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STUDY PROTOCOL

The effectiveness of online parenting programmes in promoting parents' and adolescents' mental wellbeing: a systematic review protocol [version 1; peer review: awaiting peer review]

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Abstract

Introduction: Emotional difficulties among young people are debilitating and increasing in prevalence. Parent focused interventions delivered online offer a convenient and potentially effective way to increase young people's access to support. A systematic review offers the opportunity to assess their effectiveness and to identify characteristic of interventions which are particularly effective.

Objective: To assess the existing online interventions for parents of young people that are designed to improve young people's mental health and wellbeing.

Methods: We will conduct a systematic review of randomised controlled trials identified through searching CENTRAL, Embase, MEDLINE, PsycINFO, and PubMed. We will follow Cochrane Handbook and involve at least two people in screening and data extraction. Risk of bias will be assessed using Cochrane risk of bias tool. We will use EndNote, Excel, and Review Manager for managing the studies and data. We will also apply TIDieR checklist to extract and summarise the specific characteristics of interventions.

Protocol registration: PROSPERO CRD42018114921; registered on 31 October 2018.

Keywords
Mental Difficulties, Parenting, Adolescents, Systematic Review, Randomised Controlled Trials

Open Peer Review

Reviewer Status *AWAITING PEER REVIEW*

Any reports and responses or comments on the article can be found at the end of the article.

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Author roles: Al Falahi A: Conceptualization, Data Curation, Formal Analysis, Funding Acquisition, Investigation, Methodology, Project Administration, Resources, Software, Validation, Visualization, Writing – Original Draft Preparation, Writing – Review & Editing; **Glazebrook C**: Conceptualization, Formal Analysis, Methodology, Supervision, Validation, Writing – Review & Editing; **Shokraneh F**: Conceptualization, Data Curation, Formal Analysis, Investigation, Methodology, Resources, Software, Supervision, Validation, Visualization, Writing – Review & Editing

Background
Description of the condition

Emotional difficulties among young people are debilitating and a matter of concern for primarily two reasons, one being increases in prevalence rates over the years, while the other pertains to the risk, chronicity and outcomes of mental health during later stages of development. Studies have consistently demonstrated homotypic continuity across individuals who develop emotional problems during their adolescent years (Scholten *et al.*, 2013) and prevalence rates continue to increase with rates for anxiety disorders, reported at 1.52% among children aged 5 to 9 years, 3.71% among children aged 10 to 14 years and 4.36% among adolescents aged between 15 and 19 years; and depression rates residing at 0.13% among children aged 5 to 9 years, 1.24% among children aged 10 to 14 years, and 3.44% among adolescents aged between 15 to 19 years (World Health Organization, 2015). Similar trends have also been reported across ethnic populations (for e.g. Canals *et al.*, 2019: Sandal *et al.*, 2017). Furthermore, the manifestation of such disorders involve a high frequency of comorbidity (Ogundele, 2018). A report by the World Health Organization (2011) cautioned that, per their estimates, mental health issues among young people would reach epidemic proportions by the year 2020 in the absence of preventive measures, timely diagnosis, and early intervention.

The grim outlook of such research points to the need to explore suitable interventions. In general, interventions catering to emotional difficulties among young people can range from preventive measures, face to face therapy, symptom reduction, guided and unguided self-help tools, and psychotropic medication. In terms of the mental health needs of young people, research has shown considerable support for psychosocial approaches that are transdiagnostic and employ a cognitive behavioural framework (Comer *et al.*, 2013: Ehrenreich-May *et al.*, 2017: Ogundele, 2018: Wehry *et al.*, 2015). A common factor across such treatments is the need to involve the young person's support system, particularly their caregivers and teachers. Given that the mental and emotional development of young people occur in the context of parental and educational scaffolds, including parents in treatment is found to be an effective strategy either as a standalone intervention (such as parent training programmes) or as part of a comprehensive programme (Comer *et al.*, 2013).

Given that parents have a key role in shaping and nurturing specific thought patterns and coping strategies throughout an individual's developmental years, parent-focused early intervention is a befitting avenue for improving the mental wellbeing of young people with emotional difficulties. A national initiative in the UK called the Parenting Early Intervention Pathfinder (PEIP) programme examined the effect of three different programmes with parents of children aged 8 to 13 years (Lindsay *et al.*, 2007). These programmes were developed based on social learning theory. At the start of the programme all the parents who participated in this programme were assessed as having lower mental well-being. They also reported a high level of emotional and behavioural problems in their children. Self-reported improvements following the psychosocial intervention were noted in the areas of prosocial child behaviour, positive parent

outcomes (including improved mental health) and improved co-operation in family relationships. These results highlight the potential effectiveness and impact of parent-focused interventions in improving mental health among young people. In another longitudinal study, parental anxiety and depressive symptoms were significant predictors of unemployment, such that, ten years later, their adult children were reported to be using welfare services due to lack of employability (Pape *et al.*, 2012). The authors of this study further concluded that the prevention and treatment of anxiety and depression among young people should be family-orientated and aimed at ensuring an effective work-life integration.

Description of parent interventions

Parent-focused interventions are designed to improve the understanding, awareness and skills of parents, so as to improve their relationship with adolescent children and consequently have a positive impact on the young person's well-being. The way in which this works is not well known, though hypotheses have been proposed. The most frequently recognized assumptions often follow either a direct influence in that parents are better able to meet their children's emotional, psychological and behavioural needs; or that (indirectly) their own emotional, psychological and behavioural needs will be better satisfied therefore enabling them to model and display increased pro-social behaviours (Long *et al.*, 2017).

In terms of the implementation of parent-focused programmes itself, research has examined the duration, frequency and type of therapy that might be most effective. Among the commonly utilized principles in intensive treatments is emotion focused family therapy. One study by Foroughe *et al.* (2019) found this type of therapy, when delivered in a two-day intensive period, brought about increased parental self-efficacy and improvement in child symptomology. The study further indicated that this was an effective, intensive short-term mode of treatment that can have a lasting impact at a four-month follow-up assessment. One cost effective method that can reach many parents without a strain on time, resources and services is to deliver online, web-based interventions. These interventions can incorporate mental health principles and theory, are evidence based, and have been shown to positively impact both parental and child mental health. An example of this is a tailored web-based intervention that was aimed to alleviate parental risk of mental health difficulties and to increase protective factors such as coping strategies, improved mood and decision-making ability, for emotional problems among young people (Yap *et al.*, 2018).

While the aforementioned research throws light on the forms and effectiveness of parent-training programmes, less is established in terms of potential variations in outcomes owing to contextual factors such as gender, age, socio-economic status and geographic setting/cultural context (Das *et al.*, 2016). Therefore, a systematic review of the effect of parent focused interventions on adolescent mental health and wellbeing allows for more focused future directions for research and is therefore elucidated in the ensuing paragraphs.

How the intervention might work

Among the existing parent-focused interventions targeting depression and anxiety, two foundational theories seem to appear at the forefront. Some of these interventions are rooted in Bandura's (1971) social learning theory, which posits that behaviours are learned through observation of the behaviours of credible and influential models. To this effect, parent-focused interventions are based on the premise that children's behaviours are learned through their observation of their parents' behaviour. These interventions therefore emphasize that the way the parents respond to their child's behaviour is a determinant of continuation and frequency of similar behaviours in the future. While existing evidence supports short-term behavioural improvement among pre-school and primary school children (e.g. Scott & Gardner, 2015), there is also some empirical support for the sustained effectiveness of such programmes. For example, the Incredible Years intervention is found to be useful among young people with conduct disorder (Ryan *et al.*, 2017). Another programme called Triple P, which is also designed using the social learning theory, seems promising in terms of the positive effects on skills and knowledge among the parents and emotional problems among the children and adolescents (Sanders *et al.*, 2014). These are some of the outcomes to be assessed in this systematic review which will also include interventions that target the parents' skills. For example, training the parents to develop conducive living skills has demonstrated a noticeable effect on positive psychological outcomes in their adolescents (Parmar & Jain, 2019). Taken together, such parenting interventions that are founded on social learning theory can reduce the prevalence of emotional problems among adolescents (Sanders, 2008).

The second group of parent-focused interventions emphasis the principles of attachment theory which is based on the premise that children intend to build a significant emotional attachment with one or both parents. Such bonds not only support children at times of negative emotions but also empowers the child with crucial social skills, thereby making them confident in facing similar challenges in social environment so that they could develop a social life (Ainsworth *et al.*, 1978). Interventions founded on attachment theory highlight the relational aspect that influences the dynamics and manifestation of emotional difficulties. In this regard, in the wellbeing model discussion, it is also known that the parenting style is inclusive of methods that parents apply on their children that affect the mental health of the adolescents (Arulsubila & Subashree, 2017). Furthermore, the quality of parent-child relationship can predict the psychological wellbeing of young people during their adolescent years (Resnick *et al.*, 1997).

Why it is important to do this review

The main reason to do this review is that there is no systematic effort known to this author that gathers evidence about the effectiveness of online interventions for parents of young people with emotional difficulties. In addition, this review will inform the design of future Randomised Controlled Trials (RCTs) pertaining to this topic.

Objectives

To assess the existing online interventions for parents of young people that are designed to improve young people's mental health and wellbeing.

Methods

Criteria for considering studies for this review

Types of studies. This review will include RCTs with no limit to language, publication status, document type, or date of publication.

Types of participants. Parents of young people (mean age of the child sample will be between 10 and 19 years).

Types of interventions.

1. This review will consider studies evaluating the following interventions:

> Parent-based interventions that include parent training and aim to help parents understand, support and improve their child's mental health and wellbeing.

> If the intervention of study is an integrated intervention consisting of multi-components, they will be included for further assessment.

> Interventions that include a young person component, provided that the parent receives at least some intervention.

> Interventions that have a digital or online component, including:

>> Web-based

>> Mobile application (apps)

>> Social media, email, and text

2. This review will consider studies that compare the intervention to:

> No treatment or another active intervention

> Treatment as usual

> Waitlist control

Exclusion criteria. Interventions that will be excluded include those that are entirely for the parent or family where the young person is not the focus, and interventions focused on parents of adolescents with specific physical health conditions.

Types of outcome measures. Primary outcomes will include parenting behaviour, parenting style, attitudes towards young people's mental health or knowledge of young people's mental health including, self-efficacy, expressed emotion, coping style, and care giver's burden.

Secondary outcomes will include young people's mental health and wellbeing including depression, anxiety, coping, stress, academic achievement, sleep, school attendance, substance abuse, and self-harm.

Search methods for identification of studies

Electronic searches. CENTRAL, Embase, MEDLINE, PsycINFO, and PubMed will be searched combining four components: online/digital, parenting, adolescents, and randomised controlled trials. The search will not be limited to language, document type, publication status, or time/date. The following search strategies will be used for searching the databases:

CENTRAL via Cochrane Library. ([mh CD-I] OR [mh CD-ROM] OR [mh "Compact Disks"] OR [mh "Computer-Assisted Instruction"] OR [mh ^Computers] OR [mh "Computers, Handheld"] OR [mh "Electronic Mail"] OR [mh Hypermedia] OR [mh Internet] OR [mh "Mobile Applications"] OR [mh Smartphone] OR [mh "Social Media"] OR [mh ^Software] OR [mh "Text Messaging"] OR [mh "Videodisc Recording"] OR [mh "Webcasts as Topic"] OR ("Compact Disc" OR "Compact Discs" OR "Compact Disk" OR "Compact Disks" OR "Computer Assisted" OR "Computer Game" OR "Computer Games" OR "Computer Program" OR "Computer Programme" OR "Computer Programmes" OR "Computer Programs" OR "E-Health" OR "Electronic Health" OR "Electronic Mail" OR "Electronic Mails" OR "E-Mail" OR "E-Mails" OR "Handheld Computer" OR "Handheld Computers" OR "M-Health" OR "Mobile Application" OR "Mobile Applications" OR "Mobile Health" OR "Mobile Phone" OR "Palm Pilot" OR "Palm Pilots" OR "Palmtop" OR "Palm-Top" OR "Personal Digital Assistant" OR "Pocket PC" OR "Pocket PCs" OR "Short Message Service" OR "Smart Phone" OR "Smart Phones" OR "Social Media" OR "Tablet Computer" OR "Tablet Computers" OR "Text Message" OR "Text Messages" OR App OR Apps OR CD OR CDROM* OR Computerised OR Computerized OR Cyber* OR Digital* OR DVD OR EHealth OR Email* OR Facebook OR Hypermedia OR Hypertext OR Internet OR iPad OR iPhone OR Laptop* OR Messaging OR MHealth OR Online OR PDA OR PDAs OR Podcast* OR Smartphone* OR SMS OR Software* OR Texting* OR Tweet* OR Twitter* OR Virtual* OR Web OR Webcast* OR Website* OR WeChat OR Whatsapp* OR YouTube):ti,ab) AND ([mh Fathers] OR [mh "Legal Guardians"] OR [mh Mothers] OR [mh Parenting] OR [mh Parents] OR [mh "Single Parent"] OR (Father* OR Guardian* OR Mother* OR Parent*):ti,ab) AND ([mh Adolescent] OR (Adolescen* OR Teen* OR Young OR Youth*):ti,ab)

In Trials

Embase 1974 to 2018 week 37 via Ovid SP.
1. CD-I/ OR CD-ROM/ OR Compact Disk/ OR Computer/ OR Digital Computer/ OR Personal Computer/ OR Personal Digital Assistant/ OR E-Mail/ OR Hypermedia/ OR Internet/ OR Mobile Application/ OR Smartphone/ OR Social Media/ OR Software/ OR Text Messaging/ OR Video Disk/ OR Webcast/ OR ("Compact Dis?" OR "Compact Dis?s" OR "Computer Assisted" OR "Computer Gam*" OR "Computer Program*" OR E?Health OR "Electronic Health" OR "Electronic Mail?" OR "E?Mail?" OR "Hand?held Computer?" OR M?Health OR "Mobile Application?" OR "Mobile Health" OR "Mobile Phone?" OR "Palm Pilot?" OR "Palm?top" OR "Personal Digital Assistant?" OR "Pocket PC?" OR "Short Message Service" OR Smart?Phone? OR "Social Media" OR "Tablet Computer?" OR "Text Messag*" OR App OR Apps OR CD OR CDROM* OR Computeri?ed OR Cyber* OR Digital* OR DVD OR Facebook OR Hypermedia OR Hypertext OR Internet OR iPad OR iPhone OR Laptop* OR Messaging OR Online OR PDA OR PDAs OR Podcast* OR SMS OR Software* OR Texting* OR Tweet* OR Twitter* OR Virtual* OR Web OR Webcast* OR Website* OR WeChat OR Whatsapp* OR YouTube).ti,ab.

2. Father/ OR Legal Guardian/ OR Mother/ OR Parent/ OR Single Parent/ OR (Father* OR Guardian* OR Mother* OR Parent*).ti,ab.

3. Adolescent/ OR Adolescence/ OR (Adolescen* OR Teen* OR Young OR Youth*).ti,ab.

4. Randomization/ OR Crossover-Procedure/ OR Double-Blind Procedure/ OR Randomized Controlled Trial/ OR Single-Blind Procedure/ OR (Randomi?ed OR Randomly OR Factorial* OR Cross?over* OR ((Singl* OR Doubl* OR Trebl* or Tripl*) adj (Mask* OR Blind*)) OR Assign* OR Allocat* OR Volunteer* OR Groups OR Trial*).ti,ab.

5. 1 AND 2 AND 3 AND 4

6. Exp Animals/ OR Exp Invertebrate/ OR Animal Experiment/ OR Animal Model/ OR Animal Tissue/ OR Animal Cell/ OR Nonhuman/

7. Human/ OR Normal Human/ OR Human Cell/

8. 6 AND 7

9. 6 NOT 8

10. 5 NOT 9

11. Limit 10 to Embase

Ovid MEDLINE(R) and Epub ahead of print, in-process & other non-indexed citations and daily 1946 to September 07, 2018.
1. CD-I/ OR CD-ROM/ OR Compact Disks/ OR Computer-Assisted Instruction/ OR Computers/ OR Computers, Handheld/ OR Electronic Mail/ OR Hypermedia/ OR Internet/ OR Mobile Applications/ OR Smartphone/ OR Social Media/ OR Software/ OR Text Messaging/ OR Videodisc Recording/ OR "Webcasts as Topic"/ OR ("Compact Dis?" OR "Compact Dis?s" OR "Computer Assisted" OR "Computer Gam*" OR "Computer Program*" OR E?Health OR "Electronic Health" OR "Electronic Mail?" OR "E?Mail?" OR "Hand?held Computer?" OR M?Health OR "Mobile Application?" OR "Mobile Health" OR "Mobile Phone?" OR "Palm Pilot?" OR "Palm?top" OR "Personal Digital Assistant?" OR "Pocket PC?" OR "Short Message Service" OR Smart?Phone? OR "Social Media" OR "Tablet Computer?" OR "Text Messag*" OR App OR Apps OR CD OR CDROM* OR Computeri?ed OR Cyber* OR Digital* OR DVD OR Facebook OR Hypermedia OR Hypertext OR Internet OR iPad OR iPhone OR Laptop* OR Messaging OR Online OR PDA OR PDAs OR Podcast* OR SMS OR Software* OR Texting* OR Tweet* OR Twitter* OR Virtual* OR Web OR Webcast* OR Website* OR WeChat OR Whatsapp* OR YouTube).ti,ab.

2. Fathers/ OR Legal Guardians/ OR Mothers/ OR Parenting/ OR Parents/ OR Single Parent/ OR (Father* OR Guardian* OR Mother* OR Parent*).ti,ab.

3. Adolescent/ OR (Adolescen* OR Teen* OR Young OR Youth*).ti,ab.

4. Controlled Clinical Trial.pt. OR Randomized Controlled Trial.pt. OR (Randomi?ed OR Randomly OR Trial OR Groups).ti,ab.

5. 1 AND 2 AND 3 AND 4

6. Exp Animals/ NOT Humans.sh.

7. 5 NOT 6

PsycINFO 1806 to September Week 1 2018 via Ovid SP.

1. Computer Assisted Instruction/ OR Computers/ OR Computer Applications/ OR Computer Assisted Therapy/ OR Computer Games/ OR Computer Mediated Communication/ OR Computer Software/ OR Digital Computers/ OR Digital Video/ OR Hypermedia/ OR Hypertext/ OR Internet/ OR Online Therapy/ OR Online Community/ OR Online Social Networks/ OR Social Media/ OR Text Messaging/ OR Websites/ OR ("Compact Dis?" OR "Compact Dis?s" OR "Computer Assisted" OR "Computer Gam*" OR "Computer Program*" OR E?Health OR "Electronic Health" OR "Electronic Mail?" OR "E?Mail?" OR "Hand?held Computer?" OR M?Health OR "Mobile Application?" OR "Mobile Health" OR "Mobile Phone?" OR "Palm Pilot?" OR "Palm?top" OR "Personal Digital Assistant?" OR "Pocket PC?" OR "Short Message Service" OR Smart?Phone? OR "Social Media" OR "Tablet Computer?" OR "Text Messag*" OR App OR Apps OR CD OR CDROM* OR Computeri?ed OR Cyber* OR Digital* OR DVD OR Facebook OR Hypermedia OR Hypertext OR Internet OR iPad OR iPhone OR Laptop* OR Messaging OR Online OR PDA OR PDAs OR Podcast* OR SMS OR Software* OR Texting* OR Tweet* OR Twitter* OR Virtual* OR Web OR Webcast* OR Website* OR WeChat OR Whatsapp* OR YouTube).ti,ab.

2. Fathers/ OR Mothers/ OR Parent Training/ OR Parents/ OR Single Parents/ OR (Father* OR Guardian* OR Mother* OR Parent*).ti,ab.

3. (Adolescen* OR Teen* OR Young OR Youth*).ti,ab.

4. Exp Treatment Effectiveness Evaluation/ OR Clinical Trials/ OR Mental Health Program Evaluation/ OR (Randomi?ed OR Factorial* OR Cross?over* OR ((Singl* OR Doubl* OR Trebl* or Tripl*) adj (Mask* OR Blind*)) OR Assign* OR Allocat* OR Volunteer* OR Groups OR Trial*).ti,ab.

5. 1 AND 2 AND 3 AND 4

6. 1 AND 2 AND 4

7. Limit 6 to Adolescence <13 to 17 Years>

8. 5 OR 7

PubMed. ((CD-I[mh] OR CD-ROM[mh] OR "Compact Disks"[mh] OR "Computer-Assisted Instruction"[mh] OR Computers[mh:NoExp] OR "Computers, Handheld"[mh] OR "Electronic Mail"[mh] OR Hypermedia[mh] OR Internet[mh] OR "Mobile Applications"[mh] OR Smartphone[mh] OR "Social Media"[mh] OR Software[mh:NoExp] OR "Text Messaging"[mh] OR "Videodisc Recording"[mh] OR "Webcasts as Topic"[mh] OR "Compact Disc"[tiab] OR "Compact Discs"[tiab] OR "Compact Disk"[tiab] OR "Compact Disks"[tiab] OR "Computer Assisted"[tiab] OR "Computer Game"[tiab] OR "Computer Games"[tiab] OR "Computer Program"[tiab] OR "Computer Programme"[tiab] OR "Computer Programmes"[tiab] OR "Computer Programs"[tiab]

OR "E-Health"[tiab] OR "Electronic Health"[tiab] OR "Electronic Mail"[tiab] OR "Electronic Mails"[tiab] OR "E-Mail"[tiab] OR "E-Mails"[tiab] OR "Handheld Computer"[tiab] OR "Handheld Computers"[tiab] OR "M-Health"[tiab] OR "Mobile Application"[tiab] OR "Mobile Applications"[tiab] OR "Mobile Health"[tiab] OR "Mobile Phone"[tiab] OR "Palm Pilot"[tiab] OR "Palm Pilots"[tiab] OR "Palmtop"[tiab] OR "Palm-Top"[tiab] OR "Personal Digital Assistant"[tiab] OR "Pocket PC"[tiab] OR "Pocket PCs"[tiab] OR "Short Message Service"[tiab] OR "Smart Phone"[tiab] OR "Smart Phones"[tiab] OR "Social Media"[tiab] OR "Tablet Computer"[tiab] OR "Tablet Computers"[tiab] OR "Text Message"[tiab] OR "Text Messages"[tiab] OR App[tiab] OR Apps[tiab] OR CD[tiab] OR CDROM*[tiab] OR Computerised[tiab] OR Computerized[tiab] OR Cyber*[tiab] OR Digital*[tiab] OR DVD[tiab] OR EHealth[tiab] OR Email*[tiab] OR Facebook[tiab] OR Hypermedia[tiab] OR Hypertext[tiab] OR Internet[tiab] OR iPad[tiab] OR iPhone[tiab] OR Laptop*[tiab] OR Messaging[tiab] OR MHealth[tiab] OR Online[tiab] OR PDA[tiab] OR PDAs[tiab] OR Podcast*[tiab] OR Smartphone*[tiab] OR SMS[tiab] OR Software*[tiab] OR Texting*[tiab] OR Tweet*[tiab] OR Twitter*[tiab] OR Virtual*[tiab] OR Web[tiab] OR Webcast*[tiab] OR Website*[tiab] OR WeChat[tiab] OR Whatsapp*[tiab] OR YouTube[tiab]) AND (Fathers[mh] OR "Legal Guardians"[mh] OR Mothers[mh] OR Parenting[mh] OR Parents[mh] OR "Single Parent"[mh] OR Father*[tiab] OR Guardian*[tiab] OR Mother*[tiab] OR Parent*[tiab]) AND (Adolescent[mh] OR Adolescen*[tiab] OR Teen*[tiab] OR Young[tiab] OR Youth*[tiab]) AND ("Controlled Clinical Trial"[pt] OR "Randomized Controlled Trial"[pt] OR Groups[tiab] OR Randomised[tiab] OR Randomized[tiab] OR Randomly[tiab] OR Trial[tiab]) NOT (Animals [mh] NOT Humans [mh])) NOT MEDLINE[sb]

Searching other resources

We will inspect the references of all included studies within this review to identify further relevant studies.

Data collection and analysis

Selection of studies. Identified citations will be collected and imported into EndNote X8 (27) and duplicates removed. Titles and abstracts will be screened by the first researcher for assessment against the inclusion criteria for the review and her work was double-checked by the second researcher. Disagreement between these two researchers and a random selection of excluded papers will be reviewed by the team leader. Full texts of remaining articles will be obtained and reviewed against the inclusion criteria by AF and FS and their work will be checked and verified by the team leader.

Data extraction and management

1. Extraction. A Microsoft Excel-based data extraction form designed for the purpose of this study will be used to extract the data such as details of population of the study, interventions, outcomes, and study design.

2. Management. The data will be managed and summarized in Microsoft Excel (for Office 365) as a data entry and management tool to create the relevant tables and graphs. Review Manager 5.3 will be used for creating Risk of Bias tables and figure.

Template for Intervention Description and Replication (TIDieR) will also be used to check for extracted of reported interventions from the trials.

Assessment of risk of bias in included studies. The data related to the quality of each study will be extracted using Cochrane's Risk of Bias Tool (Higgins *et al.*, 2017). This data will then be double-checked by the second researcher. Disagreements between these two reviewers and a random sample of the data extraction were checked and verified by the team leader.

Analysing/synthesising the data. If we find enough homogeneous studies, we will consider conducting meta-analysis for the relevant outcomes. We will also consider that, because of the possible heterogeneity of the interventions, we might not be able to analyse the data; then we will report a summary of the studies beside their quality based on the assessment of risk of bias.

If the data meet the criteria for meta-analysis, we might consider running sensitivity analysis for the studies with higher contribution to the weight of the analysis and for the studies with higher heterogeneity. We may also consider subgroup analysis for this review to evaluate key features of parent-based interventions associated with most effective treatment outcomes.

Protocol registration

This study has been registered with PROSPERO on 31st October 2018 (CRD42018114921).

Dissemination of information. We will publish the results of this review and will make the data accessible openly in re-usable format.

Study status. Search and screening for the study has been done and the data extraction, synthesis and writing the final report is ongoing.

Data availability

Underlying data

No data are associated with this article

Reporting guidelines

Open Science Framework: PRISMA-P checklist for "The effectiveness of online parenting programs in promoting parents' and adolescents' mental wellbeing: a systematic review protocol". https://doi.org/10.17605/OSF.IO/KZNQE (Shokraneh, 2019).

Data are available under the terms of the Creative Commons Attribution 4.0 International license (CC-BY 4.0).

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Publisher Full Text

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