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Practitioner Review: Unguided and guided self-help interventions for common mental health disorders in children and adolescents: a systematic review and meta-analysis

Sophie D. Bennett, Pim Cuijpers, David Daniel Ebert, Mhairi McKenzie Smith, Anna E. Coughtrey, Isobel Heyman, Grazia Manzotti, and Roz Shafran

Mental health problems are common in children and adolescents, yet evidence-based treatments are hard to access. Self-help interventions can increase such access. The aim of this paper was to conduct a systematic review and meta-analysis of the use of guided and unguided self-help for children and young people with symptoms of common mental health disorders. In contrast to previous reviews of self-help in children, all types of self-help and multiple mental health disorders were investigated in order to increase power to investigate potential moderators of efficacy. Importantly, studies with control arms as well as those comparing against traditional face-to-face treatments were included. Fifty studies (n = 3396 participants in self-help/guided self-help conditions) met the inclusion criteria. Results demonstrated a moderate positive effect size for guided and unguided self-help interventions when compared against a control group (n = 44; g = 0.49; 95% CI: 0.37 to 0.61, p < .01) and a small but significant negative effect size when compared to other therapies (n = 15; g = -0.17; 95% CI: -0.27 to -0.07, p < .01). Few potential moderators had a significant effect on outcome. Most comparisons resulted in significant heterogeneity and therefore results are interpreted with caution. Keywords: Self-help; anxiety; depression; disruptive behaviour; children; adolescents.

Introduction

A recent UK report found that up to 75% of referrals to local Child and Adolescent Mental Health Services were declined by the service and for those accepted, there was an average waiting time for treatment of up to 200 days (Children’s Commissioner, 2016). One way of meeting a large need for psychological therapy is through the use of unguided or guided self-help interventions; the latter involving varying degrees of input from a therapist (Bekker, Griffiths, & Barrett, 2016). Self-help reduces both the time burden associated with visiting a clinic and the impact of stigma, as it is possible to access therapy without others knowing. In addition, it is likely to be cost-effective as it requires less therapeutic time and expertise, although this has not yet been fully established (Lewis, Pearce, & Bisson, 2012).

The evidence-base for self-help in children and adolescents is growing, partly as a response to the increasing demand for psychological interventions (Bekker et al., 2016) and the UK Children and Young People’s Improving Access to Psychological Therapies (CYP-IAPT) Programme is training therapists to deliver guided self-help interventions within a stepped-care model. At the same time, there has been a proliferation of self-help interventions (primarily of technology based interventions in recent years) and of associated reviews and meta-analyses. The reviews to date have made an important contribution to the literature but are limited in that they have been highly specific, focusing on only one disorder (e.g. anxiety), type of self-help (e.g. internet, computerised) or age group. For example, a meta-analysis of 14 studies investigating self-help for the treatment of emotional problems in adolescents and young adults (12–25 years old) found only a small, nonsignificant effect size for emotional symptoms, although study quality was poor (Ahmead & Bower, 2008). This analysis did not include younger children and included only those interventions with no or minimal individual contact with a health professional or researcher and therefore some self-help interventions may have been excluded, minimising the ability to investigate the extent to which guidance could be considered as a moderator.

More recent reviews of computerised interventions for anxiety and/or depression in youth, of which the majority were self-help or guided self-help, demonstrated medium to large effect sizes (Ebert et al., 2015; Pennant et al., 2015; Rooksby, Elooafkaou, Humphris, Clarkson, & Freeman, 2015; Stasiak et al., 2016); although findings were inconclusive.

Conflict of interest statement: See Acknowledgements for full disclosures.

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for younger children (Pennant et al., 2015) and noncomputerised interventions, such as bibliother-
apy, were not included and therefore the type of self-
help could not be investigated. Rickwood and Brad-
ford (2012) conducted a review of self-help only for
mild anxiety disorders; the review was not limited to
Randomised Controlled Trials (RCTs) and only con-
tained six studies. Self-help programmes may also
be effective in the treatment of childhood behaviour
disorders (Baumel & Faber, 2018; Montgomery,
Bjornstad, & Dennis, 2006; O’Brien & Daley, 2011). Again, these reviews have been specific and/
or not restricted to self-help and guided self-help.
For example Baumel and Faber (2018) reviewed the
impact of technology-assisted parenting pro-
grames for young people with disruptive behav-
iors.

The specificity of these previous reviews there-
fore reduces power to investigate potential moder-
at ing variables such as the type of self-help (paper
versus online) or impact of guidance. Considering
the type of self-help has important implications for
service development and delivery (e.g. comput-
erised interventions may require provision of com-
puters for those who do not have access at home
and may be more expensive to produce in the
short term), yet reviews to date have not investi-
gated this as a moderating variable. Furthermore,
while it has been assumed that young people
prefer modern technology (e.g. Baumel & Faber,
2018), it is not yet established whether this is in
fact the case.

The specificity of previous reviews additionally
reduces the ability to meta-analyse studies compar-
ing self-help against standard face-to-face treat-
ments as very few such studies exist for each
mental health disorder in children. Such analysis
is important given that the CYP-IAPT model is based
on a stepped-care approach and that UK National
Institute for Health and Care Excellence (NICE)
guidance recommends guided self-help as a first
step for intervention in some child mental health
disorders (NICE, 2005). Face-to-face treatments
differ in their efficacy, for example interventions for
anxiety have demonstrated greater effect sizes than
interventions for depression (e.g. Spek et al., 2007).
Therefore, it may be that self-help is similar in
efficacy to some face-to-face interventions but has
small effect sizes when compared to no treatment
and therefore may not be a preferred option for
commissioners. Conversely, there may be self-help
treatments that do not compare favourably to face-
to-face treatments but nevertheless are efficacious
in comparison to no treatment and therefore suit-
able to be used in a stepped-care approach. Knowl-
edge of patient characteristics that affect efficacy,
including whether symptoms meet diagnostic crite-
rion, would then support decisions regarding which
patients are entered into which ‘step’ in such a care
pathway.

Adult reviews have increased power through com-
bining studies of interventions for anxiety and
depression (e.g. Cuijpers, Donker, van Straten, Li,
& Andersson, 2010) due to high rates of comorbid-
ity between the conditions (Andrews, Slade, & Issakidis,
2002) as well as the presence of transdiagnostic
interventions designed to treat both anxiety and
depression (e.g. Andrews, Cuijpers, Craske, McEvoy,
& Titov, 2010). Similarly, children and young people
tend to have multiple comorbidities, with 40% hav-
ing more than one diagnosis (Merikangas et al.,
2010) and high rates of comorbidity amongst the
most common childhood mental health disorders
(anxiety, depression and disruptive behaviour disor-
ders). There are child interventions designed to treat
comorbid mood and conduct problems (e.g. the
Modular Approach to Therapy for Children with
Anxiety, Depression, Trauma, or Conduct Problems
– MATCH-ADTC; Chorpita & Weisz, 2009) and some
child studies have investigated the impact of beha-
vior interventions on mood and vice versa (e.g.
Baker, Sanders, Turner & Moraw ska, 2017a). How-
ever, no child reviews to date have combined inter-
ventions for anxiety, depression and disruptive
behaviour disorders.

This review therefore combines interventions for
anxiety, depression and disruptive behaviour in order
to investigate possible moderating variables. An
understanding of important moderating variables
and user satisfaction of interventions may support
the development of guidance regarding self-help pro-
grames for children and young people. In particular,
it could support services to decide which of the
numerous self-help interventions to recommend as
they roll out self-help as part of stepped-care.

Objectives

The main aim of this review was to systematically
assess the evidence-base for the use of unguided
self-help and guided self-help for children and young
people with symptoms of common mental health
disorders (symptoms of anxiety, depression and/or
disruptive behaviour). Within this, the objectives
were to:

1. Evaluate the efficacy of unguided self-help and
guided self-help interventions for symptoms of
common mental health disorders in children and
adolescents.
2. Compare the effectiveness of unguided self-help
and guided self-help interventions to standard
face-to-face interventions for common mental
health disorders in children and adolescents.
3. Evaluate the presence and/or type of
guidance given is associated with outcome.
4. Determine whether type and severity of mental
health disorder is associated with outcome.
5. Assess treatment acceptability of unguided and
guided self-help for children and young people.

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Methods

Identification and selection of studies

Search methods. Two reviewers independently conducted searches and assessed them for inclusion. Disagreements were resolved through discussion with a third reviewer.

Databases: EMBASE, MEDLINE, PsycINFO, CINAHL and the Cochrane Central Register of Controlled Trials databases were searched from inception to 11th February 2018. In addition, grey literature searches were conducted through searching the PsycExtra and WorldCat Theses and Dissertations databases. We also searched for trial registrations through clinicaltrials.gov and WHO International Clinical Trials Registry Platform. Citation searches and searches of reference lists of identified papers were completed. Reference lists of previous reviews were also examined. Additional literature was sought through personal contact with researchers in the area. No restrictions were placed on publication date or language.

Inclusion Criteria. Study type: To minimise bias, only RCTs were included in the search.

Participants: Children up to the age of 18 years, with no lower age limit. Studies with mixed samples including young adults to 25 years old were included, provided the mean age of the sample was under 18 years old. It was acceptable for the intervention to be undertaken primarily with parents, provided that child outcomes were reported. Children must have had impairing symptoms of depression, anxiety and/or disruptive behaviour, assessed through a measure of symptoms such as the Strengths and Difficulties Questionnaire (Goodman, 1997), a diagnostic instrument, such as the Anxiety Disorders Interview Schedule – Child/Parent (Silverman & Albano, 1996) or self/parent reported difficulties.

Interventions: Self-help interventions, including bibliotherapy and computerised therapy were included. Guided self-help interventions were included in the review, provided that the main aim of the intervention was ‘self-help’ and that the guidance was restricted to supporting children and/or parents through the programme rather than teaching new materials. Studies that evaluated interventions in which the guided self-help was a part of the intervention (blended treatments with face-to-face psychotherapy and some guided self-help elements) were excluded.

Comparators: Trials with any control group (waiting list, treatment as usual, placebo/attention control or other) as well as those comparing against another psychological treatment were included. Studies that reported insufficient data for the effect size to be calculated were excluded.

Outcome measures: Outcome measures were any measure related to mental health, such as standardised measures of depression, anxiety, or disruptive behaviour or diagnostic interviews. The measure had to relate to the mental health of the child and not the parent/carer, although parent-reports of child health/behaviour were acceptable. Qualitative results from measures of treatment acceptability were also extracted where available.

Search terms: Search terms including MeSH terms were divided into three main areas: self-help, intervention and mental health disorder, and the areas combined with the AND operator. See Appendix S1 for full list of search terms. Searches were developed and conducted in collaboration with a librarian (GM).

Data extraction and management

Data extraction was completed independently by two raters for each paper and disagreements were resolved through discussion with a third reviewer. Data were extracted on a range of variables: study design characteristics, participant characteristics and intervention characteristics, using a predesigned data extraction form.

Study design. Data were extracted regarding the comparator (face-to-face, attention, waiting list, treatment as usual, medication) and the target condition (anxiety, depression, disruptive behaviour or mixed). Length of follow-up (where present) was also determined. We also categorised studies reporting Intention to Treat (ITT) data versus those which did not (yes/no).

Participant characteristics. Studies were categorised into child (all participants 13 years old or younger), adolescent (participants all older than 13 years old) or mixed studies. Data on mean age and percentage of males were also extracted, in addition to whether participants met diagnostic criteria for the primary mental health disorder using a validated diagnostic measure (yes/no).

Intervention characteristics. We extracted data regarding: whether the intervention was unguided or guided self-help (guidance yes/no) and how the self-help was delivered (written materials/computer/mixed/other).

Assessment of risk of bias in included studies

Risk of bias was assessed using the Cochrane Risk of Bias Tool (Higgins et al., 2011). Ten percent of studies were rated by a second independent rater. Disagreements were resolved through discussion with a third independent reviewer. This tool assesses selection bias (including random sequence generation and allocation concealment), blinding of participants and personnel, blinding of outcome assessment (considered at the individual outcome measure level), attrition bias/Incomplete outcome data and selective reporting. Regarding blinding of outcome measures, self-report measures were considered to be at low risk of bias for the purposes of this review. Regarding selective reporting, studies were considered to be at low risk only if there was a study registration or published protocol and the outcomes in the paper matched those prespecified. We examined the relationship between risk of bias and effect size by performing meta-regression techniques. In these analyses, the total bias score was entered as the dependent variable. We compared the effect sizes of studies rated as low risk of bias (all domains evaluated as being at low risk of bias) compared to studies with some risk of bias (one or more domains evaluated as being at unclear or high risk of bias).

Meta-analysis

Measurement of treatment effect. Separate analyses were conducted for studies using control groups and those comparing against face-to-face interventions. Many studies failed to specify a primary outcome measure and therefore multiple measures were used for several studies. This is particularly the case for behaviour interventions. Only measures that directly related to child outcomes were included. Measures of parenting practices or parenting self-efficacy were not included. In cases in which multiple measures were reported, no measures were prioritised. Instead, we combined the results of all measures.

We calculated Hedges’ g for each study outcome, which is the standardised mean difference adjusting for small sample
sizes. We used the endpoint score only. Where two or more measures were used per outcome (e.g. depression), the pooled effect sizes were calculated in order to include only one effect size per study in the analysis. Only measures relating to the primary outcome of the disorder were used to generate mean effect sizes (e.g. only measures of depressive symptomatology for a study of a depression intervention). To calculate pooled mean effect sizes, we used Comprehensive Meta-Analysis (CMA) software Version 3 (Biostat, Inc 2015). A random-effects pooling model was used in all analyses. We transformed standardised mean differences into the Number Needed to Treat (NNT; the number of patients that must be treated to generate one additional positive outcome) using the Kraemer and Kupfer (2006) formula.

We conducted a series of subgroup analyses, according to the mixed effects model. In this model, studies within subgroups are pooled with the random-effects model, whilst tests for significant differences between subgroups are conducted with the fixed-effects model (Borenstein, Hedges, Higgins, & Rothstein, 2009). For continuous variables, we used random-effects method of moments meta-regression analyses to test whether a significant relationship existed between the continuous variable and the effect size, as indicated by a Z value and associated p-values.

We aimed to analyse the following subgroups:

- Different diagnoses (anxiety, depression and disruptive behaviour).
- Different types of self-help (bibliotherapy versus computerised).
- Different amounts of guidance (i.e. self-help versus guided self-help).
- Different types of guidance (e.g. email, face-to-face, telephone).
- Different severities of mental health disorder (diagnosis confirmed with diagnostic interview versus not meeting diagnostic threshold or diagnosis not confirmed).

In addition, we aimed to conduct meta-regression analyses for age and total risk of bias. Finally, we conducted sensitivity analyses for risk of bias and inclusion of participants aged over 18. We repeated the main analyses with only studies rated as being at low risk of bias for all items except participant/personnel blinding (as this is not usually possible within trials of psychological interventions). In addition, as some studies included young people aged 18–25, we conducted analysis of the main intervention effect without these studies included. Finally, we conducted the main analyses using only child-report measures, only parent-report measures and only observer-report measures to determine whether the source of outcome affected the intervention effect.

Treatment acceptability was only analysed qualitatively, as the data were not suitable for meta-analysis.

**Assessment of heterogeneity**

Statistical heterogeneity was assessed using the $I^2$ and Cochran’s $Q$ statistics (Higgins, Thompson, Deeks, & Altman, 2003). Cochran’s $Q$ refers to the summed squared deviations of each study’s effect size estimate from the overall meta-analytic effect size estimate. This is compared to a $X^2$ distribution with $k-1$ degrees of freedom (where $k$ is the number of studies) to derive a $p$-value. A significant $p$-value indicates that the effect sizes of different studies may have arisen from different populations. It is commonly used in meta-analysis; however, it has low power for detecting true heterogeneity when there are small numbers of studies. $I^2$ refers to the percentage of total variation that is due to heterogeneity rather than chance. $I^2 = 100\% \times (Q - df)/Q$, where $Q$ is Cochran’s heterogeneity statistic and $df$ is the degrees of freedom. A value of 0% indicates no observed heterogeneity and larger values show increasing heterogeneity.

**Assessment of small study effects**

A funnel plot was visually inspected to investigate small-study effects. We also conducted Egger’s test to examine the asymmetry of the funnel plot (Egger, Smith, Schneider, & Minder, 1997). Duval and Tweedie (2000) trim-and-fill analysis was used to obtain an unbiased estimate of the pooled effect size. This is a nonparametric data augmentation technique which is used to estimate the number of studies missing from a meta-analysis due to suppression of the most extreme results of the funnel plot. It then imputes from observed data to increase the symmetry of the plot. This method has been criticised as being at high risk of generating false-positives and therefore the results need to be interpreted with some caution (Sterne & Egger, 2011).

**Results**

Fifty studies met inclusion criteria for the meta-analysis of self-help for anxiety, depression and/or disruptive behaviour disorders in children and young people (see Figure 1 for PRISMA flowchart of study selection), with a total of 3396 children in self-help conditions, 1100 in face-to-face therapy groups and 2366 in control groups. Nineteen studies investigated treatment for disruptive behaviour, 15 investigated treatment for anxiety and 13 investigated treatment for depression. Three investigated treatments for multiple diagnoses (two for depression and anxiety combined, and McGrath et al., 2011a, included groups of children with anxiety and disruptive behaviour, which were analysed separately). Six compared against another therapy only, 35 compared against control groups and nine compared against both. Face-to-face therapies typically included evidence-based individual Cognitive Behavioural Therapy (CBT) programmes for anxiety and depression and individual or group parenting programmes for behavioural difficulties. Full study and intervention characteristics are outlined in Table 1.

**Risk of bias**

All studies were considered to be at high risk of bias for blinding of participants and personnel, as all were studies of psychological interventions. Of the remaining five criteria considered in the review, 12 studies had low risk of bias across all five, 10 had low risk for four, 12 had low risk for three, 10 had low risk for two, six had low risk for one and none had high risk across all criteria. Thirty-four adequately described random sequence generation, 24 described adequate allocation concealment, 47 described binding of outcome assessment, 32 had adequate data completion across arms and 24 were registered on a trials database and reported the same outcomes in the final paper. Ten percent of studies were rated by a second rater and there was complete agreement for all domains except...
incomplete outcome data, which was $k = 0.6$. This item is somewhat subjective as there is no clear definition of low attrition. Table 1 provides data on risk of bias for each of the studies.

**Treatment Acceptability**

Both young people and parents appeared to find self-help and guided self-help interventions acceptable, as indexed by self-reported satisfaction (Appendix S2). Some studies demonstrated lower acceptability for self-help arms in comparison to face-to-face treatment. For studies that compared both guided and unguided interventions, many found that the guided treatment was more acceptable to young people and parents. None found a preference for the unguided treatment.

**Meta-analysis**

Separate analyses are presented for studies comparing against a control group (Table 2) and those comparing against another therapy (Table 3), as well as for anxiety, depression and behaviour interventions within these (Appendix S3). A final set of analyses considered only those studies considered to be at low risk of bias (Appendix S4).

**Self-help versus control.** See Figure 2 for a forest plot of effect sizes for studies with a control condition (Table 2). The effect of self-help and guided self-help combined on symptoms of common mental health disorders when compared to a control group (including waiting list, attention and nonactive treatment as usual) was $g = 0.49$ ($n = 44$; 95% CI: 0.37 to 0.61,

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*Figure 1 PRISMA flow diagram of study selection [Colour figure can be viewed at wileyonlinelibrary.com]*
<table>
<thead>
<tr>
<th>Paper</th>
<th>Roll</th>
<th>Primary symptom (Anxiety, Behaviour, Depression)</th>
<th>Country</th>
<th>Inc.</th>
<th>Mean age (years)</th>
<th>% Male</th>
<th>N self-help</th>
<th>N control</th>
<th>Inclusion Criteria</th>
<th>Da confirmed by formal dx interview?</th>
<th>Outcomes</th>
<th>Type of Control</th>
<th>Self help Intervention</th>
<th>Format</th>
<th>Guidance method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baker 2017</td>
<td>- - -</td>
<td>Anxiety, Behaviour, Depression</td>
<td>Australia</td>
<td>N 4.4</td>
<td>55</td>
<td>100</td>
<td>100</td>
<td></td>
<td>1 or more of disobedience, fighting and aggression, going shopping, self-esteem identified as an area of concern, SDQ &gt; 13</td>
<td>N</td>
<td>ECIH (P, SR); CAPPS (P, SR); PCPTOS (Y, O; P, O)</td>
<td>WLC</td>
<td>Triple P Online Brief</td>
<td>Online Email and telephone if no response</td>
<td></td>
</tr>
<tr>
<td>Bechert et al. 2010</td>
<td>- - -</td>
<td>-</td>
<td>USA</td>
<td>N 4.29</td>
<td>70</td>
<td>17</td>
<td>13</td>
<td></td>
<td>ECIH intensity &gt; 132</td>
<td>N</td>
<td>ECBI (P, SR)</td>
<td>F2F</td>
<td>PCIT-Anticipatory Guidance</td>
<td>Paper Telephone</td>
<td></td>
</tr>
<tr>
<td>Chavira 2014</td>
<td>? - -</td>
<td>-</td>
<td>USA</td>
<td>N 9.63</td>
<td>43.7</td>
<td>24</td>
<td>24</td>
<td></td>
<td>SocA, SepA, OCD, SpiP or GAD on ADIS-C/P CSR &gt; 3</td>
<td>Y</td>
<td>A: ADIS-C/P (Y, O, P, O)</td>
<td>F2F</td>
<td>Do as I Do and Facing your Fears bibliotherapy</td>
<td>Paper Telephone</td>
<td></td>
</tr>
<tr>
<td>Cobham 2012</td>
<td>- - -</td>
<td>-</td>
<td>Australia</td>
<td>N 9.91</td>
<td>63.6</td>
<td>20</td>
<td>23</td>
<td>(F2F) 12 (WLC)</td>
<td>Prim Anx Dx (GAD, SepA, SpiP, Ag, PD, PTEB on ADIS IV-C/P CSR &gt; 3</td>
<td>Y</td>
<td>ADIS-C IV-C/P (Y, O, P, O); CDAS (Y, O); SCAS (Y, SR); CBCL-111 (P, SR)</td>
<td>F2F</td>
<td>BRAVE-ONLINE Online</td>
<td>Email and telephone</td>
<td></td>
</tr>
<tr>
<td>Connaughten 2017</td>
<td>- - -</td>
<td>-</td>
<td>Australia</td>
<td>N 9.74</td>
<td>85.7</td>
<td>21</td>
<td>21</td>
<td></td>
<td>Diagnosis Asperger's/High Functioning ASD, Childhood Asperger Syndrome Test or Prim Anx Dx (SepA, SpiP, RAD, GAD) ADIS-C/P CSR &gt; 3</td>
<td>Y</td>
<td>ADIS-C/P (Y, O, P, O); CDAS (Y, O); SCAS (Y, SR); SCAS-P (P, SR); CBCL-111 (P, SR)</td>
<td>WLC</td>
<td>BRAVE-ONLINE Online</td>
<td>Email and telephone</td>
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<tr>
<td>Crowell 2017</td>
<td>- - -</td>
<td>-</td>
<td>UK</td>
<td>N 9.21</td>
<td>47</td>
<td>68</td>
<td>68</td>
<td></td>
<td>Anxiety associated with clinical impairment</td>
<td>N</td>
<td>CGI-I (Y, O, P)</td>
<td>F2F</td>
<td>Brief guided parent-delivered CBT</td>
<td>Paper Face-to-face and telephone</td>
<td></td>
</tr>
<tr>
<td>Donovan 2014</td>
<td>- - -</td>
<td>-</td>
<td>Australia</td>
<td>N 4.08</td>
<td>46.15</td>
<td>23</td>
<td>29</td>
<td></td>
<td>Prim Anx Dx (SepP, Y SepA, SpiP, GAD) ADIS-C</td>
<td>A: ADIS-B (P, O); CDAS (Y, O)</td>
<td>WLC</td>
<td>BRAVE-ONLINE plus booklet with age-appropriate examples</td>
<td>Online Email with telephone call to develop hierarchy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eneblik 2012</td>
<td>- - -</td>
<td>-</td>
<td>Sweden</td>
<td>N 6.83</td>
<td>57.69</td>
<td>58</td>
<td>46</td>
<td></td>
<td>ECIH-1SD above mean for age group and gender/criteria for clinically relevant problems</td>
<td>N</td>
<td>A: ECIH (P, SR)</td>
<td>WLC</td>
<td>Online version of Swedish program 'komset'</td>
<td>Online Mobile Email</td>
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<tr>
<td>Fleming 2012</td>
<td>- - -</td>
<td>-</td>
<td>New Zealand</td>
<td>N 14.9</td>
<td>56</td>
<td>20</td>
<td>12</td>
<td></td>
<td>CDRS-29</td>
<td>N</td>
<td>D: CDRS-R (Y, O);</td>
<td>WLC</td>
<td>SPARK. For adolescents excluded from mainstream education</td>
<td>Computer Face-to-face / telephone</td>
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</table>

(continued)
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<tr>
<th>Paper</th>
<th>Role</th>
<th>Primary symptom (Anxiety, Behaviour, Depression)</th>
<th>Country</th>
<th>Inc.</th>
<th>Mean age (years)</th>
<th>% Male</th>
<th>N self-help</th>
<th>N (control)</th>
<th>Inclusion Criteria</th>
<th>Dx confirmed by formal dx interview?</th>
<th>Outcomes</th>
<th>Type of Control</th>
<th>Self help Intervention</th>
<th>Format</th>
<th>Guidance method</th>
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</thead>
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<td>Hinton 2017</td>
<td>-?--x</td>
<td>Australia</td>
<td>N 6.01</td>
<td>76</td>
<td>51</td>
<td>47</td>
<td>Parent reported behaviour problems and presence of Developmental Disability</td>
<td>N</td>
<td>DBC-P (P, SR); CAPES-DD (P, SR)</td>
<td>TAU (not active)</td>
<td>Triple P Online – Disability (TPOL-D)</td>
<td>Online</td>
<td>Telephone / email</td>
<td></td>
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<tr>
<td>Hoek 2012</td>
<td>-?----</td>
<td>Netherlands</td>
<td>Y 16.07</td>
<td>24.4</td>
<td>22</td>
<td>23</td>
<td>Mild/moderate delay/alex on CES-D 20-42</td>
<td>N</td>
<td>CES-D (Y, SR); HADS (Y, SR)</td>
<td>WLC</td>
<td>Problem Solving Therapy</td>
<td>Online</td>
<td>Email</td>
<td></td>
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<tr>
<td>Ip 2016</td>
<td>-??--</td>
<td>Hong Kong</td>
<td>N 14.63</td>
<td>82</td>
<td>130</td>
<td>127</td>
<td>CES-D R 12-40</td>
<td>N</td>
<td>CES-D (Y, SR)</td>
<td>ATTN</td>
<td>Group the Opportunity (culturally modified version of CATCH-F)</td>
<td>Online</td>
<td>N/A</td>
<td></td>
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<tr>
<td>Irvine 2015</td>
<td>?--??</td>
<td>USA</td>
<td>N 13.01</td>
<td>52.9</td>
<td>155</td>
<td>152</td>
<td>&gt;4 problematic behaviours (e.g. poor grades, trouble at school, drug use, associating with troublesome peers)</td>
<td>N</td>
<td>B. ECB (P, SR)</td>
<td>WLC</td>
<td>Parenting Toolkit</td>
<td>Online</td>
<td>N/A</td>
<td></td>
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<td>Keller 2009</td>
<td>-??--</td>
<td>USA</td>
<td>N 8.41</td>
<td>51.35</td>
<td>22</td>
<td>15</td>
<td>GAD &gt; 8, BpA &gt; 4 (IFIP &gt; 7 on SCARED-P)</td>
<td>Y</td>
<td>CBCL-in (P, SR); SCARED-P (P, SR); SCARED (Y, SR); CAIR (P, SR); DBC-P (P, SR); CBCL (Y, SR); Child hierarchy ratings (Y, P, SR)</td>
<td>WLC</td>
<td>Helpphanesvaisakis.com - Based on Rapee Helping your anxious child: A step-by-step guide for parents</td>
<td>Online</td>
<td>Telephone</td>
<td></td>
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<tr>
<td>Krerfeld 2013</td>
<td>-??--</td>
<td>Germany</td>
<td>N 5.2</td>
<td>50</td>
<td>26</td>
<td>22</td>
<td>CBCL in 75th to 99th percentile</td>
<td>N</td>
<td>CBCL (P, SR); FBB-SSV – ODD subscale (P, SR)</td>
<td>WLC</td>
<td>30-minute self-help book in 11 chapters</td>
<td>Paper</td>
<td>Face-to-face workshop then none</td>
<td></td>
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<tr>
<td>King 2010</td>
<td>?--??</td>
<td>Sweden</td>
<td>N 6</td>
<td>60</td>
<td>61</td>
<td>58 (F2F) 40 (WLC)</td>
<td>N</td>
<td>CBCL in 75th to 99th percentile</td>
<td>N</td>
<td>CBCL (P, SR); PDR (P, SR); ECB (P, SR)</td>
<td>F2F</td>
<td>COMET (Communication Method) – includes components of Barkley, Webster, Stratton, Bloomquist &amp; Schnell</td>
<td>Paper</td>
<td>N/A</td>
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<tr>
<td>Lavigne 2008</td>
<td>-??--</td>
<td>USA</td>
<td>N 4.6</td>
<td>53</td>
<td>31</td>
<td>FC (nurse-led) 49 FC (psychologist-led) 37</td>
<td>Y</td>
<td>CBCL &gt; 90th percentile, ODD on DSM-IV from RASEL; observation of parent-child interaction</td>
<td>N</td>
<td>ECB (P, SR); CBCL externalising (P, SR)</td>
<td>F2F</td>
<td>Incredible Years</td>
<td>Paper</td>
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<td>Lillevoll 2014</td>
<td>-??--</td>
<td>Norway</td>
<td>Y 16.8</td>
<td>43.2</td>
<td>527 (total) 176 (no reminders) 176 (standard email) 175 (tailored email)</td>
<td>180</td>
<td>None (completed baseline survey but analysed those with reported need of help)</td>
<td>N</td>
<td>CES-D (Y, SR)</td>
<td>WLC</td>
<td>MoodGYM</td>
<td>Online</td>
<td>N/A</td>
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<td>Paper</td>
<td>Roll</td>
<td>Primary symptom (Anxiety, Behaviour, Depression)</td>
<td>Country</td>
<td>Inc.</td>
<td>Mean age (years)</td>
<td>Male</td>
<td>% Male</td>
<td>N self-help</td>
<td>N (control)</td>
<td>Inclusion Criteria</td>
<td>Dx confirmed by formal dx interview?</td>
<td>Outcomes</td>
<td>Type of Control</td>
<td>Self help Intervention</td>
<td>Format</td>
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<td>Makorushka 2011</td>
<td>???+</td>
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<td>USA</td>
<td>N</td>
<td>12.7</td>
<td>44</td>
<td></td>
<td>75</td>
<td>85</td>
<td></td>
<td>N</td>
<td>CES-D (Y, SR)</td>
<td>WLC/ATTN</td>
<td>Blues Blister</td>
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<td>March 2009</td>
<td>++++</td>
<td>Clinical or at-risk range on CBCL or SCAS-C/P and ADIS-C/P ≥ 4</td>
<td>Australia</td>
<td>N</td>
<td>9.45</td>
<td>45</td>
<td></td>
<td>44</td>
<td>33</td>
<td></td>
<td>Y</td>
<td>ADIS-C/P (Y, P, O); COAS (P, Y, O); SCAS-C/P (P, Sr); CBCL-R internalising (P, Sr)</td>
<td>WLC</td>
<td></td>
<td>BRAVE for children - ONLINE</td>
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<tr>
<td>McGrath 2011</td>
<td>++++</td>
<td>K-SADS-PL mild/ moderate primary dx with impairment in two or more domains</td>
<td>USA</td>
<td>N</td>
<td>12.7</td>
<td>44</td>
<td></td>
<td>33</td>
<td>4</td>
<td></td>
<td>Y</td>
<td>K-SADS-PL (P, Y, O)</td>
<td>TAU</td>
<td>A. Strongest families (parenting the active child) B. Strongest families if one scores a way</td>
<td>Paper</td>
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<tr>
<td>Merry 2012</td>
<td>++++</td>
<td></td>
<td>NZ</td>
<td>Y</td>
<td>15.56</td>
<td>34.22</td>
<td></td>
<td>94</td>
<td>93</td>
<td></td>
<td>N</td>
<td>PHQ-9 10-19, or clinically significant depression</td>
<td>N</td>
<td>CDRS-R (Y, O)</td>
<td>SPARK</td>
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<tr>
<td>Morawska 2006</td>
<td>???+</td>
<td>Parent reported concerns about child behaviour</td>
<td>Australia</td>
<td>N</td>
<td>2.18</td>
<td>50.8</td>
<td></td>
<td>41</td>
<td>43</td>
<td>42 (self-delivered)</td>
<td>N</td>
<td>B: ECH (P, SR); POS (P, C, O)</td>
<td>WLC</td>
<td>每家自编的自编工作书和每家的父母亲的自编自编</td>
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<td>Morawska 2014</td>
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<td>Parent reported concerns about child behaviour</td>
<td>Australia</td>
<td>N</td>
<td>6.06</td>
<td>61.9</td>
<td></td>
<td>73</td>
<td>66</td>
<td></td>
<td>N</td>
<td>ECBI (P, SR); CAPES (P, SR)</td>
<td>WLC</td>
<td>Triple P-Positive Parenting Program Podcast</td>
<td>Podcast</td>
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<tr>
<td>Peeplesaas 2016</td>
<td>???+</td>
<td>RADS-2 &lt; 58</td>
<td>Netherlands</td>
<td>N</td>
<td>13.3</td>
<td>0</td>
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<td>51</td>
<td>51</td>
<td>(Active Monitoring)</td>
<td>N</td>
<td>RADS-2 (Y, SR)</td>
<td>Attention F2F</td>
<td>SPARK</td>
<td>Computer</td>
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<td>Rabbit 2016</td>
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<td>Referral for oppositional, aggressive, or antisocial behaviour</td>
<td>USA</td>
<td>N</td>
<td>8.48</td>
<td>58</td>
<td></td>
<td>46</td>
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<td></td>
<td>N</td>
<td>CBCL (P, SR); IAB (P, SR); COAS (P, CO); RDI (P, C, O)</td>
<td>F2F (internet)</td>
<td>Reduced Constrict Parent Management Training</td>
<td>Online</td>
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<td>Rapee 2006</td>
<td>???+</td>
<td>Anxiety Dis on DSM-IV-TR</td>
<td>Australia</td>
<td>N</td>
<td>9.51</td>
<td>58.45</td>
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<td>90</td>
<td>87</td>
<td>(WLC) 90 (F2F)</td>
<td>Y</td>
<td>ADIS-CP (P, Y, O); SCAS (P, Y, SR)</td>
<td>WLC</td>
<td>F2F Parenting Matters</td>
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<td>Reid 2013</td>
<td>???+</td>
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<td>Canada</td>
<td>N</td>
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<td>Richati 2015</td>
<td>???+</td>
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<td>N</td>
<td>15.3</td>
<td>22.2</td>
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<td>16</td>
<td>13</td>
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<td>Y</td>
<td>D: CBRS-R (Y, O)</td>
<td>WLC</td>
<td>LEAP: Spiritually informed e mental health tool</td>
<td>Online</td>
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<td>???+</td>
<td>2+ symptoms on adapted CES-D</td>
<td>Canada</td>
<td>Y</td>
<td>15.5</td>
<td>32</td>
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<td>128</td>
<td>126 (F2F)</td>
<td>124 (ATTN)</td>
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<td>D: adapted-K-SADS (Y, O)</td>
<td>F2F (ATTN)</td>
<td>feeling Good</td>
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<tr>
<td>Paper</td>
<td>Role</td>
<td>Country</td>
<td>Inc.</td>
<td>Mean age</td>
<td>% Male</td>
<td>N self-help</td>
<td>N (control)</td>
<td>Inclusion Criteria</td>
<td>Outcomes</td>
<td>Type of Control</td>
<td>Self help Intervention</td>
<td>Format</td>
<td>Guidance method</td>
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<td>Sanders 2000</td>
<td>B</td>
<td>Australia</td>
<td>N</td>
<td>3.33</td>
<td>68</td>
<td>75</td>
<td>77 (SBFI)</td>
<td>ECBI intensity &gt; 127 or ECBI problem &gt;11 and 1 family adversity factor</td>
<td>F3F (SBFI + STANDARD)</td>
<td>Level 4</td>
<td>Self-help Triple P</td>
<td>Paper</td>
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<td>Sanders 2012</td>
<td>B</td>
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<td>N</td>
<td>4.7</td>
<td>67</td>
<td>60</td>
<td>56</td>
<td>Elicited levels of child behaviour problems on ECBI</td>
<td>ECBI (P, SR); SDQ conduct</td>
<td>WLC</td>
<td>Triple P</td>
<td>Online</td>
<td>Tel</td>
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<tr>
<td>Smith 2015</td>
<td>D</td>
<td>UK</td>
<td>N</td>
<td>14 (Median)</td>
<td>Not reported</td>
<td>55</td>
<td>232</td>
<td>MPQ-C ≥ 20 SDQ-1 conduct problems ≥ 5 Parent reported behaviour difficulties</td>
<td>D: MPQ-C (Y, SR)</td>
<td>WLC</td>
<td>Stressbusters</td>
<td>Online</td>
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<td>Stoolman 2007</td>
<td>B</td>
<td>Australia</td>
<td>N</td>
<td>12.41</td>
<td>60.8</td>
<td>17</td>
<td>16</td>
<td>Parental concern regarding behaviour</td>
<td>B: SDQ (P, SR)</td>
<td>WLC</td>
<td>Self-directed</td>
<td>Paper</td>
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<td>Stallard 2011</td>
<td>A&amp;D</td>
<td>UK</td>
<td>N</td>
<td>12 (Median)</td>
<td>66.7</td>
<td>10</td>
<td>10</td>
<td>Prim Ans Dis or mild/moderate depression</td>
<td>N</td>
<td>A/D: SDQ (Y, SR);</td>
<td>Self-directed Teen P</td>
<td>Paper</td>
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<td>Tillfors 2011</td>
<td>A</td>
<td>Sweden</td>
<td>Y</td>
<td>16.5</td>
<td>11</td>
<td>10</td>
<td>9</td>
<td>ADIS-C/P (Y, O); CGI-I</td>
<td>A: ADIS-C/P (Y, P, O)</td>
<td>WLC</td>
<td>Telephone and email</td>
<td>Online</td>
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(continued)
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<tr>
<th>Paper</th>
<th>Role</th>
<th>Primary symptom (Anxiety, Behaviour, Depression)</th>
<th>Country</th>
<th>Inc. &gt;18</th>
<th>Mean age (years)</th>
<th>%</th>
<th>Male</th>
<th>N</th>
<th>N self-help</th>
<th>N (control)</th>
<th>Inclusion Criteria</th>
<th>Dx confirmed by formal dx interview?</th>
<th>Outcomes</th>
<th>Type of Control</th>
<th>Self help Intervention</th>
<th>Format</th>
<th>Guidance method</th>
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<td>?? ++</td>
<td>A Sweden N 10.1 45 46 47</td>
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<td>ADIS Clinical Severity Rating (Y, O)</td>
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<td>Wannachayakul, 2017</td>
<td>-- ++</td>
<td>D Thailand Y 17.74 93 42 42</td>
<td>N</td>
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<td>?? ++</td>
<td>B Australia N 4.5 69 29 14</td>
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<td></td>
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<td>------</td>
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<td>N</td>
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<td>N</td>
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</table>

RoB - Risk of Bias; + = high risk of bias, ? = unclear risk of bias, - = low risk of bias, for each of the categories considered: random sequence generation, allocation concealment, blinding of participants and personnel, binding of outcome assessment, incomplete outcome data and selective reporting.

Primary Symptom; A = Anxiety, B = Behaviour, D = Depression.

Inc. >18 - Study included young people over 18 years of age; Y = Yes, N = No.

Dx confirmed by formal dx interview? - Study participants were diagnosed with a mental health disorder using a validated diagnostic instrument/interview; Y = Yes, N = No.

Inclusion criteria used in the meta-analysis: ADIS-C/P = Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent versions; ADIS-IV-C/P = Anxiety Disorders Interview Schedule Child/Parent version IV; CBCL = Child Behaviour Checklist; CBCL-Int = Child Behaviour Checklist - Internalising (child and parent versions); CDRS-R = Children's Depression Rating Scale - Revised; CES-D = Centre for Epidemiologic Studies Depression Scale; CESD-R = Centre for Epidemiologic Studies Depression Scale Revised; DSM-IV = Diagnostic and Statistical Manual of Mental Disorders Fourth Edition; DSM-IV-TR = Diagnostic and Statistical Manual of Mental Disorders Fourth Edition Text Revision; ECBI = Eyberg Child Behaviour Inventory; ECI-B = Eyberg Child Behaviour Inventory; MFQ = Mood and Feelings Questionnaire; MFQ-C = Mood and Feelings Questionnaire Child Version; PHQ-9 = Patient Health Questionnaire; RABI = Rochester Adaptive Behaviour Inventory; RADS-2 = Reynolds Adolescent Depression Scale; SCARED-P = Screen for Child Anxiety Related Disorders Parent Version; SCAS-C = Spence Children's Anxiety Scale - Child Report; SCAS-P = Spence Children's Anxiety Scale - Parent report; SCID = Structured Clinical Interview for DSM-IV; SDQ = Strengths and Difficulties Questionnaire; SPSQ-C = Social Phobia Screening Questionnaire for Children; other terms used in the inclusion criteria section: Anx = anxiety; Ag = agoraphobia; CSR = clinical severity rating; Diagnosing subscale; Dep = depression; Dx = diagnosis; excl = excluding; GAD = generalised anxiety disorder; mood dis = mood disorder; OCD = obsessive compulsive disorder; PD = panic disorder; Prim = primary; PTSD = post traumatic stress disorder; SAD = Social Anxiety Disorder; SeP = separation anxiety; SoP = Social Phobia; SpP = specific phobia.

Outcomes used in the meta-analysis: ACS = Adolescent Coping Scale; ADAS = Abbreviated Dyadic Adjustment Scale; ADIS-C/P = Anxiety Disorders Interview Schedule for DSM-IV: Child and Parent versions; ADIS-IV-C/P = anxiety disorders interview schedule child/parent version IV; ALIS = Adolescent Life Interference Scale; ATQ = Automatic Thoughts Questionnaire; AWS = Adolescent Well-being Scale; BADS = Behavioural Activation for Depression Scale; BAI = Beck Anxiety Inventory; BDI = Beck Depression Inventory; BTPS = Barriers to treatment Participation Scale; CAIS-P = Child Anxiety Impact Scale – Parent report; CAPES = Child Adjustment and Parent Efficacy Scale; CAPES-ED = Child Adjustment and Parent Efficacy Scale –
developmental disability; CATS = Children’s Automatic Thoughts Scale; CBCL = Child Behaviour Checklist; CBCL-Int = Child Behaviour Checklist – Internalising subscale; CBCL-R = Child Behaviour Checklist – Revised; CBQ-A = Conflict Behaviour Questionnaire – Adolescent Version; CDI = Children's Depression Inventory; CDRS-R = Children's Depression Rating Scale – Revised; CEBQ = Computer Experience Questionnaire; CES-D = Centre for Epidemiologic Studies Depression Scale; CESD-R = Centre for Epidemiologic Studies Depression Scale Revised; CGAS = Children's Global Assessment Scale; CGI-I = Clinical Global Impression Improvement Scale; CNSIE = Children’s Nowicki-Strickland Internal-External Control Scale short; CSQ = Client Satisfaction Questionnaire; DASS = Depression-Anxiety-Stress Scale; DBC-P = Developmental behaviour checklist; DISC = Diagnostic Interview Schedule for Children; DISC IV-P = Diagnostic Interview Schedule for Children Parent Version; DPICS = Dyadic Parent-Child Interaction Coding System; ECBI = Eyberg Child Behaviour Inventory; ECBI-I = Eyberg Child Behaviour Inventory Intensity Scale; FBB-ADHD = The Rating Scale for ADHD; FBB-SSV = The Rating Scale for ODD and CD; FBQ = Family Background Questionnaire; FOS = Family Observation Schedule; FOS-RIII = Revised Family Observation Schedule; FSSC-R = Fear Survey Schedule for Children – Revised; GSE = General Self-Efficacy Scale; HADS = Hospital Anxiety and Depression Scale; HADS-A = Hospital Anxiety and Depression Scale Anxiety Subscale; HPLS = Kazdin Hopelessness Scale; HSQ = Home Situation Questionnaire; IAB = Interview for Antisocial Behaviour; K-LOC = Kazdin Hopelessness Scale for Children; K-SADS = Schedule for Affective Disorders and Schizophrenia for School Aged Children; K-SADS-PL = Schedule for Affective Disorders and Schizophrenia for School Aged Children – Present and lifetime version; LSAS-SR = Liebowitz Social Anxiety Scale; MADRS-S = self-rated version of the Montgomery – Asberg Depression Rating Scale; MASC = Multidimensional Anxiety Scale for Children; MFQ = Mood and Feelings Questionnaire; MFQ-C = Mood and Feelings Questionnaire Child Version; NIMH = National Institute of Mental Health; NSWS-P = Penn State Worry Questionnaire for children; PTI = Parenting Task Inventory; QP = Parenting Quality; RADS-2 = Reynolds Adolescent Depression Scale; RCI = Revised Children’s Manifest Anxiety Scale; PSI = Parenting Stress Index; PSOC = Parenting Sense of Competency Scale; PSWQ-C/P = Penn State Worry Questionnaire for children; PTC = Parenting Task Checklist; QJPS = Questionnaire on Judging Parental Strains; QOLI = Quality of Life Inventory; RABI = Rochester Adaptive Behaviour Inventory; RAS = Reynolds Adolescent Depression Scale; RCMAS = Revised Children’s Manifest Anxiety Scale; RDI = Research Diagnostic Interview; RQI = Relationship Quality Index; RSRS = Rosenberg Self Esteem Scale; SAI-C = Separation Anxiety Inventory for Children; SAS = Spence Anxiety Scale; SAS-SRY = Social Adjustment Scale Self Report for Youth; SCAS = Spence Children's Anxiety Scale; SCAS-C = Spence Children's Anxiety Scale – Child Report; SCAS-P = Spence Children’s Anxiety Scale – Parent report; SCARED = Screen for Child Anxiety Related Disorders; SCID = Structured Clinical Interview for DSM-IV; SQS = Schema Questionnaire for Children; SDQ = Strengths and Difficulties Questionnaire; SDQEmot = Strengths and Difficulties Questionnaire Emotional Subscale; SESBI = Sutter-Eyberg Student Behaviour Inventory; SMFQ-C/P = Short Mood and Feelings Questionnaire; SPAI-C/P = Social phobia and Anxiety Inventory; SPSQ-C = Social Phobia Screening Questionnaire for Children; SWBS = Spiritual and Well-Being Scale; TAAF = Therapeutic Alliance, Adherence and Flexibility; TCQ = Toddler Care Questionnaire; YSR = Youth Self Report. Other terms used in the outcome section: P = Parent; SR = Self-report; Y = Youth; O = Observer; A = Anxiety; B = Behaviour.

Type of Control: ATT = Attention Control; EBFI = enhanced Behavioural Family Intervention; F2F = Face to Face intervention; SBFI = standard BFI; SDBFI = self-directed BFI; TAU = Treatment as Usual; WLC = Waiting List Control.
p < .01), corresponding to the number needed to be treated to achieve one additional positive outcome (NNT) of 3.68, although heterogeneity was very high ($I^2 = 70$, $Q = 144$, $p < .01$). The effect size was smaller but remained significant at short-term ($n = 14$; $g = 0.25$, 95% CI: 0.17 to 0.34; $I^2 < .01$; $Q = 9$, $p = .74$) and long-term follow-up ($n = 7$; $g = 0.23$, 95% CI: 0.11 to 0.35; $I^2 = 17$, $Q = 7$, $p = .30$). A meta-regression analysis demonstrated no significant effect of total risk of bias on effect size ($z = -0.88$, $p = .38$).

Additional analyses were undertaken using only the 11 studies with low risk of bias across all domains with the exception of participant/personnel blinding. Considering only those with low risk of bias, the overall effect was reduced but remained significant ($g = 0.33$, 95% CI: 0.15 to 0.52, $p < .01$), corresponding to an NNT of 5.43. Again, heterogeneity for this comparison was high ($I^2 = 59$, $Q = 25$, $p < .01$).

**Small study effects.** A funnel plot (Figure 4A) suggested that the effect size for studies with control comparators was influenced by small studies, which was confirmed with Egger’s test ($t = 4.99$; $p < .01$). Following adjustment for missing studies using the Duval and Tweedie (2000) trim-and-fill procedure (13 imputed studies), Hedges’ $g$ for the overall outcome analysis was 0.29 (95% CI: 0.15 to 0.43), corresponding to an NNT of 6.17.

**Subgroup and moderator analyses.** All subgroups showed self-help to be more effective than the control conditions. The only significant subgroup difference was in level of support; there was a statistically significant difference ($p < .01$) between the effect sizes of guided therapies ($n = 27$; $g = 0.65$, 95% CI: 0.46 to 0.84; $I^2 = 75.64$) and those without guidance ($n = 14$; $g = 0.27$, 95% CI: 0.14 to 0.40; $I^2 = 41.16$), although heterogeneity was high in both groups. The difference was smaller and no longer statistically significant when only studies with low risk of bias were considered (supported studies $n = 7$; $g = 0.35$, 95% CI: 0.11 to 0.59; $I^2 = 56$; nonsupported studies $n = 4$; $g = 0.31$, 95% CI: −0.02 to 0.65; $I^2 = 73$). There were no other subgroup differences when only studies with low risk of bias were considered (Appendix S4). A meta-regression analysis demonstrated no significant effect of age on effect size ($z = 0.49$, $p = .62$).

**Anxiety self-help versus control studies.** There was a medium-large overall effect size for anxiety studies ($n = 13$; $g = 0.64$, 95% CI: 0.38 to 0.90),
although there was significant heterogeneity ($I^2 = 71$; $Q = 41$, $p < .01$; Appendix S3). The only moderator that could be investigated was type of self-help, as all but one study included established diagnosis and all but one included guidance; this comparison was not statistically significant ($p = .16$).

**Disruptive behaviour self-help versus control studies.** Disruptive behaviour interventions demonstrated an overall medium effect size ($n = 17$; $g = 0.44$; 95% CI: 0.28 to 0.60), although heterogeneity was again high ($I^2 = 63$; $Q = 43$, $p < .01$; Appendix S3). The effect was not significant when only studies with low risk of bias were considered ($n = 3$; $g = 0.20$, 95% CI: −0.10 to 0.51; $I^2 = 58$; $Q = 4.81$, $p = .09$). The only significant comparison was between supported interventions ($n = 9$; $g = 0.62$, 95% CI: 0.34 to 0.90; $I^2 = 69$), studies with supported and unsupported arms ($n = 3$; $g = 0.49$, 95% CI: 0.27 to 0.70, $I^2 < 0.01$) and nonsupported studies ($n = 5$; $g = 0.15$, 95% CI: 0.01 to 0.29, $I^2 < 0.01$), with supported interventions demonstrating larger effect sizes.

**Depression self-help versus control studies.** An overall medium effect size was found for depression studies ($n = 12$; $g = 0.47$, 95% CI: 0.24 to 0.72, $p < .01$), although heterogeneity was high ($I^2 = 79$; $Q = 53$, $p < .01$; Appendix S3). Studies with guidance ($n = 4$; $g = 0.78$, 95% CI: −0.03 to 1.58, $I^2 = 92$) had a greater effect size than unguided studies ($n = 8$; $g = 0.34$, 95% CI: 0.14 to 0.55, $I^2 = 54$) but there was high heterogeneity and the difference was not statistically significant ($p = .30$).

**Self-help versus face-to-face therapy**

Overall, the effect of self-help (both guided and unguided) on symptoms of common mental health disorders for the 15 studies that compared it to face-to-face therapy was $g = −0.17$ (95% CI: −0.27 to −0.07; $p < .01$) in favour of the face-to-face therapies ($Q = 41$, $p < .01$). A regression analysis demonstrated a significant effect of total risk of bias on effect size ($z = 2.26$, $p = .02$), with lower risk associated with a more positive effect size (i.e. closer to the effect of standard face-to-face treatment).

See Figure 3 for a forest plot of effect sizes for studies comparing against an alternative therapy and Table 3 for effect size data. There was no significant difference in comparison with alternative therapies at either short-term (<12 months) or long-term (≥12 months) follow-up.

**Small study effects.** A funnel plot did not demonstrate small study effects in the studies comparing self-help against other therapies (Figure 4B) and

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**Table 3** Meta-analysis results for all studies comparing self-help against face-to-face therapy

<table>
<thead>
<tr>
<th>Ncomp</th>
<th>$g$</th>
<th>95% CI</th>
<th>$Z$</th>
<th>$I^2$</th>
<th>$p$</th>
<th>NNT</th>
<th>$Q (p)$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall effect (post)</td>
<td>15</td>
<td>−0.17</td>
<td>−0.27 to −0.07</td>
<td>−3.27</td>
<td>20.64</td>
<td>.01***</td>
<td>10.42</td>
</tr>
<tr>
<td>Effect without studies inc. &gt;18 years</td>
<td>12</td>
<td>−0.21</td>
<td>−0.33 to −0.08</td>
<td>−3.31</td>
<td>12.13</td>
<td>.01***</td>
<td>8.47</td>
</tr>
<tr>
<td>Only studies with low risk of bias</td>
<td>2</td>
<td>0.07</td>
<td>0.16 to 0.31</td>
<td>0.62</td>
<td>&lt;.001</td>
<td>.54</td>
<td>25.00</td>
</tr>
<tr>
<td>Child report only</td>
<td>4</td>
<td>0.03</td>
<td>−0.26 to 0.31</td>
<td>0.18</td>
<td>61.45</td>
<td>.86</td>
<td>62.50</td>
</tr>
<tr>
<td>Observer report only</td>
<td>11</td>
<td>−0.20</td>
<td>−0.40 to &lt;.001</td>
<td>−1.98</td>
<td>72.24</td>
<td>.05**</td>
<td>8.93</td>
</tr>
<tr>
<td>Parent report only</td>
<td>8</td>
<td>−0.24</td>
<td>−0.37 to −0.10</td>
<td>−3.48</td>
<td>&lt;.001</td>
<td>&lt;.01***</td>
<td>7.46</td>
</tr>
<tr>
<td>Effect at &lt;12 months follow-up</td>
<td>11</td>
<td>−0.09</td>
<td>−0.21 to 0.04</td>
<td>−1.39</td>
<td>21.17</td>
<td>.16</td>
<td>20.00</td>
</tr>
<tr>
<td>Effect at ≥12 months follow-up</td>
<td>6</td>
<td>−0.02</td>
<td>−0.16 to 0.11</td>
<td>−0.32</td>
<td>18.45</td>
<td>.75</td>
<td>83.33</td>
</tr>
</tbody>
</table>

Ncomp, Number of comparisons; NNT, Number Needed to Treat.

*p < .1; **p < .05; ***p < .01.

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Analysis was imputed study), Hedges’ Duval and Tweedie (2000) trim-and-fill procedure (1 following adjustment for missing studies using the bibliotherapy. Following adjustment for missing studies using the trim-and-fill procedure, Hedges’ g for the overall outcome analysis was −0.18 (95% CI: −0.29 to −0.08).

Subgroup and moderator analyses. The effect size for computerised interventions (n = 4; g = 0.08, 95% CI: −0.11 to 0.26; I² < .01) was greater than that for bibliotherapy (n = 10; g = −0.25, 95% CI: −0.36 to −0.15; I² < .01) and video intervention (n = 1; g = −0.20, 95% CI: −0.60 to −0.20; I² < .01) and this difference was statistically significant (p = .01). A meta-regression demonstrated a significant effect of total risk of bias on age (z = 2.24, p = .03), with older participants demonstrating greater effect sizes than younger participants. However, the effect was no longer significant after primary difficulty was added into the model as a covariate (z = −0.97, p = .33).

Discussion

Overall, self-help (both guided and unguided) was associated with significant moderate to large effects on symptoms of anxiety, depression and disruptive behaviour, although there was very high heterogeneity. The overall effect size when comparing self-help to face-to-face therapy was negative, suggesting that
self-help is better than no intervention but slightly worse than face-to-face treatments. In addition, the overall difference in effect size between guided and unguided self-help interventions together and face-to-face treatments was small and corresponded to an NNT of 10, which may not be of clinical significance. The same pattern of results was seen across studies of interventions for depression, anxiety and disruptive behaviour disorders when considered both together and separately, which is important given the high rates of comorbidity amongst these common mental health disorders in children (Merikangas et al., 2010). These findings, coupled with relatively low costs, ease of accessibility and patient acceptability may suggest that self-help could be a viable option for treatment for common childhood mental health disorders. However, few studies were considered to be at low risk of bias across all domains considered and there is a great need for well-conducted trials with low risk of bias, particularly comparing against face-to-face treatments. In addition, it is difficult to evaluate the extent to which studies comparing against face-to-face therapies used self-help as a ‘control’ arm, or rather, were powered as noninferiority trials to test equivalence to face-to-face treatments. Further fully powered noninferiority trials would be beneficial. The majority of potential moderators were not found to have an effect. We note that heterogeneity was high for many of the comparisons and therefore results of moderation analyses may not be reliable. Significant small study effects for studies comparing against a control group, as is often found in studies of psychological interventions (Driessen, Hollon, Bockting, Cuijpers, & Turner, 2015), may have led to an overestimation of the effect of self-help against control groups.

These potential findings of near-equivalence for self-help compared to face-to-face interventions are in agreement with a number of previous reviews across mental health disorders in adults. Some have found that the interventions have comparable effect sizes (Cuijpers et al., 2010; Perkins, Murphy, Schmidt, & Williams, 2006; Priemer & Talbot, 2013). Other reviews have found that although self-help is more effective than no intervention, it is less effective than traditional face-to-face therapy (Hirai & Clum, 2006; Mayo-Wilson & Montgomery, 2013).

Given the efficacy in comparison to no treatment and similar effects to standard face-to-face treatment, self-help may be particularly useful if used in a stepped-care model where those that do not respond are then offered face-to-face treatment. This

![Figure 4](image-url)
review did not include any studies of stepped-care in children as there are none that consider self-help alone against stepped-care. In fact, there are very few studies of stepped-care in children. A recent trial comparing stepped-care in child anxiety with standard face-to-face CBT found that the stepped-care approach (Step 1 – guided self-help, Step 2 – standard CBT, Step 3 – individually tailored treatment) produced equivalent effect sizes to standard CBT alone but with significantly less therapist time. Within the stepped-care approach, the strongest treatment gains were seen in Step 1 (self-help; 36 patients remitted from the primary disorder) and Step 2 (a further 36 patients remitted from the primary disorder) rather than Step 3 (a further 13 patients remitted from the primary disorder; Rapee et al., 2017). There does not appear to be strong evidence to only offer self-help treatments as a first step for less severe cases given there was no difference in efficacy for those meeting diagnostic criteria compared to those that did not. However, again, this comparison had high levels of heterogeneity and the result requires replication with further studies with low risk of bias. Future studies should investigate the stepped-care model across other common mental health disorders.

Overall, in studies comparing self-help against control groups, the presence of support was associated with better outcome. This finding was significant when disruptive behaviour interventions were considered alone. The same pattern was true in depression studies but the result was not significant. As almost all anxiety studies included guidance, it is not possible to assess whether this is true for anxiety interventions. Importantly, this result was not seen when only the studies with low risk of bias were considered, although heterogeneity was also very high in this comparison and only four studies were not supported. The finding of potential superiority of guided intervention compared to unguided intervention is consistent with findings of many reviews of self-help that demonstrate greater effect sizes for greater amounts of therapist contact (e.g. Gellatly et al., 2007 a review of self-help for depression; Lewis et al., 2012 a review of self-help for anxiety disorders; O’Brien & Daley, 2011 self-help for childhood behaviour disorders; Pearcy, Anderson, Egan, & Rees, 2016 a review of self-help for obsessive compulsive disorder; van Boeijen et al., 2005 self-help for anxiety). Previous research has indicated that increased therapist contact may also be associated with improved acceptability of the intervention (O’Brien & Daley, 2011) and there was some support for this from the present review. The nonsignificant difference between studies with and without guidance for the treatment of depression may warrant further investigation. Previous reviews have suggested that the level of therapist contact required may vary according to diagnosis (Newman, Erickson, Przeworski, & Dzus, 2003).

Other reviews of the type, rather than amount, of therapist contact, suggest that whilst some therapist contact is important, this does not need to be in the form of ‘guidance’; ‘nonguidance’ contact, such as emails to encourage treatment adherence, are also effective (Talbot, 2012). Many studies were not clear with regard to the amount of therapeutic ‘guidance’ versus nontherapeutic ‘encouragement’ given and so this was not analysed within our review. However, we did not find any effect of the format of guidance given (i.e. telephone calls, face-to-face, email or mixed). There was some evidence for greater effect sizes in trials of computerised interventions compared to bibliotherapy or other types of self-help.

One key factor that may affect the outcome of self-help interventions is the amount and type of involvement of parents (e.g. Manassis et al., 2014). This may also be associated with patient age – younger children and adolescents may perhaps be more able to make use of a self-help intervention without guidance if there is high-parental involvement, for example. Unfortunately, it was not possible to investigate the extent to which this was associated with effect size, as this was in turn associated with the primary difficulty; studies of interventions for behaviour problems and anxiety typically involve parents to some extent and those of depression interventions typically do not. Given the increasing evidence for efficacious interventions delivered entirely to parents (e.g. Thirlwall et al., 2013a), future research would benefit from description of the exact amount and type of parental involvement in the intervention across different diagnoses.

Few patient characteristics appeared to make significant differences to the effect size, although there was a significant effect of age on effect size for the studies comparing against face-to-face treatment, with studies of older children and young people demonstrating effect sizes more similar to the face-to-face interventions than studies of younger children. However, this effect was not seen when primary diagnosis was considered in the model. The presence or absence of young people aged over 18 did not make a significant difference to the overall pattern of results.

Limitations

Whilst the broad nature of our inclusion criteria aimed to draw together literature from across child and adolescent studies, this was also a limitation as it created significant heterogeneity. This was height-ened by the failure of many studies to specify a primary outcome measure. Several comparisons are under-powered due to the small number of studies with particular characteristics and most studies had risk of bias for at least one of the Cochrane risk of bias domains. Results of moderator analyses should therefore be interpreted with caution. Many studies excluded children and young people with intellectual and developmental disabilities and results may not
generalise to these groups of children and young people, although they are known to have particularly high rates of common mental health disorders (Emerson, 2003). Similarly, all studies were conducted in high-income countries.

**Directions for Future Research**

Overall, additional studies are needed to compare guided self-help treatments against standard face-to-face treatments across anxiety, depression and disruptive behaviour. These results would suggest that guided interventions may be preferable to those without guidance. Direct comparisons of different methods of self-help (e.g. bibliotherapy compared to computerised treatments) would be helpful. Further research investigating the use of self-help and guided self-help interventions in young people who are under-represented by the current research, such as those with intellectual and developmental disabilities and those from low and middle-income countries is warranted.

**Supporting information**

Additional supporting information may be found online in the Supporting Information section at the end of the article:

- **Appendix S1.** Search terms.
- **Appendix S2.** Satisfaction measures.
- **Appendix S3.** Meta-analysis comparison results separated by primary diagnosis for studies with a control comparator.
- **Appendix S4.** Low Risk of Bias studies comparing against control conditions.

**Key points**

- Self-help can increase access to therapy to meet a growing unmet need.
- Self-help is efficacious in treating common childhood mental health disorders.
- Guided self-help may be more efficacious than self-help, but this needs further research.
- Self-help interventions for this population may be slightly less effective than face-to-face treatments.

**References**


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**References of Papers Included in Meta-Analysis**


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