Prevention of anxiety and depression: a network meta analysis of educational setting-based interventions

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EBI Meeting, 27th November 2019
Anxiety

Depression

>56,000 participants
Targeted, secondary school: post-intervention

Targeted Secondary
Depression (k=24); Anxiety (k=15)

Waitlist
- 0.22 (-0.28 to 0.70)
- 0.30 (0.09 to 0.53)
- 0.04 (-0.72 to 0.81)

Usual curriculum
- -0.81 (-1.82 to 0.18)
- -0.09 (-0.39 to 0.22)

Attention control
- 0.02 (-0.63 to 0.66)
- 1.08 (0.52 to 1.64)

Psycho-support
- -0.22 (-0.58 to 0.13)
- 0.03 (-0.11 to 0.16)

CBT
- -3.74 (-4.90 to -2.59)
- -0.65 (-1.50 to 0.16)

3rd wave
- -0.90 (-2.21 to 0.4)
- -0.17 (-0.45 to 0.11)

IPT
- -0.28 (-1.13 to 0.58)
- -0.47 (-0.86 to -0.09)

Bias modification
- 0.12 (-0.50 to 0.72)
- -0.18 (-0.55 to 0.21)

Exercise
- 0.03 (-0.42 to 0.48)

Psycho-education
- Biofeedback
- Mindfulness/relaxation
### Timepoint

**Intervention relative to control**

**SMD (95% Crl)**

<table>
<thead>
<tr>
<th>Timepoint</th>
<th>Depression (k=5); Anxiety (k=4)</th>
<th>Wait list</th>
<th>Psycho-support</th>
<th>CBT</th>
<th>BT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-intervention</td>
<td>-0.14 (-2.07, 1.80)</td>
<td>-0.08 (-1.66, 1.51)</td>
<td>-0.51 (-1.96, 0.94)</td>
<td>-0.31 (-1.50, 0.89)</td>
<td>-0.42 (-1.47, 0.63)</td>
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<tr>
<td>6 to 12 months</td>
<td>0.52 (-0.08, 1.12)</td>
<td>0.58 (0.07, 1.09)</td>
<td>-0.14 (-0.74, 0.46)</td>
<td>0.08 (-0.43, 0.58)</td>
<td>-0.22 (-0.73, 0.30)</td>
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<tr>
<td>&gt;25 months</td>
<td>-0.18 (-0.38, 0.02)</td>
<td>-0.19 (-0.39, 0.00)</td>
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University setting

Self-report depression and anxiety for universal population immediately post-intervention.
• There is insufficient evidence to recommend education setting based anxiety and depression prevention interventions.
  • ‘clinically’ according to DSM/ICD criteria
  • Interventions which focus (solely) on the young person’s cognitions, emotions, mood and how to manage

• Our findings contrast with previous published reviews...
School-based interventions to prevent anxiety and depression in children and young people: a systematic review and network meta-analysis

Deborah M. Caldwell, Sarah R. Davies, Sarah E. Hetrick, Jennifer C. Palmer, Paola Caro, José A. López-López, David Gunnell, Judith Kidger, James Thomas, Clare French, Emily Stockings, Iona Campbell, Nicky Welton

Summary
Background Rates of anxiety and depression are increasing among children and young people. Recent policies have focused on primary prevention of mental disorders in children and young people, with schools at the forefront of implementation. There is limited information for the comparative effectiveness of the multiple interventions available.

Methods We did a systematic review and network meta-analysis, searching Medline, Embase, PsycINFO, and Cochrane Central Register of Controlled trials for published and unpublished, passive and active-controlled randomised and quasi-randomised trials. We included educational setting-based, universal or targeted interventions in which the primary aim was the prevention of anxiety and depression in children and young people aged 4–18 years. Primary outcomes were post-intervention self-report anxiety and depression, wellbeing, suicidal ideation or self-harm. We assessed risk of bias following the Cochrane Handbook for Systematic Reviews of Interventions. We estimated standardised mean differences (SMD) using random effects network meta-analysis in a Bayesian framework. The study is registered with PROSPERO, number CRD42016041834.

Findings 1512 full-text articles were independently screened for inclusion by two reviewers, from which 137 studies of 56,620 participants were included. 20 studies were assessed as being at low risk of bias for both random sequence generation and allocation concealment. There was weak evidence to suggest that cognitive behavioural interventions might reduce anxiety in primary and secondary settings. In universal secondary settings, mindfulness and relaxation-based interventions showed a reduction in anxiety symptoms relative to usual curriculum (SMD −0.85, 95% credible interval −1.14 to −0.59). There was a lack of evidence to support any one type of intervention being effective to prevent depression in universal or targeted primary or secondary settings. Comparison-adjusted funnel plots suggest the presence of small-study effects for the universal secondary anxiety analysis. Network meta-analysis was not feasible for wellbeing or suicidal ideation or self-harm outcomes, and results are reported narratively.

Interpretation Considering unclear risk of bias and probable small study effects for anxiety, we conclude there is little evidence that educational setting-based interventions focused solely on the prevention of depression or anxiety are effective. Future research could consider multilevel, systems-based interventions as an alternative to the downstream interventions considered here.

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