgroup</th> <th colspan="3">Psychological therapies</th> <th colspan="3">Control</th> <th rowspan="2">Weight</th> <th rowspan="2">Std. Mean Difference IV, Random, 95% CI</th> <th rowspan="2">Std. Mean Difference IV, Random, 95% CI</th> <th rowspan="2">Risk of Bias A B C D E</th> </tr> <tr> <th>Mean</th> <th>SD</th> <th>Total</th> <th>Mean</th> <th>SD</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Palermo 2016 (remote)</td> <td>3.76</td> <td>0.8</td> <td>134</td> <td>3.76</td> <td>0.77</td> <td>135</td> <td>100.0%</td> <td>0.00 [-0.24, 0.24]</td> <td></td> <td></td> </tr> <tr> <td>Total (95% CI)</td> <td></td> <td></td> <td>134</td> <td></td> <td></td> <td>135</td> <td>100.0%</td> <td>0.00 [-0.24, 0.24]</td> <td></td> <td></td> </tr> </tbody> </table> <p>Heterogeneity: Not applicable Test for overall effect: Z = 0.00 (P = 1.00)</p> <p><u>Risk of bias legend</u> (A) Random sequence generation (selection bias) (B) Allocation concealment (selection bias) (C) Blinding of outcome assessment (detection bias) (D) Incomplete outcome data (attrition bias) (E) Selective reporting (reporting bias)</p>	Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference IV, Random, 95% CI	Std. Mean Difference IV, Random, 95% CI	Risk of Bias A B C D E	Mean	SD	Total	Mean	SD	Total	Palermo 2016 (remote)	3.76	0.8	134	3.76	0.77	135	100.0%	0.00 [-0.24, 0.24]			Total (95% CI)			134			135	100.0%	0.00 [-0.24, 0.24]			<p style="text-align: center;">⊕○○○ VERY LOW</p>
Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference IV, Random, 95% CI					Std. Mean Difference IV, Random, 95% CI	Risk of Bias A B C D E																											
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Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference IV, Random, 95% CI					Std. Mean Difference IV, Random, 95% CI	Risk of Bias A B C D E																											
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<p>Patient Global Impression of Change, post treatment</p>	<p style="text-align: center;">Patient Global Impression of Change, post treatment</p> <table border="1"> <thead> <tr> <th rowspan="2">Study or Subgroup</th> <th colspan="3">Psychological therapies</th> <th colspan="3">Control</th> <th rowspan="2">Weight</th> <th rowspan="2">Std. Mean Difference IV, Random, 95% CI</th> <th rowspan="2">Std. Mean Difference IV, Random, 95% CI</th> <th rowspan="2">Risk of Bias A B C D E</th> </tr> <tr> <th>Mean</th> <th>SD</th> <th>Total</th> <th>Mean</th> <th>SD</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Palermo 2020</td> <td>-3.9</td> <td>1.8</td> <td>73</td> <td>-2.9</td> <td>1.8</td> <td>70</td> <td>100.0%</td> <td>-0.55 [-0.89, -0.22]</td> <td></td> <td></td> </tr> <tr> <td>Total (95% CI)</td> <td></td> <td></td> <td>73</td> <td></td> <td></td> <td>70</td> <td>100.0%</td> <td>-0.55 [-0.89, -0.22]</td> <td></td> <td></td> </tr> </tbody> </table> <p>Heterogeneity: Not applicable Test for overall effect: Z = 3.24 (P = 0.001)</p> <p><u>Risk of bias legend</u> (A) Random sequence generation (selection bias) (B) Allocation concealment (selection bias) (C) Blinding of outcome assessment (detection bias) (D) Incomplete outcome data (attrition bias) (E) Selective reporting (reporting bias)</p>	Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference IV, Random, 95% CI	Std. Mean Difference IV, Random, 95% CI	Risk of Bias A B C D E	Mean	SD	Total	Mean	SD	Total	Palermo 2020	-3.9	1.8	73	-2.9	1.8	70	100.0%	-0.55 [-0.89, -0.22]			Total (95% CI)			73			70	100.0%	-0.55 [-0.89, -0.22]			<p style="text-align: center;">⊕○○○ VERY LOW</p>
Study or Subgroup	Psychological therapies			Control			Weight	Std. Mean Difference IV, Random, 95% CI					Std. Mean Difference IV, Random, 95% CI	Risk of Bias A B C D E																											
	Mean	SD	Total	Mean	SD	Total																																			
Palermo 2020	-3.9	1.8	73	-2.9	1.8	70	100.0%	-0.55 [-0.89, -0.22]																																	
Total (95% CI)			73			70	100.0%	-0.55 [-0.89, -0.22]																																	



Appendix H.

Table 6: WHO GRADE Profile: Psychological therapies vs. active/standard care or waitlist for children and adolescents with chronic pain, by control group

Question: Psychological therapies compared to active/standard care or waitlist control in children and adolescents with chronic pain

Setting: Global

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by control	placebo	Relative (95% CI)	Absolute (95% CI)		
Pain intensity, post-treatment - Active or standard care control												
30	randomised trials	serious ^a	serious ^b	not serious	not serious	none	1349	1184	-	SMD 0.28 lower (0.44 lower to 0.13 lower)	⊕⊕○○ LOW	
Pain intensity, post-treatment - Waitlist control												
8	randomised trials	serious ^a	serious ^b	not serious	not serious	none	235	257	-	SMD 0.34 lower (0.66 lower to 0.01 lower)	⊕⊕○○ LOW	
Pain intensity, follow-up - Active or standard care control												
19	randomised trials	serious ^a	serious ^b	not serious	not serious	none	953	843	-	SMD 0.11 lower (0.26 lower to 0.05 higher)	⊕⊕○○ LOW	
Pain intensity, follow-up - Wait-list control												

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by control	placebo	Relative (95% CI)	Absolute (95% CI)		
2	randomised trials	very serious ^c	not serious	not serious	very serious ^d	none	44	41	-	SMD 0.62 lower (1.97 lower to 0.73 higher)	⊕○○○ VERY LOW	

50% reduction in pain, post-treatment - Active or standard care control

14	randomised trials	serious ^a	not serious	serious ^e	not serious	none	230/489 (47.0%)	84/359 (23.4%)	RR 1.95 (1.46 to 2.61)	222 more per 1,000 (from 108 more to 377 more)	⊕⊕○○ LOW	
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50% reduction in pain, post-treatment - Waitlist control

8	randomised trials	very serious ^c	not serious	serious ^e	not serious	none	77/155 (49.7%)	20/137 (14.6%)	RR 3.17 (1.50 to 6.67)	317 more per 1,000 (from 73 more to 828 more)	⊕○○○ VERY LOW	
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Health-related quality of life, post-treatment - Active or standard care control

10	randomised trials	serious ^a	not serious	not serious	not serious	none	616	490	-	SMD 0.05 SD lower (0.23 lower to 0.13 higher)	⊕⊕⊕○ MODERATE	
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Health-related quality of life, post-treatment - Waitlist control

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by control	placebo	Relative (95% CI)	Absolute (95% CI)		
2	randomised trials	not serious	not serious	serious ^e	very serious ^f	none	72	90	-	SMD 0.19 lower (0.5 lower to 0.12 higher)	⊕○○○ VERY LOW	

Functional disability, post-treatment - Active or standard care control

21	randomised trials	serious ^a	not serious	not serious	not serious	none	1127	1065	-	SMD 0.15 lower (0.27 lower to 0.04 lower)	⊕⊕⊕○ MODERATE	
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Functional disability, post-treatment - Waitlist control

3	randomised trials	serious ^a	not serious	not serious	very serious ^d	none	82	84	-	SMD 1.05 lower (1.62 lower to 0.49 lower)	⊕○○○ VERY LOW	
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Functional disability, follow-up - Active or standard care control

13	randomised trials	not serious	not serious	not serious	not serious	none	899	827	-	SMD 0.18 lower (0.28 lower to 0.07 lower)	⊕⊕⊕⊕ HIGH	
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Emotional functioning (depression), post-treatment - Active or standard care control

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by control	placebo	Relative (95% CI)	Absolute (95% CI)		
18	randomised trials	not serious	not serious	not serious	not serious	none	870	818	-	SMD 0.02 lower (0.11 lower to 0.08 higher)	⊕⊕⊕⊕ HIGH	

Emotional functioning (depression), follow-up - Active or standard care control

12	randomised trials	not serious	not serious	not serious	not serious	none	709	666	-	SMD 0.06 higher (0.05 lower to 0.16 higher)	⊕⊕⊕⊕ HIGH	
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Emotional functioning (anxiety), post-treatment - Active or standard care control

16	randomised trials	serious ^a	not serious	not serious	not serious	none	957	835	-	SMD 0.1 lower (0.24 lower to 0.03 higher)	⊕⊕⊕○ MODERATE	
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Emotional functioning (anxiety), post-treatment - Waitlist control

3	randomised trials	serious ^a	not serious	serious ^e	serious ^f	none	127	112	-	SMD 0.03 higher (0.35 lower to 0.41 higher)	⊕○○○ VERY LOW	
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Emotional functioning (anxiety), follow-up - Active or standard care control

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by control	placebo	Relative (95% CI)	Absolute (95% CI)		
13	randomised trials	serious ^a	not serious	not serious	not serious	none	820	695	-	SMD 0.07 lower (0.17 lower to 0.03 higher)	⊕⊕⊕○ MODERATE	

CI: Confidence interval; SMD: Standardised mean difference; RR: Risk ratio

Explanations

- Downgraded one level for serious limitations in study design or execution: >50% of risk of bias judgements were rated unclear or high risk of bias.
- Downgraded one level for serious inconsistency: unexplained statistical heterogeneity >50%.
- Downgraded two levels for very serious limitations in study design or execution: >75% of risk of bias judgements were rated unclear or high risk of bias.
- Downgraded by two levels for very serious imprecision: very small number of participants (<200 participants) or studies (<2 studies) contributing to the analyses.
- Downgraded by one level for indirectness: few conditions presented in the meta-analysis so estimate may not be applicable to other chronic pain conditions.
- Downgraded by one level for serious imprecision: small number of participants (<400 participants) or studies (<2 studies) contributing to the analyses.

Table 7: WHO GRADE Profile: Psychological therapies vs. active (non-psychological)/standard care or waitlist for children and adolescents with chronic pain, by pain condition

Question: Psychological therapies compared to active (non-psychological)/standard care or waitlist in children and adolescents with chronic pain. Subgroup analysis: by pain condition.

Setting: Global

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by pain condition	placebo	Relative (95% CI)	Absolute (95% CI)		
Pain intensity, post-treatment - Chronic primary visceral pain												
10	randomised trials	very serious ^a	very serious ^b	not serious	not serious	none	479	365	-	SMD 0.49 lower (0.83 lower to 0.15 lower)	⊕○○○ VERY LOW	CRITICAL
Pain intensity, post-treatment - Mixed pain conditions												
12	randomised trials	not serious	serious ^c	not serious	not serious	none	484	484	-	SMD 0.3 lower (0.55 lower to 0.05 lower)	⊕⊕⊕○ MODERATE	CRITICAL
Pain intensity, post-treatment - Headache (TTH, Migraine)												
10	randomised trials	very serious ^a	not serious	not serious	not serious	none	306	268	-	SMD 0.15 lower (0.36 lower to 0.06 higher)	⊕⊕○○ LOW	CRITICAL
Pain intensity, follow-up - Chronic primary visceral pain												

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by pain condition	placebo	Relative (95% CI)	Absolute (95% CI)		
6	randomised trials	serious ^d	very serious ^b	not serious	not serious	none	343	264	-	SMD 0.38 lower (0.77 lower to 0.02 higher)	⊕○○○ VERY LOW	CRITICAL

Pain intensity, follow-up - Mixed pain conditions

6	randomised trials	not serious	serious ^c	not serious	not serious	none	292	289	-	SMD 0.08 lower (0.39 lower to 0.23 higher)	⊕⊕⊕○ MODERATE	CRITICAL
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Pain intensity, follow-up - Headache (TTH, Migraine)

6	randomised trials	very serious ^a	not serious	not serious	serious ^e	none	130	98	-	SMD 0.09 lower (0.44 lower to 0.26 higher)	⊕○○○ VERY LOW	CRITICAL
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50% reduction in pain, post-treatment - Chronic primary headache and orofacial pain

3	randomised trials	serious ^d	not serious	not serious	serious ^e	none	61/106 (57.5%)	29/106 (27.4%)	RR 2.80 (1.16 to 6.75)	492 more per 1,000 (from 44 more to 1,000 more)	⊕⊕○○ LOW	CRITICAL
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50% reduction in pain, post-treatment - Mixed pain conditions pain reduction

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by pain condition	placebo	Relative (95% CI)	Absolute (95% CI)		
3	randomised trials	not serious	not serious	not serious	serious ^d	none	27/92 (29.3%)	8/84 (9.5%)	RR 2.88 (1.40 to 5.92)	179 more per 1,000 (from 38 more to 469 more)	⊕⊕⊕○ MODERATE	CRITICAL

50% reduction in pain, post-treatment - Headache (TTH, Migraine)

16	randomised trials	very serious ^a	not serious	not serious	not serious	none	219/446 (49.1%)	67/306 (21.9%)	RR 2.04 (1.45 to 2.87)	228 more per 1,000 (from 99 more to 409 more)	⊕⊕○○ LOW	CRITICAL
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Health-related quality of life, post-treatment - Chronic primary visceral pain

5	randomised trials	serious ^d	not serious	not serious	serious ^e	none	154	167	-	SMD 0.24 lower (0.55 lower to 0.07 higher)	⊕⊕○○ LOW	CRITICAL
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Functional disability, post-treatment - Chronic primary visceral pain

7	randomised trials	serious ^d	serious ^c	not serious	not serious	none	390	310	-	SMD 0.35 lower (0.65 lower to 0.06 lower)	⊕⊕○○ LOW	CRITICAL
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Functional disability, post-treatment - Mixed pain

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by pain condition	placebo	Relative (95% CI)	Absolute (95% CI)		
7	randomised trials	not serious	serious ^c	not serious	not serious	none	344	342	-	SMD 0.31 lower (0.63 lower to 0)	⊕⊕⊕○ MODERATE	CRITICAL

Functional disability, post-treatment - Headache (TTH, Migraine)

4	randomised trials	serious ^d	not serious	not serious	serious ^e	none	100	119	-	SMD 0.22 lower (0.49 lower to 0.05 higher)	⊕⊕○○ LOW	CRITICAL
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Functional disability, follow-up - Chronic primary visceral pain

4	randomised trials	serious ^d	very serious ^b	not serious	not serious	none	296	224	-	SMD 0.43 lower (0.91 lower to 0.04 higher)	⊕○○○ VERY LOW	CRITICAL
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Functional disability, follow-up - Mixed pain

4	randomised trials	not serious	not serious	not serious	not serious	none	254	251	-	SMD 0.14 lower (0.32 lower to 0.03 higher)	⊕⊕⊕⊕ HIGH	CRITICAL
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Emotional functioning (depression), post-treatment - Chronic primary visceral pain

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by pain condition	placebo	Relative (95% CI)	Absolute (95% CI)		
5	randomised trials	serious ^d	not serious	not serious	not serious	none	281	279	-	SMD 0.08 lower (0.3 lower to 0.15 higher)	⊕⊕⊕○ MODERATE	CRITICAL

Emotional functioning (depression), post-treatment - Mixed pain

6	randomised trials	not serious ^d	not serious	not serious	not serious	none	275	269	-	SMD 0 (0.17 lower to 0.17 higher)	⊕⊕⊕⊕ HIGH	CRITICAL
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Emotional functioning (depression), post-treatment - Headache (TTH, Migraine)

3	randomised trials	serious ^d	not serious	not serious	very serious ^f	none	95	53	-	SMD 0.02 lower (0.36 lower to 0.33 higher)	⊕○○○ VERY LOW	CRITICAL
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Emotional functioning (depression), follow-up - Chronic primary visceral pain

3	randomised trials	serious ^d	not serious	not serious	serious ^e	none	197	194	-	SMD 0.04 higher (0.16 lower to 0.24 higher)	⊕⊕○○ LOW	CRITICAL
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Emotional functioning (depression), follow-up - Mixed pain

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by pain condition	placebo	Relative (95% CI)	Absolute (95% CI)		
4	randomised trials	not serious	serious ^c	not serious	serious ^e	none	202	199	-	SMD 0.09 higher (0.26 lower to 0.43 higher)	⊕⊕○○ LOW	CRITICAL

Emotional functioning (depression), follow-up - Headache (TTH, Migraine)

3	randomised trials	not serious	not serious	not serious	serious ^e	none	109	73	-	SMD 0.19 higher (0.12 lower to 0.49 higher)	⊕⊕⊕○ MODERATE	CRITICAL
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Emotional functioning (anxiety), post-treatment - Chronic primary visceral pain

5	randomised trials	serious ^d	serious ^c	not serious	not serious	none	307	308	-	SMD 0.16 lower (0.48 lower to 0.15 higher)	⊕⊕○○ LOW	CRITICAL
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Emotional functioning (anxiety), post-treatment - Mixed pain

5	randomised trials	not serious	not serious	not serious	not serious	none	255	248	-	SMD 0 (0.17 lower to 0.18 higher)	⊕⊕⊕⊕ HIGH	CRITICAL
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Emotional functioning (anxiety), post-treatment - Headache (TTH, Migraine)

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by pain condition	placebo	Relative (95% CI)	Absolute (95% CI)		
4	randomised trials	serious ^d	not serious	not serious	serious ^e	none	118	65	-	SMD 0.25 lower (0.56 lower to 0.06 higher)	⊕⊕○○ LOW	CRITICAL

Emotional functioning (anxiety), follow-up - Chronic primary visceral pain

3	randomised trials	serious ^d	not serious	not serious	serious ^e	none	194	181	-	SMD 0.01 higher (0.2 lower to 0.21 higher)	⊕⊕○○ LOW	CRITICAL
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Emotional functioning (anxiety), follow-up - Mixed pain

4	randomised trials	not serious	not serious	not serious	not serious	none	202	199	-	SMD 0.07 higher (0.12 lower to 0.27 higher)	⊕⊕⊕⊕ HIGH	CRITICAL
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Emotional functioning (anxiety), follow-up - Headache (TTH, Migraine)

3	randomised trials	serious ^d	not serious	not serious	very serious ^f	none	79	42	-	SMD 0.25 lower (0.64 lower to 0.15 higher)	⊕○○○ VERY LOW	CRITICAL
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CI: Confidence interval; SMD: Standardised mean difference; RR: Risk ratio

Explanations

- a. Downgraded two levels for very serious limitations in study design or execution: >75% of risk of bias judgements were rated unclear or high risk of bias.
- b. Downgraded by two levels for very serious inconsistency: unexplained statistical heterogeneity >75%.
- c. Downgraded one level for serious inconsistency: unexplained statistical heterogeneity >50%.
- d. Downgraded one level for serious limitations in study design or execution: >50% of risk of bias judgements were rated unclear or high risk of bias.
- e. Downgraded by one level for serious imprecision: small number of participants (<400 participants) or studies (<2 studies) contributing to the analyses.
- f. Downgraded by two levels for very serious imprecision: very small number of participants (<200 participants) or studies (<2 studies) contributing to the analyses.

Table 8: WHO GRADE Profile: Psychological therapies vs. active (non-psychological)/standard care or waitlist for children and adolescents with chronic pain, by treatment duration

Question: Psychological therapies compared to active (non-psychological)/standard care or waitlist in children and adolescents with chronic pain. Subgroup analysis by treatment duration.

Setting: Global

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by treatment duration	placebo	Relative (95% CI)	Absolute (95% CI)		
Pain intensity, post-treatment - Treatment duration, ≤4 hours												
9	randomised trials	serious ^a	serious ^b	not serious	not serious	none	613	515	-	SMD 0.07 lower (0.26 lower to 0.11 higher)	⊕⊕○○ LOW	
Pain intensity, post-treatment - Treatment duration, >4 hours												
17	randomised trials	serious ^a	serious ^b	not serious	not serious	none	585	580	-	SMD 0.3 lower (0.52 lower to 0.08 lower)	⊕⊕○○ LOW	
Pain intensity, follow-up - Treatment duration, ≤4 hours												
6	randomised trials	not serious	serious ^b	not serious	not serious	none	484	391	-	SMD 0.11 lower (0.39 lower to 0.16 higher)	⊕⊕⊕○ MODERATE	
Pain intensity, follow-up - Treatment duration, >4 hours												
10	randomised trials	serious ^a	serious ^b	not serious	not serious	none	378	377	-	SMD 0.1 lower (0.34 lower to 0.14 higher)	⊕⊕○○ LOW	

50% reduction in pain, post-treatment - Treatment duration, ≤4 hours

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by treatment duration	placebo	Relative (95% CI)	Absolute (95% CI)		
8	randomised trials	serious ^a	not serious	serious ^c	serious ^d	none	68/195 (34.9%)	23/197 (11.7%)	RR 2.50 (1.47 to 4.25)	175 more per 1,000 (from 55 more to 379 more)	⊕○○○ VERY LOW	

50% reduction in pain, post-treatment - Treatment duration, >4 hours

6	randomised trials	very serious ^e	serious ^b	serious ^c	serious ^d	none	108/204 (52.9%)	31/105 (29.5%)	RR 1.92 (1.02 to 3.60)	272 more per 1,000 (from 6 more to 768 more)	⊕○○○ VERY LOW	
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Health-related quality of life - Treatment duration ≤4 hours

3	randomised trials	serious ^a	very serious ^f	not serious	serious ^d	none	290	188	-	SMD 0.33 SD lower (0.79 lower to 0.13 higher)	⊕○○○ VERY LOW	
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Health-related quality of life, post-treatment - Treatment duration, >4 hours

2	randomised trials	not serious	not serious	serious ^c	serious ^d	none	166	169	-	SMD 0.14 higher (0.07 lower to 0.36 higher)	⊕⊕○○ LOW	
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Functional disability, post-treatment - Treatment duration, ≤4 hours

10	randomised trials	serious ^a	not serious	not serious	not serious	none	629	575	-	SMD 0.16 lower (0.31 lower to 0.01 lower)	⊕⊕⊕○ MODERATE	
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Functional disability, post-treatment - Treatment duration, >4 hours

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by treatment duration	placebo	Relative (95% CI)	Absolute (95% CI)		
8	randomised trials	serious ^a	very serious ^f	not serious	not serious	none	365	353	-	SMD 0.36 lower (0.75 lower to 0.02 higher)	⊕○○○ VERY LOW	

Functional disability, follow-up - Treatment duration, ≤4 hours

6	randomised trials	not serious	not serious	serious ^c	not serious	none	531	451	-	SMD 0.19 SD lower (0.31 lower to 0.06 lower)	⊕⊕⊕○ MODERATE	
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Functional disability, follow-up - Treatment duration, >4 hours

5	randomised trials	not serious	very serious ^f	serious ^c	not serious	none	258	257	-	SMD 0.33 lower (0.79 lower to 0.13 higher)	⊕○○○ VERY LOW	
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Emotional functioning (depression), post-treatment - Treatment duration, ≤4 hours

8	randomised trials	not serious	not serious	not serious	not serious	none	419	409	-	SMD 0.05 higher (0.08 lower to 0.19 higher)	⊕⊕⊕⊕ HIGH	
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Emotional functioning (depression), post-treatment - Treatment duration, >4 hours

4	randomised trials	serious ^a	not serious	not serious	not serious	none	259	259	-	SMD 0.03 lower (0.25 lower to 0.18 higher)	⊕⊕⊕○ MODERATE	
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Emotional functioning (depression), follow-up - Treatment duration, ≤4 hours

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by treatment duration	placebo	Relative (95% CI)	Absolute (95% CI)		
5	randomised trials	not serious	not serious	not serious	not serious	none	338	330	-	SMD 0.08 higher (0.07 lower to 0.23 higher)	⊕⊕⊕⊕ HIGH	

Emotional functioning (depression), follow-up - Treatment duration, >4 hours

5	randomised trials	serious ^a	not serious	not serious	not serious	none	278	272	-	SMD 0.06 higher (0.11 lower to 0.22 higher)	⊕⊕⊕○ MODERATE	
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Emotional functioning (anxiety), post-treatment - Treatment duration, ≤4 hours

7	randomised trials	serious ^a	not serious	not serious	not serious	none	522	426	-	SMD 0.05 lower (0.21 lower to 0.1 higher)	⊕⊕⊕○ MODERATE	
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Emotional functioning (anxiety), post-treatment - Treatment duration, >4 hours

6	randomised trials	serious ^a	not serious	not serious	not serious	none	317	310	-	SMD 0.05 higher (0.1 lower to 0.21 higher)	⊕⊕⊕○ MODERATE	
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Emotional functioning (anxiety), follow-up - Treatment duration, ≤4 hours

6	randomised trials	not serious	not serious	not serious	not serious	none	475	374	-	SMD 0.06 lower (0.22 lower to 0.09 higher)	⊕⊕⊕⊕ HIGH	
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Emotional functioning (anxiety), follow-up - Treatment duration, >4 hours

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by treatment duration	placebo	Relative (95% CI)	Absolute (95% CI)		
5	randomised trials	not serious	not serious	not serious	not serious	none	264	261	-	SMD 0 (0.17 lower to 0.17 higher)	⊕⊕⊕⊕ HIGH	

CI: Confidence interval; SMD: Standardised mean difference; RR: Risk ratio

Explanations

- Downgraded one level for serious limitations in study design or execution: >50% of risk of bias judgements were rated unclear or high risk of bias.
- Downgraded one level for serious inconsistency: unexplained statistical heterogeneity >50%.
- Downgraded by one level for indirectness: few conditions presented in the meta-analysis so estimate may not be applicable to other chronic pain conditions.
- Downgraded by one level for serious imprecision: small number of participants (<400 participants) or studies (<2 studies) contributing to the analyses.
- Downgraded two levels for very serious limitations in study design or execution: >75% of risk of bias judgements were rated unclear or high risk of bias.
- Downgraded by two levels for very serious inconsistency: unexplained statistical heterogeneity >75%.

Table 9: WHO GRADE Profile: Psychological therapies vs. active (non-psychological)/standard care or waitlist for children and adolescents with chronic pain, by route

Question: Psychological therapies compared to active (non-psychological)/standard care or waitlist in children and adolescents with chronic pain. Subgroup analysis by route (face-to-face from therapist vs. remotely delivered)

Setting: Global

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by route		Relative (95% CI)	Absolute (95% CI)		
Pain intensity, post-treatment - Face-to-face with therapist												
23	randomised trials	serious ^a	serious ^b	not serious	not serious	none	826	682	-	SMD 0.38 lower (0.58 lower to 0.17 lower)	⊕⊕○○ LOW	
Pain intensity, post-treatment - Remote from therapist												
17	randomised trials	serious ^a	not serious	not serious	not serious	none	785	731	-	SMD 0.19 lower (0.35 lower to 0.04 lower)	⊕⊕⊕○ MODERATE	
Pain intensity, follow-up - Face-to-face with therapist												
13	randomised trials	serious ^a	serious ^b	not serious	not serious	none	479	404	-	SMD 0.15 lower (0.35 lower to 0.06 higher)	⊕⊕○○ LOW	
Pain intensity, follow-up - Remote from therapist												

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by route		Relative (95% CI)	Absolute (95% CI)		
9	randomised trials	serious ^a	serious ^b	not serious	not serious	none	518	475	-	SMD 0.13 lower (0.39 lower to 0.13 higher)	⊕⊕○○ LOW	

50% reduction in pain, post-treatment - Face-to-face with therapist

14	randomised trials	very serious ^c	serious ^b	not serious	not serious	none	210/402 (52.2%)	74/295 (25.1%)	RR 2.02 (1.36 to 2.98)	256 more per 1,000 (from 90 more to 497 more)	⊕○○○ VERY LOW	
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50% reduction in pain, post-treatment - Remote from therapist

9	randomised trials	serious ^a	not serious	not serious	serious ^d	none	97/242 (40.1%)	36/200 (18.0%)	RR 1.91 (1.38 to 2.66)	164 more per 1,000 (from 68 more to 299 more)	⊕⊕○○ LOW	
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Functional disability, post-treatment - Face-to-face with therapist

15	randomised trials	serious ^a	serious ^b	not serious	not serious	none	666	611	-	SMD 0.31 lower (0.49 lower to 0.13 lower)	⊕⊕○○ LOW	
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Functional disability, post-treatment - Remote from therapist

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by route		Relative (95% CI)	Absolute (95% CI)		
10	randomised trials	not serious	serious ^b	not serious	not serious	none	543	535	-	SMD 0.14 lower (0.33 lower to 0.06 higher)	⊕⊕⊕○ MODERATE	

Functional disability, follow-up - Face-to-face with therapist

9	randomised trials	not serious	serious ^b	not serious	not serious	none	454	413	-	SMD 0.33 lower (0.55 lower to 0.1 lower)	⊕⊕⊕○ MODERATE	
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Functional disability, follow-up - Remote from therapist

7	randomised trials	not serious	not serious	not serious	not serious	none	474	473	-	SMD 0.05 lower (0.29 lower to 0.2 higher)	⊕⊕⊕⊕ HIGH	
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Emotional functioning (depression), post-treatment - Face-to-face with therapist

9	randomised trials	serious ^a	not serious	not serious	not serious	none	397	391	-	SMD 0.04 lower (0.21 lower to 0.13 higher)	⊕⊕⊕○ MODERATE	
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Emotional functioning (depression), post-treatment - Remote from therapist

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by route		Relative (95% CI)	Absolute (95% CI)		
10	randomised trials	not serious	not serious	not serious	not serious	none	520	473	-	SMD 0.01 lower (0.13 lower to 0.12 higher)	⊕⊕⊕⊕ HIGH	

Emotional functioning (depression), follow-up - Face-to-face with therapist

7	randomised trials	not serious	not serious	not serious	not serious	none	346	336	-	SMD 0.06 higher (0.11 lower to 0.23 higher)	⊕⊕⊕⊕ HIGH	
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Emotional functioning (depression), follow-up - Remote from therapist

5	randomised trials	not serious	not serious	not serious	not serious	none	363	330	-	SMD 0.05 higher (0.1 lower to 0.2 higher)	⊕⊕⊕⊕ HIGH	
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Emotional functioning (anxiety), post-treatment - Face-to-face with therapist

10	randomised trials	serious ^a	not serious	not serious	not serious	none	483	420	-	SMD 0.05 lower (0.2 lower to 0.11 higher)	⊕⊕⊕○ MODERATE	
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Emotional functioning (anxiety), post-treatment - Remote from therapist

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by route		Relative (95% CI)	Absolute (95% CI)		
10	randomised trials	not serious	serious ^b	not serious	not serious	none	601	527	-	SMD 0.14 lower (0.34 lower to 0.06 higher)	⊕⊕⊕○ MODERATE	

Emotional functioning (anxiety), follow-up - Face-to-face with therapist

8	randomised trials	serious ^a	not serious	not serious	not serious	none	392	324	-	SMD 0.06 lower (0.22 lower to 0.09 higher)	⊕⊕⊕○ MODERATE	
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Emotional functioning (anxiety), follow-up - Remote from therapist

6	randomised trials	not serious	not serious	not serious	not serious	none	428	406	-	SMD 0.09 lower (0.24 lower to 0.06 higher)	⊕⊕⊕⊕ HIGH	
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Health-related quality of life, post-treatment - Face-to-face with therapist

2	randomised trials	serious ^a	not serious	serious ^e	serious ^d	none	178	123	-	SMD 0.12 lower (0.36 lower to 0.11 higher)	⊕○○○ VERY LOW	
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Health-related quality of life, post-treatment - Remote from therapist

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by route		Relative (95% CI)	Absolute (95% CI)		
11	randomised trials	serious ^a	not serious	not serious	not serious	none	510	457	-	SMD 0.06 lower (0.23 lower to 0.12 higher)	⊕⊕⊕○ MODERATE	

CI: Confidence interval; SMD: Standardised mean difference; RR: Risk ratio

Explanations

- Downgraded one level for serious limitations in study design or execution: >50% of risk of bias judgements were rated unclear or high risk of bias.
- Downgraded one level for serious inconsistency: unexplained statistical heterogeneity >50%.
- Downgraded two levels for very serious limitations in study design or execution: >75% of risk of bias judgements were rated unclear or high risk of bias.
- Downgraded by one level for serious imprecision: small number of participants (<400 participants) or studies (<2 studies) contributing to the analyses.
- Downgraded by one level for indirectness: few conditions presented in the meta-analysis so estimate may not be applicable to other chronic pain conditions.

Table 10: WHO GRADE Profile: Psychological therapies vs. active (non-psychological)/standard care or waitlist for children and adolescents with chronic pain, by therapy classification

Question: Psychological therapies compared to active (non-psychological)/standard care or waitlist in children and adolescents with chronic pain. Subgroup analysis by therapy classification

Setting: Global

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by therapy type	placebo	Relative (95% CI)	Absolute (95% CI)		
Pain intensity, post-treatment - CBT												
31	randomised trials	serious ^a	serious ^b	not serious	not serious	none	1344	1259	-	SMD 0.27 lower (0.4 lower to 0.14 lower)	⊕⊕○○ LOW	
Pain intensity, post-treatment - Relaxation training												
4	randomised trials	very serious ^c	not serious	serious ^d	serious ^e	none	136	113	-	SMD 0.13 higher (0.13 lower to 0.38 higher)	⊕○○○ VERY LOW	
Pain intensity, post-treatment - Behavioural therapy												
2	randomised trials	very serious ^c	very serious ^f	serious ^d	very serious ^g	none	35	25	-	SMD 1.23 lower (2.74 lower to 0.27 higher)	⊕○○○ VERY LOW	
Pain intensity, follow-up - CBT												

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by therapy type	placebo	Relative (95% CI)	Absolute (95% CI)		
17	randomised trials	serious ^a	serious ^b	not serious	not serious	none	918	809	-	SMD 0.09 lower (0.27 lower to 0.08 higher)	⊕⊕○○ LOW	

Pain intensity, follow-up - Relaxation training

2	randomised trials	serious ^a	not serious	serious ^d	very serious ^g	none	43	49	-	SMD 0.1 lower (0.51 lower to 0.31 higher)	⊕○○○ VERY LOW	
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50% reduction in pain, post-treatment - CBT

12	randomised trials	serious ^a	not serious	serious ^d	not serious	none	161/351 (45.9%)	72/312 (23.1%)	RR 1.86 (1.48 to 2.32)	198 more per 1,000 (from 111 more to 305 more)	⊕⊕○○ LOW	
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50% reduction in pain, post-treatment - Relaxation therapy

7	randomised trials	very serious ^c	very serious ^f	serious ^d	serious ^e	none	64/145 (44.1%)	11/93 (11.8%)	RR 3.78 (0.99 to 14.46)	329 more per 1,000 (from 1 fewer to 1,000 more)	⊕○○○ VERY LOW	
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50% reduction in pain, post-treatment - Behaviour therapy

Certainty assessment							№ of patients		Effect		Certainty	Importance
№ of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by therapy type	placebo	Relative (95% CI)	Absolute (95% CI)		
4	randomised trials	very serious ^c	very serious ^f	serious ^d	very serious ^g	none	47/62 (75.8%)	13/53 (24.5%)	RR 2.71 (0.69 to 10.60)	419 more per 1,000 (from 76 fewer to 1,000 more)	⊕○○○ VERY LOW	

Functional disability, post-treatment - CBT

21	randomised trials	serious ^a	serious ^b	not serious	not serious	none	1142	1085	-	SMD 0.24 lower (0.38 lower to 0.1 lower)	⊕⊕○○ LOW	
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Functional disability, follow-up - CBT

12	randomised trials	not serious	serious ^b	not serious	not serious	none	867	795	-	SMD 0.23 lower (0.4 lower to 0.06 lower)	⊕⊕⊕○ MODERATE	
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Emotional functioning (depression), post-treatment - CBT

17	randomised trials	serious ^a	not serious	not serious	not serious	none	850	809	-	SMD 0.01 lower (0.11 lower to 0.08 higher)	⊕⊕⊕○ MODERATE	
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Emotional functioning (depression), follow-up - CBT

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by therapy type	placebo	Relative (95% CI)	Absolute (95% CI)		
8	randomised trials	not serious	not serious	not serious	not serious	none	581	570	-	SMD 0.03 higher (0.08 lower to 0.15 higher)	⊕⊕⊕⊕ HIGH	

Emotional functioning (anxiety), post-treatment - CBT

16	randomised trials	serious ^a	serious ^b	not serious	not serious	none	997	882	-	SMD 0.09 lower (0.23 lower to 0.06 higher)	⊕⊕○○ LOW	
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Emotional functioning (anxiety), follow-up - CBT

10	randomised trials	not serious	not serious	serious ^d	not serious	none	734	634	-	SMD 0.07 lower (0.18 lower to 0.03 higher)	⊕⊕⊕○ MODERATE	
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CI: Confidence interval; SMD: Standardised mean difference; RR: Risk ratio

Explanations

- Downgraded one level for serious limitations in study design or execution: >50% of risk of bias judgements were rated unclear or high risk of bias.
- Downgraded one level for serious inconsistency: unexplained statistical heterogeneity >50%.
- Downgraded two levels for very serious limitations in study design or execution: >75% of risk of bias judgements were rated unclear or high risk of bias.
- Downgraded by one level for indirectness: few conditions presented in the meta-analysis so estimate may not be applicable to other chronic pain conditions.
- Downgraded by one level for serious imprecision: small number of participants (<400 participants) or studies (<2 studies) contributing to the analyses.

f. Downgraded by two levels for very serious inconsistency: unexplained statistical heterogeneity >75%.

g. Downgraded by two levels for very serious imprecision: very small number of participants (<200 participants) or studies (<2 studies) contributing to the analyses.

Table 11: WHO GRADE Profile: Psychological therapies vs. active (non-psychological)/standard care or waitlist for children and adolescents with chronic pain, by size

Question: Psychological therapies compared to active (non-psychological)/standard care or waitlist in children and adolescents with chronic pain. Subgroup analysis by size (less than and more than 20 participants/arm)

Setting: Global

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by size	placebo	Relative (95% CI)	Absolute (95% CI)		

Pain intensity, post-treatment - <20 participants/arm

13	randomised trials	serious ^a	serious ^b	not serious	very serious ^{c,d}	none	270	196	-	SMD 0.62 lower (0.95 lower to 0.3 lower)	⊕○○○ VERY LOW	
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Pain intensity, post-treatment - >20 participants/arm

25	randomised trials	serious ^a	serious ^b	not serious	not serious	none	1314	1245	-	SMD 0.17 lower (0.3 lower to 0.04 lower)	⊕⊕○○ LOW	
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Pain intensity, follow-up - <20 participants/arm

8	randomised trials	serious ^a	serious ^b	not serious	very serious ^{c,d}	none	142	117	-	SMD 0.3 lower (0.72 lower to 0.12 higher)	⊕○○○ VERY LOW	
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Pain intensity, follow-up - >20 participants/arm

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by size	placebo	Relative (95% CI)	Absolute (95% CI)		
13	randomised trials	serious ^a	serious ^b	not serious	not serious	none	855	767	-	SMD 0.08 lower (0.25 lower to 0.09 higher)	⊕⊕○○ LOW	

50% reduction in pain, post-treatment - >20 participants/arm

6	randomised trials	serious ^a	not serious	serious ^e	serious ^e	none	127/312 (40.7%)	59/240 (24.6%)	RR 1.58 (1.16 to 2.17)	143 more per 1,000 (from 39 more to 288 more)	⊕○○○ VERY LOW	
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50% reduction in pain, post-treatment - <20 participants/arm

16	randomised trials	very serious ^f	not serious	serious ^e	not serious	none	180/332 (54.2%)	45/256 (17.6%)	RR 2.69 (1.81 to 4.01)	297 more per 1,000 (from 142 more to 529 more)	⊕○○○ VERY LOW	
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Functional disability, post-treatment - <20 participants/arm

8	randomised trials	serious ^a	serious ^b	not serious	very serious ^{c,d}	none	131	128	-	SMD 0.49 lower (0.93 lower to 0.05 lower)	⊕○○○ VERY LOW	
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Functional disability, post-treatment - >20 participants/arm

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by size	placebo	Relative (95% CI)	Absolute (95% CI)		
16	randomised trials	not serious	serious ^b	not serious	not serious	none	1078	1021	-	SMD 0.18 lower (0.32 lower to 0.05 lower)	⊕⊕⊕○ MODERATE	

Functional disability, follow-up - <20 participants/arm

3	randomised trials	serious ^a	serious ^b	not serious	very serious ^{c,d}	none	42	41	-	SMD 0.99 lower (1.85 lower to 0.13 lower)	⊕○○○ VERY LOW	
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Functional disability, follow-up - >20 participants/arm

11	randomised trials	not serious	not serious	not serious	not serious	none	872	800	-	SMD 0.16 lower (0.27 lower to 0.05 lower)	⊕⊕⊕⊕ HIGH	
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Health-related quality of life, post-treatment - <20 participants/arm

3	randomised trials	very serious ^{f,g}	very serious ^g	not serious	very serious ^{d,h}	none	67	45	-	SMD 0.32 lower (1.26 lower to 0.62 higher)	⊕○○○ VERY LOW	
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Health-related quality of life, post-treatment - >20 participants/arm

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by size	placebo	Relative (95% CI)	Absolute (95% CI)		
9	randomised trials	not serious	not serious	not serious	not serious	none	621	535	-	SMD 0.04 SD lower (0.16 lower to 0.08 higher)	⊕⊕⊕⊕ HIGH	

Emotional functioning (depression), post-treatment - <20 participants/arm

5	randomised trials	serious ^a	not serious	not serious	very serious ^{c,d}	none	114	76	-	SMD 0.03 lower (0.35 lower to 0.3 higher)	⊕○○○ VERY LOW	
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Emotional functioning (depression), post-treatment - >20 participants/arm

14	randomised trials	not serious	not serious	not serious	not serious	none	803	788	-	SMD 0.02 lower (0.12 lower to 0.08 higher)	⊕⊕⊕⊕ HIGH	
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Emotional functioning (depression), follow-up - <20 participants/arm

3	randomised trials	serious ^a	not serious	not serious	very serious ^h	none	73	43	-	SMD 0.04 lower (0.51 lower to 0.42 higher)	⊕○○○ VERY LOW	
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Emotional functioning (depression), follow-up - >20 participants/arm

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by size	placebo	Relative (95% CI)	Absolute (95% CI)		
9	randomised trials	not serious	not serious	not serious	not serious	none	636	623	-	SMD 0.06 higher (0.05 lower to 0.17 higher)	⊕⊕⊕⊕ HIGH	

Emotional functioning (anxiety), post-treatment - <20 participants/arm

5	randomised trials	very serious ^a	not serious	not serious	very serious ^h	none	120	73	-	SMD 0.01 lower (0.43 lower to 0.4 higher)	⊕○○○ VERY LOW	
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Emotional functioning (anxiety), post-treatment - >20 participants/arm

14	randomised trials	not serious	not serious	not serious	not serious	none	964	874	-	SMD 0.09 lower (0.22 lower to 0.04 higher)	⊕⊕⊕⊕ HIGH	
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Emotional functioning (anxiety), follow-up - <20 participants/arm

4	randomised trials	serious ^a	not serious	not serious	very serious ^{d,e}	none	88	54	-	SMD 0.15 lower (0.51 lower to 0.21 higher)	⊕○○○ VERY LOW	
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Emotional functioning (anxiety), follow-up - >20 participants/arm

Certainty assessment							No of patients		Effect		Certainty	Importance
No of studies	Study design	Risk of bias	Inconsistency	Indirectness	Imprecision	Other considerations	Subgroup analysis: by size	placebo	Relative (95% CI)	Absolute (95% CI)		
9	randomised trials	not serious	not serious	not serious	not serious	none	732	641	-	SMD 0.06 lower (0.17 lower to 0.05 higher)	⊕⊕⊕⊕ HIGH	

CI: Confidence interval; SMD: Standardised mean difference; RR: Risk ratio

Explanations

- Downgraded one level for serious limitations in study design or execution: >50% of risk of bias judgements were rated unclear or high risk of bias.
- Downgraded one level for serious inconsistency: unexplained statistical heterogeneity >50%.
- Downgraded by one level for serious imprecision: small number of participants (<400 participants) or studies (<2 studies) contributing to the analyses.
- Downgraded by one level for serious imprecision: wide confidence intervals
- Downgraded one level for serious inconsistency: unexplained statistical heterogeneity >50%.
- Downgraded by two levels for very serious imprecision: very small number of participants (<200 participants) or studies (<2 studies) contributing to the analyses.
- Downgraded by two levels for very serious inconsistency: unexplained statistical heterogeneity >75%.
- Downgraded by two levels for very serious imprecision: very small number of participants (<200 participants) or studies (<2 studies) contributing to the analyses.

Table 12. Sensitivity analysis with and without non-chronic headache/migraine studies

Outcome	Psychological therapy vs. any control		Sensitivity analysis excluding non-chronic headache	
	Effect size	Quality of evidence	Effect size	Quality of evidence
Pain intensity, post-treatment	SMD -0.29, 95% CI -0.43 to -0.16, I ² 67% K = 38; N = 3025	⊕⊕○○ LOW	SMD -0.34, 95% CI -0.51 to -0.18, I ² 73% K = 28; N = 2451	⊕⊕○○ LOW
Pain intensity, follow-up	SMD -0.14, 95% CI -0.30 to 0.02, I ² 61% K = 21; N = 1881	⊕⊕○○ LOW	SMD -0.15, 95% CI -0.34 to 0.03, I ² 68% K = 15; N = 1653	⊕⊕○○ LOW
30% pain reduction, post-treatment	RR 1.13, 95% CI 0.64 to 2.02, I ² = NA K = 1; N = 104	⊕○○○ VERY LOW	RR 1.13, 95% CI 0.64 to 2.02, I ² = NA K = 1; N = 104	⊕○○○ VERY LOW
30% pain reduction, follow-up	RR 1.07, 95% CI 0.77 to 1.49, I ² = NA K = 1; N = 104	⊕○○○ VERY LOW	RR 1.07, 95% CI 0.77 to 1.49, I ² = NA K = 1; N = 104	⊕○○○ VERY LOW
50% pain reduction, post-treatment	RR 2.11, 95% CI 1.61 to 2.77, I ² = 41% K = 22; N = 1140	⊕⊕○○ LOW	RR 2.58, 95% CI 1.71 to 3.89, I ² 19% K = 8; N = 448	⊕⊕○○ LOW
50% pain reduction, follow-up	RR 2.09, 95% CI 1.29 to 3.38, I ² = 56% K = 9; N = 445	⊕○○○ VERY LOW	SMD 3.30, 95% CI 1.89 to 5.76, I ² 0% K = 5; N = 228	⊕○○○ VERY LOW
Health-related quality of life, post-treatment	SMD -0.07, 95% CI -0.27 to 0.14, I ² 36% K = 12; N = 1268	⊕⊕⊕○ MODERATE	SMD -0.03, 95% CI -0.15 to 0.09, I ² 0% K = 9; N = 1156	⊕⊕⊕⊕ HIGH
Health-related quality of life, follow-up	SMD -0.01, 95% CI -0.21 to 0.19, I ² 0% K = 6; N = 766	⊕⊕○○ LOW	SMD -0.01, 95% CI -0.23 to 0.20, I ² 0% K = 2; N = 336	⊕○○○ VERY LOW
Functional disability, post-treatment	SMD -0.25, 95% CI -0.39 to -0.11, I ² 60% K = 24; N = 2358	⊕⊕○○ LOW	SMD -0.26, 95% CI -0.42 to 0.10, I ² 65% K = 20; N = 2139	⊕⊕⊕○ MODERATE
Functional disability, follow-up	SMD -0.23, 95% CI -0.38 to 0.08, I ² 55% K = 14; N = 1755	⊕⊕⊕○ MODERATE	SMD -0.23, 95% CI -0.39 to -0.07, I ² 59% K = 12; N = 1683	⊕⊕⊕○ MODERATE
Role Functioning, post treatment	SMD -0.23, 95% CI -0.62 to 0.16, I ² 76% K = 9; N = 856	⊕○○○ VERY LOW	SMD -0.19, 95% CI -0.61 to 0.24, I ² 81% K = 7; N = 514	⊕○○○ VERY LOW
Role Functioning, follow up	SMD 0.54, 95% CI -0.15 to 1.23, I ² 81% K = 4 ; N = 476	⊕○○○ VERY LOW	SMD 0.54, 95% CI -0.15 to 1.23, I ² 66% K = 2; N = 110	⊕○○○ VERY LOW

Emotional functioning: Depression, post-treatment	SMD -0.02, 95% CI -0.11 to 0.08, I ² 0% K = 19; N = 1781	⊕⊕⊕⊕ HIGH	SMD -0.02, 95% CI -0.12 to 0.08, I ² 4% K = 16; N = 1633	⊕⊕⊕⊕ HIGH
Emotional functioning: Depression, follow-up	SMD 0.06, 95% CI -0.05 to 0.16, I ² 0% K = 12; N = 1375	⊕⊕⊕⊕ HIGH	SMD 0.04, 95% CI -0.08 to 0.15, I ² 0% K = 9; N = 1193	⊕⊕⊕⊕ HIGH
Emotional functioning: Anxiety, post-treatment	SMD -0.08, 95% CI -0.21 to 0.04, I ² 44% K = 19; N = 2031	⊕⊕⊕○ MODERATE	SMD -0.06, 95% CI -0.20 to 0.09, I ² 52% K = 15; N = 1848	⊕⊕⊕○ MODERATE
Emotional functioning: Anxiety, follow-up	SMD -0.07, 95% CI -0.17 to 0.03, I ² 0% K = 13; N = 1515	⊕⊕⊕⊕ HIGH	SMD -0.05, 95% CI -0.16 to 0.05, I ² 0% K = 10; N = 1348	⊕⊕⊕⊕ HIGH
Sleep quality, post-treatment	SMD -0.08, 95% CI -0.110 to 0.27, I ² 0% K = 3; N = 426	⊕⊕○○ LOW	SMD 0.03, 95% CI -0.17 to 0.23, I ² 0% K = 2; N = 381	⊕○○○ VERY LOW
Sleep quality, follow up	SMD 0, 95% CI -0.24 to 0.24, I ² NA K = 1; N = 269	⊕○○○ VERY LOW	SMD 0.00, 95% CI -0.24 to 0.24, I ² NA K = 1; N = 269	⊕○○○ VERY LOW
Activity participation, follow up	SMD -0.99, 95% CI -1.62 to -0.36, I ² NA K = 1; N = 44	⊕○○○ VERY LOW	SMD -0.99, 95% CI -1.62 to -0.36, I ² NA K = 1; N = 44	⊕○○○ VERY LOW
Global satisfaction with treatment, post treatment	SMD -0.43, 95% CI -0.6 to -0.26, I ² 0% K = 6; N = 535	⊕⊕⊕○ MODERATE	K = 0; N = 0	N/A
Global satisfaction with treatment, follow up	MD 2.20, 95% CI 3.5 to 0.9, I ² NA K = 1; N = 269	⊕○○○ VERY LOW	K = 0; N = 0	N/A
Patient Global Impression of Change, post treatment	SMD -0.55, 95% CI -0.89 to -0.22, I ² NA K = 1; N = 143	⊕○○○ VERY LOW	SMD -0.55, 95% CI -0.89 to -0.22, I ² NA K = 1; N = 143	⊕○○○ VERY LOW
Patient Global Impression of Change, follow up	SMD -0.43, 95% CI -0.76 to -0.1, I ² NA K = 1; N = 143	⊕○○○ VERY LOW	SMD -0.43, 95% CI -0.76 to -0.10, I ² NA K = 1; N = 143	⊕○○○ VERY LOW

