Strategies not accompanied by a mental health professional to address anxiety and depression in children and young people: a scoping review of range and a systematic review of effectiveness

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Abstract

This Review reports on a scoping review followed by a systematic review to consider interventions designed to address or manage depression or anxiety in children and young people up to the age of 25 years without the need to involve mental health professionals. The scoping review identified 132 approaches, 103 of which referred to children or young people (younger than 25 years). These approaches included social interaction, engagement with nature, relaxation, distraction, sensory stimulation, physical activity, altering perceptions, engaging in hobbies, self-expression, and exploration. A systematic review of effectiveness studies from the literature identified in the scoping review found only 38 studies on seven types of intervention that met the inclusion criteria. 16 studies were based on cognitive or behavioural

principles (15 on digital interventions and one on bibliotherapy), ten focused on physical exercise, five on light therapy, three on dietary supplements, two on massage therapy, one on online peer support, and one on contact with a dog. Most studies focused on adolescents or young adults. Evidence suggested that light therapy could be effective for season depression and that digital interventions based on attention bias modification are ineffective for anxiety. Mixed evidence was available on the effectiveness of computerised cognitive behavioural therapy for depression and anxiety, and of physical exercise for depression. All other studies had insufficient certainty to obtain even tentative conclusions about effectiveness. These results highlight the disparity between the extensive range of approaches identified in the scoping review and the restricted number and focus found in the systematic review of effectiveness of these approaches. We call for an expanded research agenda that brings evaluation rigour to a wide range of self or community approaches.

Introduction

Depression and anxiety are two of the most prevalent mental health problems worldwide and represent an increasing global health challenge.[1] Their onset in childhood and adolescence is becoming more widely recognised by researchers and practitioners,[2] with long-term effects across a range of psychosocial outcomes.[3,4] Growing evidence shows the increase in incidence in young people (younger than 25 years), particularly in girls, with potentially one in four girls reporting anxiety and depression.[5,6] Anxiety and depression are the most frequently reported difficulties among young people seeking help from specialist mental health services.[7]

How to address this major health challenge in children and young people is of international interest, which has resulted in calls for improved availability of mental health specialists. Whether a wide range of interventions to support and address mental health problems in youth might be possible, including approaches that do not rely on specialist professional input, is also of interest.[8]

The consideration of non-professionally mediated responses to depression and anxiety in youth is important for four reasons. First, not all those who accessed specialist help measurably improved symptoms of functioning.[9,10] For example, only around half of patients who received professional help for

depression from specialist mental health services in England between 2011 and 2015 showed a "reliable improvement" by the end of treatment.[11] Therefore, considering a wider range of approaches might be warranted.

Second, many young people with mental health difficulties do not receive professional help,[12] which is thought to be due to a combination of a paucity of available resources, the stigma associated with seeking professional help, and personal choice. Thus, considering additional or complementary approaches might be necessary.

Third, the extent of mental health problems in the general population, and in young people in particular, means that relying on increased numbers of professionals alone is unlikely to be a viable solution. Prevalence of anxiety and depression is high and possibly rising.[5] As Schaefer and colleagues[13] found in their analysis of life course trajectories for mental health problems over a 30-year period, only 17% of people had no mental health problems identified over this period and 41% of the cohort had mental health problems sustained over many years. This finding suggests that what the authors termed enduring mental health (ie, long-term state of not having a mental health illness) might be an aberration rather than the normal condition. Therefore, it is necessary to consider solutions that have the potential for a wide population reach and to understand what is likely to positively affect mental health for people with depression or anxiety who do not have access to specialist help or who have accessed specialist help but still have ongoing difficulties.

Finally, redressing the skew in research to date is also needed. The majority of this research has considered interventions from the perspective of a professional viewpoint of treatment intervention. Any change that was not associated with a professional input has been termed spontaneous improvement rather than considering the effort or action of the individuals or the effect of other approaches that might have contributed to that improvement. Since up to 48% of people with depression will show such spontaneous improvement,14 understanding more about what helped these individuals and how these approaches can be applied to others is important.

Emerging evidence is available on the effect of non-professionally mediated interventions to support positive mental health in general, such as the effect of interaction with pets.[15] However, less evidence is available on strategies aimed specifically at people with existing mental health problems and even less on strategies aimed specifically at children and young people. A contemporaneous review on

self-care strategies for children and young people with mental health issues only included interventions developed by professionals (eg, computerised cognitive behavioural therapy [CBT]) and has a specific focus on comparing those guided by a professional with those not guided by a professional.[16] To our knowledge, no systematic reviews of the scope or effectiveness of strategies for helping children and young people with anxiety and depression that are explicitly non-professionally mediated are available. This Review aims to address this gap. Therefore, we did a scoping review of the published scientific literature to identify the existing range of non-professionally mediated interventions for those with anxiety, depression, or both, in children, young people, or adults; identified how many of these approaches have been researched and assessed for children and young people with anxiety, depression, or both; systematically reviewed the range of approaches identified in the scoping review as an early step in considering the effectiveness of those non-professionally mediated interventions that have been assessed for this population; and are using the findings of both the scoping and systematic reviews to engage professionals, children, young people, and parents in developing and prioritising research that strengthens our understanding of what supports improvement and why, extending our knowledge beyond current professional frameworks.

Methods

Overview for both scoping and systematic reviews

The study involved an electronic search of literature databases to provide a comprehensive scoping of relevant strategies, followed by further screening of the search output to identify evidence of effectiveness of strategies used by children and young people. The review protocol was drafted a priori by the original research team (MW, KD, RU, LG, and DL), which included an experienced systematic review methodologist (RU) and experienced mental health specialists (DL and MW), and was registered on PROSPERO (CRD42018088520). The systematic reviewer did the searching, screening, and decided on inclusion and exclusion of the studies for both the scoping review and the systematic review of effectiveness. For the systematic review all excluded and included studies were independently assessed by another member of the research team (MW), at both the abstract and full paper stage, and a randomly selected sample of Grading of Recommendations Assessment, Development and Evaluation (GRADE) reviews of quality were independently assessed by a third reviewer (DH). The PICO framework tables (appendix) show the inclusion and exclusion criteria for both reviews.

Scoping review method

The scoping review to identify non-professionally mediated strategies included adults, young people, and children to ensure comprehensiveness. A broad definition of professional or paraprofessional was used and comprised any person trained to use a treatment or intervention for the purposes of improving mental health or emotional wellbeing (eg, traditional healers, acupuncturists, and specifically trained therapists, such as massage therapists, music therapists, and drama therapists) who were all excluded from the review. Where teachers were working as educators they were included in the review, but if they were trained in delivery of a mental health intervention (eg, mindfulness), they were excluded. If an intervention drew on a teacher providing input as part of their role as educator, this was included (eg, introducing an online mental health app in schools or supporting physical activity).

Any level and definition of anxiety or depression was included, including self-report of stress or low mood. Papers that focused solely on phobias or post-traumatic stress disorder were excluded. Any type of intervention strategy was included, as long as it was identified as an approach to improve symptoms of anxiety, depression, or both. Strategies that included any degree of therapeutic input (eg, individualised encouraging weekly emails or feedback on homework exercises) were excluded. However, interventions with non-therapeutic automated reminder emails or text messaging were included.

We did a systematic search for English language studies from Jan 1, 2000, to Jan 29, 2018: Web of Science Core Collection (Science Citation Index Expanded, Social Science Citation Index Expanded, Arts and Humanities Citation Index, Conference Proceedings Citation Index–Science edition, Conference Proceedings Citation Index–Social Science and Humanities edition, Emerging Sources Citation Index (2015–18]; and Book Citation Index [2005–18]); MEDLINE; BIOSIS Citation Index; BIOSIS Previews; Cochrane Central Database of Controlled Trials (CENTRAL, Cochrane Library); and SciELO Citation Index. Studies were identified using search terms for disorders of "anxiety or depression" combined with terms for "self-help", "coping strategy", and "complementary therapy" (see appendix for the full list of search terms used).

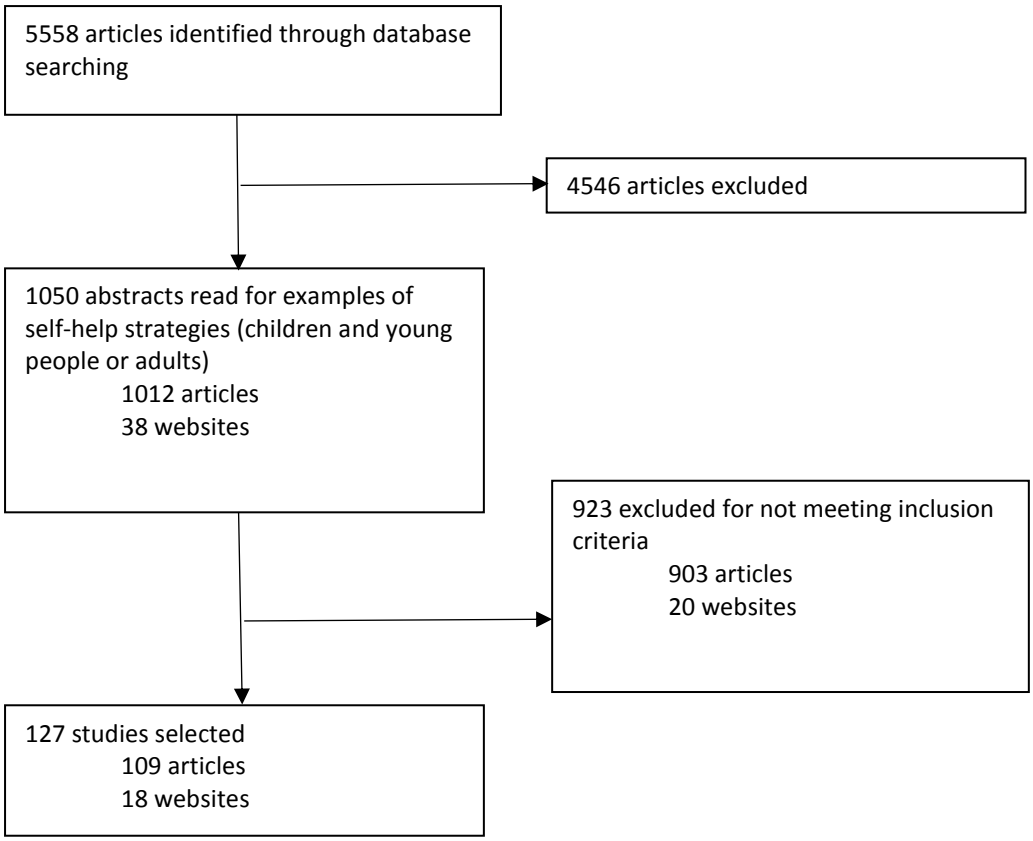

Figure 1: **PRISMA diagram for scoping review**

We did a first round of citation screening of titles and abstracts to remove clearly irrelevant studies for this Review. After the initial search and screening of identified citations, we did a second round of screening of titles and abstracts. This round included all types of citations, including non-research, and was not restricted to children and young people. When the abstract was unclear on whether the strategy or strategies being described were used without the input from a professional or paraprofessional, the full paper was retrieved and read for clarification.

In addition, websites relating to mental health were hand-searched using a snowballing technique, and any novel strategies that were described for use without support from a professional or paraprofessional that had not been identified from the literature search were listed. This searching was guided by input from the expert clinical specialists in the group. The snowballing technique was similar to that used to identify a sample of informants for a qualitative study. In the first instance the clinical experts suggested several websites that might be useful. We searched these websites and any reference or link to an alternative website was followed up. We then searched the newly identified websites for strategies that fit the Review's inclusion criteria, which was continued until no novel strategies were identified (ie, until saturation was reached).

All self-help strategies identified from both search methods were tabulated, along with their citation and whether the strategy was being suggested for use by children and young people, adults, or both. The research team agreed a strategy of not seeking to group or categorise approaches as they were identified to allow maximum scope for identifying new approaches and minimal imposition of pre-existing schema for considering interventions.

Table 1: **Results of scoping review of strategies or approaches not accompanied by a mental health professional to support and manage anxiety and depression in children, young people, and working-age adults**

	Target population identified in the literature
Letting oneself be loved	Children and young people
Unsupported or unguided computer-based attention bias modification	Children and young people
Unsupported or unguided computer-based attention bias modification of interpretations	Children and young people
Unsupported or unguided computer-based problem-solving therapy	Children and young people
Unsupported or unguided computer-based cognitive–behavioural analysis of system psychotherapy	Children and young people
Unsupported or unguided computer-based worry exposure	Children and young people
Unsupported or unguided computer-based audio-photic stimulation	Children and young people
Unsupported or unguided computer-based systematic desensitisation	Children and young people
Robots	Children and young people
Apologising to others	Children and young people
Avoiding conflict or stressful situations at home	Children and young people
Thinking about things	Children and young people
Challenge the negative feelings	Children and young people
Notice triggers	Children and young people
Goal-setting	Children and young people
Small actions to release tension	Children and young people
Switching off screens	Children and young people
Denial	Children and young people
Being alone or distancing from others	Children and young people

Relaxation techniques (unspecified)	Children and young people
Distraction techniques	Children and young people
Daydreaming	Children and young people
Hope box or happy box therapies	Children and young people
Going out or being outside	Children and young people
Minimising exposure to environmental toxins	Children and young people
Home entertainment, escapism, or self-distraction	Children and young people
Going to the cinema	Children and young people
Socialising or going out with friends	Children and young people
Bibliotherapy	Children and young people
Self-talk	Children and young people
Rewards	Children and young people
Eating more	Children and young people
Playing	Children and young people
Making music	Children and young people
Singing	Children and young people
Drama	Children and young people
Crying	Children and young people
Over the counter medications	Children and young people
Homoeopathy preparations	Children and young people
Colour therapy	Children and young people
Reading religious texts (eg, the Bible and Quran)	Children and young people
Going to church, mosque, temple, etc	Children and young people
Revision	Children and young people
Getting a job or working harder	Children and young people
Getting into an argument, saying mean things, or starting a physical fight	Children and young people
Blaming others	Children and young people
Self-blame	Children and young people
Swearing	Children and young people
Self-harm	Children and young people
Face-to-face informal peer support	Children, young people, and adults
Face-to-face group peer support	Children, young people, and adults
Telephone support	Children, young people, and adults
Telephone peer support	Children, young people, and adults
One-to-one online chat support	Children, young people, and adults
Face-to-face informal social support	Children, young people, and adults
Talking to someone you know and trust	Children, young people, and adults
Online peer group support	Children, young people, and adults

Unsupported or unguided online, computer, or app-based cognitive behavioural therapy	Children, young people, and adults
Apps delivering self-help strategies	Children, young people, and adults
Venting or letting off steam	Children, young people, and adults
Text messaging	Children, young people, and adults
Taking care of others	Children, young people, and adults
Positive thinking	Children, young people, and adults
Analysing and understanding your negative feelings, thoughts, and fears	Children, young adults, and adults
Confronting fears	Children, young people, and adults
Problem solving	Children, young people, and adults
Organising the day, routine, or planning	Children, young people, and adults
Personal hygiene	Children, young people, and adults
Hobbies	Children, young people, and adults
Physical exercise	Children, young people, and adults
Sport	Children, young people, and adults
Eating well or healthy diet	Children, young people, and adults
Sleep	Children, young people, and adults
Reducing consumption of stimulants and other drugs	Children, young people, and adults
Alcohol, cigarettes, or drugs as coping strategies	Children, young people, and adults
Avoiding stressful or upsetting situations	Children, young people, and adults
Muscle relaxation techniques	Children, young people, and adults
Breathing techniques	Children, young people, and adults
Visual imagery	Children, young people, and adults
Mindfulness	Children, young people, and adults
Walking	Children, young people, and adults
Spending time outdoors in nature	Children, young people, and adults
Spending time with animals or pets	Children, young people, and adults

Warm bath	Children, young people, and adults
Writing things down	Children, young people, and adults
Creative writing	Children, young people, and adults
Psychoeducation without face-to-face contact with another person	Children, young people, and adults
Psychoeducation involving contact or speaking with another person	Children, young people, and adults
Psychoeducation with group learning	Children, young people, and adults
Listening to music	Children, young people, and adults
Dance	Children, young people, and adults
Music therapy	Children, young people, and adults
Yoga	Children, young people, and adults
Tai Chi	Children, young people, and adults
Pilates	Children, young people, and adults
Drawing or painting	Children, young people, and adults
Playing a therapeutic online or computer-based game	Children, young people, and adults
Gaming	Children, young people, and adults
Laughter or humour	Children, young people, and adults
Reflexology	Children, young people, and adults
Massage	Children, young people, and adults
Light therapy	Children, young people, and adults
Prayer	Children, young people, and adults
Unsupported or unguided online acceptance and commitment therapy	Adults
Email support	Adults
Online interventions based on behavioural activation	Adults
Virtual reality therapy courses	Adults
Acceptance	Adults
Developing a balanced sense of self	Adults
Finding meaning	Adults
Meditation	Adults

Ecotherapy, green exercise, green therapy, or horticultural therapy	Adults
Going on holiday	Adults
Shopping	Adults
Herbal or plant-based remedies	Adults
Nutrients (dietary supplements)	Adults
Chocolate	Adults
Chewing gum	Adults
Avoiding certain food substances	Adults
Chinese herbal medicine	Adults
Fasciatherapy	Adults
Hydrotherapy	Adults
Fragrance	Adults
Aromatherapy	Adults
Sleep phase advance	Adults
Sleep deprivation or wake therapy	Adults
Negative air ionisation	Adults
Fortune teller	Adults
Crystal healing or charm stone	Adults
Spiritual or energy healing	Adults
Faith or religious beliefs	Adults
Faith healing	Adults

Sample

Following the initial screening of the 5558 citations obtained through the initial searches, 4546 were removed because the information in the title and abstract was sufficient to be certain that they were not relevant for this Review. The remaining 1012 studies were screened for a second time using the inclusion and exclusion criteria, which resulted in a selection of 109 papers that included both systematic reviews (n=50) and individual trial studies (n=59). In addition, we searched 38 websites of which 20 were removed for not meeting inclusion criteria. The PRISMA diagram (figure 1) shows sample selection for the scoping review.

Systematic review of effectiveness

The systematic review included consideration of all 109 papers identified in the scoping review that focused only on children and young people up the age of 24 years, excluded studies of anxiety in response to life events (such as medical treatment or transient stressors), and included only studies that reported effectiveness (ie, studies that included a comparator group). All comparative studies were considered, including systematic reviews, randomised controlled trials, and other comparative studies. Studies involving children and young

people with diagnosed depression or anxiety disorder and studies in populations with high depression or anxiety symptom scores were also included, as well as studies comparing an intervention with a non-therapeutic control (eg, waitlist or no treatment) and studies comparing an intervention with another active intervention (eg, face-to-face therapy). Studies including mixed populations with a mean age of participants older than 25 years and studies of preventive interventions in general or at-risk populations were excluded. For the purposes of this Review, we focused on outcomes that were an assessment of symptoms of anxiety, depression, or both, rather than general mental or emotional wellbeing or participants' views of the intervention (appendix).

The 109 studies identified in the scoping review were screened a second time to remove articles based on an adult population and with no reported effectiveness data. Systematic reviews were considered first and 861 individual studies across 50 systematic reviews were reviewed against the inclusion and exclusion criteria, which resulted in the identification of 34 individual studies (referenced across 21 systematic reviews). The remaining 59 individual studies identified by the scoping review were then considered against the inclusion and exclusion criteria and four were included in this Review, which resulted in a total sample of 38 studies. All included and excluded studies were reviewed by a second reviewer (MW) with agreement on all but one paper. A third member of the research team (DL) assessed this paper and a decision was made to include the study based on a consensus between team members.

Data extraction was done by one experienced reviewer (RU) and cross-checked by the second reviewer (MW); an agreement was reached on all papers. Information on participant and study characteristics and mental health outcomes were extracted directly into evidence tables comprising the following when available: study characteristics included the country, and content and structure of the intervention, control conditions, and numbers of participants were also included when available. Participant characteristics included age, gender, and type of primary disorder. Data for depression or anxiety outcomes were extracted. Depression outcomes were extracted from studies that focused on children and young people with depression and anxiety outcomes from those that focused on anxiety in these populations. Both sets of outcomes were extracted in studies that focused on the two conditions. When a systematic review provided additional analysis of the data for an individual study, this analysis was also included, which is reported in the evidence table.

The overall quality of evidence for each outcome was assessed using the GRADE approach[17] (appendix) by one experienced reviewer (RU) and 25% of these studies were randomly selected and independently assessed by a second experienced reviewer (DH) (Cohen's κ coefficient=0·76). Any discrepancies were resolved by agreement.

The following factors were considered for the classification of evidence: risk of bias (considering selection, performance, detection, attrition, and reporting bias); inconsistency of results (heterogeneity between study effect sizes, defined as I^2>50%); indirectness (poor applicability of the study population, intervention, control, or outcomes, [eg, when there was uncertainty about the degree of therapist input]); imprecision of the results (based on the width of confidence intervals, adequacy of the sample size, or both); or publication bias. After all factors had been considered, an overall evidence rating (appendix) was assigned for each intervention outcome as follows: high (high certainty that the true effect is close to the estimated); moderate (moderate certainty that the true effect is close to the estimated); low (restricted certainty of the estimated effect and the true effect might be substantially different from the estimated effect); and very low (very little certainty of the estimated effect and the true effect is likely to be substantially different from the estimated effect).[18]

Key data were extracted in relation to all 38 studies. Those studies in which standardised mean differences data were available were included in a meta-analysis. However, it was noted from the outset that these reviews were not intended primarily to do a meta-analysis, and that because of the heterogeneity of the studies and poor level of certainty of most, this analysis was done to allow an overall picture of the interventions' outcomes rather than detailed inference-building.

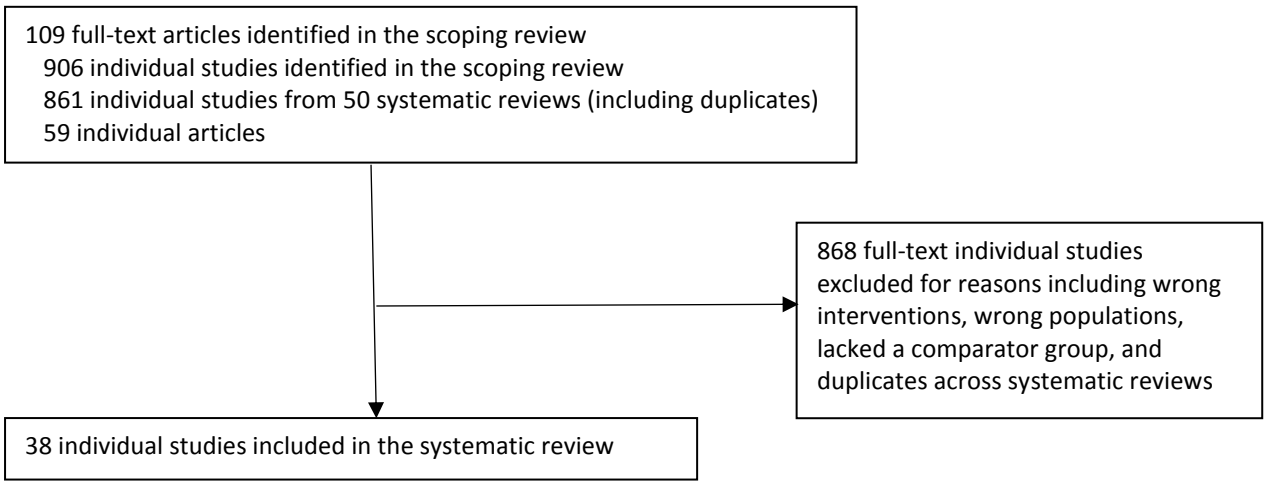

Figure 2: **PRISMA diagram for systematic review**

Statistical analysis

Because of the small number of studies and their heterogeneous nature, we did meta-analyses to provide a preliminary overview of the size of effect being found. When data were available, we considered standardised mean difference (SMD) for studies focused on children and young people with depression (n=12) separately from those focused on children and young people with anxiety (n=5). Given the small sample sizes of many studies, we applied a Hedges g correction to the SMD estimates. Analyses were done with the metan command in Stata, version 14. For depression, heterogeneity between studies included in the meta-analysis (appendix) was high (I^2=74·8%, heterogeneity χ^2 test=43·57, p<0.0001). Based on a random effects model, the overall treatment effect was –0·76 (95% CI –1·23 to –0·29) for studies focusing on depression. For anxiety, heterogeneity was low (I^2=33·33%, heterogeneity χ^2 test=6, p=0·199). The overall treatment effect was –0·21 (–0·50 to –0·09).

Results

Scoping review results

A total of 132 different approaches were identified as being used, or were suggested for use, as a means of improving symptoms of anxiety, depression, or both without input from a professional or paraprofessional; and 103 of these studies specifically focused on children or young people (figure 1, table 1, appendix). The varied studies found in the scoping stage were not grouped by intervention to provide an overview as detailed as possible and not to impose any pre-existing schema, based on professionally derived categorisations, on the results. Additionally, the information found was not censored or judged (eg, self-harm came through the Review as a strategy to cope with depression and anxiety).

Systematic review results

38 studies met the criteria for inclusion for this Review by describing seven types of approaches not mediated by a mental health professional: dietary supplements (vitamin C, omega 3, hops), light therapy, aerobic exercise, massage, contact with a dog, peer support (online), and training informed by cognitive principles, behavioural principles, or both (figure 2). Few studies included children under the age of 12 years, with most studies focused on adolescents (aged 12–18 years) or older adolescents (aged 19–25 years). There was little information available on the ethnic origin of participants included in the studies and when information was

available, ethnicity was generally dominated by white populations. Overall, more female than male participants were included in the studies (table 2).

In terms of differential evidence of effectiveness of approaches, the seven types of approach that had been tested in the literature in children or young people with anxiety or depression and not involving professionals were mostly based on cognitive or behavioural principles. 16 studies (42% of included studies) were based on cognitive or behavioural principles (15 digital and one bibliotherapy), ten focused on physical exercise, five on light therapy, three on dietary supplements, two on massage, one on online peer support, and one on the contact with a dog (table 3).

Overall, the treatment effect (when data were available) for the different self or community approaches for depression was moderate (–0·76), whereas for anxiety no overall effect was found (–0·21). Evidence suggested that light therapy can be effective for seasonal depression and that digital interventions based on attention bias modification are ineffective for anxiety. Mixed evidence was available on the effectiveness of computerised cognitive behavioural therapy for depression and anxiety, and of physical exercise for depression. All other included interventions studied (dietary supplements comprising vitamin C, omega 3, or hops extract; massage; pet-contact, and online peer support) had insufficient certainty of evidence to draw conclusions about effectiveness.

	Study type and country	Anxiety or depression (how was diagnosed)	Participants	Intervention	Comparator	Key findings	Certainty based on Grading of Recommendations Assessment, Development and Evaluation
Nemets and colleagues[19] (2006)	RCT, Israel	Depression (major depressive disorder diagnosed by a professional)	N=28 (20 completed); age 6–12 years; mean age 10 years	Omega 3 (1000 mg daily) for 16 weeks	Placebo	CDRS scores: greater improvement in depression for omega 3 group (7 [70%] of 10 children had a >50% score reduction) compared with the placebo group (no children had >50% score reduction)	Very low
Amr and colleagues[20] (2013)	RCT, Egypt	Depression (major depressive disorder diagnosed by a professional)	N=24; mean age 10 years; 63% male participants	Vitamin C used with fluoxetine	Placebo	CDRS, CDI: vitamin C group showed significantly larger decrease in depressive symptoms compared with the placebo group	Very low
Folse and colleagues[21] (1994)	Quasi-experimental study, USA	Depression (scores above threshold on BDI, threshold not reported)	N=44; median age 21 years	Pet contact 45 min per week for 7 weeks (alongside group therapy)	Waitlist (no pet); time with dog (without therapy)	BDI: pet contact without group therapy showed significantly improved depression symptoms compared with waitlist; no significant difference was found between pet with group therapy *vs* waitlist group	Very low
Kyrou and colleagues[22] (2017)	RCT, Greece	Depression and anxiety (DASS-21 cutoff, threshold not reported)	N=36; mean age 24·7 (SD 0·5); 86% female participants	Hops extract	Placebo	DASS-21: significantly greater decrease in anxiety and depression in hops *vs* placebo (9·2 [SD 7·3] *vs* 5·1 [5·9] for anxiety; 11·9 [7·9] *vs* 9·2 [7·4]; and 19·1 [8·1] *vs* 11·6 [8·1] for depression; all p<0·05)	Moderate
Sonis and colleagues[23] (1987)	RCT	Depression (scores above threshold on BDI, threshold not reported)	N=9 (five for intervention and four for comparison)	Light therapy: 2 h/day for 1 week	Relaxation audio tape	Significant improvement of depressive symptoms in children and young people with winter depression in the light therapy group but no improvement in those with non-seasonal depression; details from Hazell and colleagues[24]	Low

Swedo and colleagues[25] (1997)	RCT, USA	Depression (assessment by mental health professional)	N=28	Light therapy: 2 h in the evening and 1 h in the morning for 1 week	Clear goggles for 1 h plus 5 min of low intensity dawn simulation; sham dawn (2 lx for 5 min)	Significant improvement in parents' reports of symptoms of depression. Parent report of symptom reduction ≥50% in 20 [71%] of 28 children and young people who received light therapy *vs* 25% in the placebo group; no trend of improvement in symptoms reported by children	Low
Niederhofer and colleagues[26] (2102)	Randomised crossover trial, Germany	Depression (BDI>9)	N=28; age 14–17 years	Light therapy (2500 lx) for 1 h daily during 1 week	Placebo (50 lx)	BDI significantly decreased with light treatment; no serious adverse effects reported	Moderate
Janas-Kozik and colleagues[27] (2011)	RCT, Poland	Depression (HDRS≥17) in patients with anorexia	N=24; age 15–20 years; all female participants	Light therapy (10 000 lx) 30 min daily with CBT for 6 weeks	CBT only	HDRS ≤8 at 6 weeks: depression ratings showed significantly greater improvement in light therapy group compared with CBT only group (remission [HDRS ≤8]: 75% *vs* 8%)	Moderate
Spezzano[28] (2006, dissertation)	RCT, USA	Depression	N=40; age 18–22 years	Light therapy (10 000 lx) for 30 min per day for 3 weeks	Exposure to a deactivated negative ion generator for 30 min per day for 3 weeks	BDI: remission (>50% reduction in symptoms) greater in the light therapy group compared with control group (80% *vs* 0%); details from Hazell[24]	Very low
Hemat-Far and colleagues[29] (2012)	··	Depression	N=20; age 18–25 years	Exercise: 40–60 min of supervised running, 3 times per week	Inactive comparison	BDI: significant reduction of depression symptoms in the exercise group compared with inactive comparison group (16·6 [SD 6·9] *vs* 22·8 [4·9], SMD –0·99 [95% CI –1·93 to –0·05])	Low
McCann and colleagues[30] (1984)	··	Depression (BDI score for mild depression >11).	N=43; under-graduates; all women	Exercise: group running, jogging, or dancing for 1 h twice weekly for 10 weeks	Muscle relaxation for 15–20 min, 3 times per week (n=15); and waitlist control (n=16)	BDI: statistically significantly greater decrease in depression symptoms with aerobic exercise compared with relaxation or waitlist; exercise *vs* no treatment: 9·3 [SD 4·8] *vs* 11·85 [4·5], SMD –0·53 [95% CI –1·29 to 0·22]; exercise *vs* relaxation: 9·3 [4·8] *vs*	Low

						3·65 [7·5], SMD=0·73 [–0·02 to 1·49]	
Bonnet and colleagues[31] (2005)	RCT, USA	Depression (MDD, dysthymia, or depressive disorder), diagnosed by counselling service	N=11; mean age 23 years; 83% female participants	Exercise: walking on a treadmill for 20 min twice a week for 6 weeks, alongside CBT	CBT only (one session per week)	No significant effect of adding aerobic exercise to CBT (24·46 [SD 10·9]) *vs* CBT alone (10·5 [5·8], SMD 1·51 [95% CI 0·09–2·93], favours CBT alone); details from Cooney and colleagues[32]	Low
Nabkarsorn and colleagues[33] (2005)	RCT, Thailand	Depression (CES-D>16)	N=59; age: 18–20 years; mean age 19 years; all female participants (student nurses)	Exercise: group jogging, mild intensity, 50 min a day, 5 days a week for 8 weeks	Usual (routine) activity	CES-D: significant improvement in depression for aerobic group vs comparison group (14·4 [SD 4·12] vs 17·5 (4·23), SMD=–0·73 [95% CI –1·31 to –0·14])	Moderate
Orth[34] (1979, dissertation)	RCT, USA	Depression (MMPI, threshold not reported)	N=11; mean age 22 years; 73% male participants	Exercise: jogging for 30 min, five times per week for 4 weeks	Meditation; self-chosen activity; or self-monitoring control	DAC, MMPI: significant improvement in depression for jogging group (7 [SD 6·6]) vs comparison group (16·5 [2·12], SMD –1·25 [95% CI –3·71 to 1·21]; details from Cooney and colleagues[32]	Very low
Reuter and colleagues[35] (1984, dissertation)	··	Depression (student receiving counselling for depression)	N=18	Exercise: supervised running for at least 20 min, three times per week for 10 weeks, alongside counselling	Counselling only	BDI: significant improvement in depression for jogging compared with counselling only (5·1 [SD 4·75] vs 18·56 [7·7], SMD –2·00 [95% CI –3·19 to –0·82]); details from Cooney and colleagues[32]	Low

Brown and colleagues[36] (1992)	··	Depression (psychiatric diagnosis) in inpatients of a psychiatric unit	N=27 (11 completed); mean age 16 years; 59% male participants	Exercise: running or aerobic exercise 3 days per week for 9 weeks	Regular physical activity class	BDI: no significant difference in depressive symptoms between groups (SMD 0·78 [95% CI –0·47 to 2·04], p=0·2)	Very low
Cohen-Kahn [37] (1995, dissertation)	RCT, USA	Depression (psychiatric diagnosis) in inpatients of psychiatric unit also with conduct disorder	N=19; age 12–18 years	Exercise: outdoor high-intensity weight training programme, 60 min, three times per week for 8 weeks	Weight training below recommended intensity (40% maximum heart rate)	BDI: no significant difference between high intensity and low intensity exercise (SMD –0·14 [95% CI –0·83 to 0·54], p=0·2); details from Larun and colleagues[38]	Low
Kanner[39] (1991, dissertation)	RCT, USA	Depression (psychiatric diagnosis) for inpatients in psychiatric unit	N=68; age 8–18 years	Exercise: high-intensity aerobic (70–85% of maximum heart rate) for 1 h, three times per week during 8 weeks	Low intensity aerobic exercise	BDI: no significant difference between high intensity and low intensity exercise (SMD –0·46 [95% CI –1.12 to 0.19]; p=0.2); no significant difference between exercise and recreational therapy (SMD –0·31 [95% CI –0·97 to 0·35]; details from Larun and colleagues[38]	Moderate
Hughes and colleagues[40] (2009)	··	Depression (diagnosed MDD by a mental health professional)	N= 15; age 12–22 years	Exercise: aerobic, 90% adherence to protocol, during 12 weeks	Low-intensity stretching	CDRS-R: 100% participants responded (CDRS-R<28 or greater than 50% reduction from baseline) in the exercise group vs 70% in the comparison group; 80% remission in the exercise group (CDRS-R <28) vs 60% in the comparison group; follow-up: both exercise groups remained in remission at 6 months and 12 months	Low

Freeman and colleagues[41] (2008)	RCT, UK	Feeling "low"41 (self-determined) in response to advert	N=283 (141 intervention, 142 comparison); white (71%), Asian (10%)	Online mutual support group alongside digital information delivered over 10 weeks	Digital information about common student problems only delivered over 10 weeks	CORE-OM: no significant difference between intervention and comparison groups	Very low
Field and colleagues[42] (1992)	RCT, USA	Depression (psychiatric diagnosis) in inpatients in a psychiatric unit	N=36 (26 intervention, 10 comparison); age 7–18 years; 40% white, 40% Latino, and 20% black; all male participants	Massage received 30 min per day for 5 days	Relaxing videotapes, 30 min per day for 5 days	Depressed mood improved more in the massage intervention compared with comparison group over 5 days; no sustained benefit over 5 weeks	Very low
Field and colleagues[43] (1996)	RCT, USA	Post-partum depression (psychiatric diagnosis, BDI >16)	N=32; mean age 18 years	Ten 30-min massage sessions over 5 weeks	Ten 30-min relaxation therapy sessions over 5 weeks	Only massage group showed a reduction in self-reported depression	Very low
Stasiak and colleagues[44] (2014)	RCT, New Zealand	Depression (self-defined) self-referred to school counsellors	N=34; age 13–18 years; mean age 15 years; 71% of participants were "New Zealand Europeans", 12% were Maori, 12% Chinese or Taiwanese,	cCBT through the game The Journey: fantasy game-like with problem solving, conflict resolution, challenging unhelpful	Psychoeducation computer program delivered at school with guidebook	CDRS-R: significantly greater reduction in depression in cCBT group compared with psychoeducation group (mean change 17·6 [95% CI 14·13–21·00] vs 6·1 [2·01–10·02]); effect size 1·7; significant difference in response at the end of treatment: 88·2% for cCBT group (30% plus reduction in CDRS-R score) vs 47·1% for the comparison group, p=0·025; no significant difference	Moderate

			and 12% from Pacific Island; 59% male participants	thoughts, and relaxation techniques; seven modules (30 min) completed in school over 10 weeks		at 1-month follow-up (76·5% for cCBT vs 52·9% for comparison); no significant difference in remission at end of treatment (47·1% for cCBT vs 35·3% for comparison) or at 1 month (47·1% vs 41·2%)	
Fleming and colleagues[45] (2012)	RCT, New Zealand	Depression (CDRS-R scores over 70th percentile)	N=32 (20 intervention, 12 comparison); age 13–16 years; mean age 14·9 years; 34% of participants were Maori and 38% from Pacific Islands; 56% male participants	cCBT: fantasy game SPARX completed in seven sessions over 5 weeks	Waitlist	CDRS-R: significant differences in depression symptoms (mean change after cCBT vs waitlist at end of treatment: –14·7 vs –1·1, p<0·001; remission: 78% vs 36%, p=0·047); RADS: significant differences in depression symptoms (–4·6 for cCBT vs 3·2 for waitlist, p=0·05); intention-to-treat at 10 week follow-up: significant differences in CDRS-R (not RADS) difference for cCBT vs waitlist	Low
Merry and colleagues[46] (2012)	RCT non-inferiority trial, USA	Depression (scored 10–19 on the PHQ-9 or troubling symptoms of depression)	N=187 (94 intervention, 93 comparison); age 12–19 years; mean age 16 years; 66% female participants	cCBT: fantasy game SPARX completed over seven sessions during 4–7 weeks	Active control, treatment as usual, usually face-to-face therapy	CDRS-R: significant differences in remission for cCBT (n=31, 43·7%) vs comparison (n=19, 26·4%, p=0·03) and response rates did not differ; remission not significantly different between cCBT (66·2%, n=47) vs comparison (58·3%, n=42, p=0·33); post-treatment CDRS-R and RADS-2 at 3 months showed no difference between groups	Moderate

Clarke and colleagues[47] (2009)	RCT, USA	Depression (PHQ-8 scores or use of mental health support)	N=160 (83 intervention, 77 comparison) ; age 18–24 years; mean age 22·6 years; 83% of participants were white; 80% female participants	cCBT MoodHelper program: monitoring depression, diary, counter-thought generator, behaviour therapy tutorials, and automated feedback, used as frequently as wished by the participant	Treatment as usual	PHQ-8: at 32 weeks, significant between-group effect (n=160, d=0·20 [95% CI 0·00–0·50]) and greater effect among female participants (n=128, d=0·42 [0·09–0·77]); PHQ-8 score: 9·1 [SD 0·7] for intervention vs 10·1 (0·7) for comparison; SMD -1·42 [95% CI –1·77 to –1·07]; details from Richards and Richardson[48]	Moderate
Pinto and colleagues[49] (2013)	RCT, USA	Depression (diagnosis by mental health professional)	N=28; age 18–25 years; mean age 22 years; 83% of participants were not white; 64% female participants	cCBT avatar-based self-management via eSMART-MH at 4 weeks and 8 weeks	Information on healthy living (sleep hygiene, physical activity, and nutrition) via screen-based education	HAD-S: no significant difference between cCBT and comparison groups; at 3 months change in HADS-R mean score for cCBT from 8·1 (SD 4·73) to 6·5 (4·23) vs comparison group from 8·5 (3·82) to 8·53 (3·30)	Low
Wright and colleagues[50] (2017)	RCT feasibility trial, UK	Depression (≥20 mood and feeling questionnaire)	N=91 (45 intervention, 46 comparison); age=12–18 years; all participants were white; 33% male participants	cCBT Stressbusters completed in eight sessions	Information only intervention with self-help websites for low mood	Mood and feeling questionnaire: feasibility trial	Moderate

Deady and colleagues[51] (2016)	RCT, Australia	Depression (DASS-21 ≥7) with co-occurring alcohol problems	N=104; age 18–25 years; mean age 21·74 (SD 2·22); 60% female participants	cCBT with DEAL with four modules of 1 h each over 4 weeks with automated reminders	Information and surveys about various health concerns	DASS-21: no significantly different changes in depression scores at 6-month follow-up	Moderate
Sethi and colleagues[52] (2010)	RCT, Australia	Depression or anxiety (diagnosis by a mental health professional)	N=38; age=18–23 years; mean age=19·47 years; 66% female participants	cCBT: MoodGYM. five modules of 45 min of personal workbook and interactive game	Face-to-face CBT; MoodGYM with face-to-face CBT; or waitlist control	DASS-21: significantly greater reductions in anxiety and depression as rated by the DASS-21 in the MoodGYM with face-to-face CBT vs waitlist and MoodGYM alone, at 5 weeks; MoodGYM alone was better than waitlist for anxiety but not for depression; MoodGYM with face-to-face CBT was better than face-to -face CBT alone for anxiety but not depression	Low
Fitzpatrick and colleagues[53] (2017)	RCT, USA	Depression or anxiety (self-identified)	N=70 (34 intervention, 36 comparison); age 18–28 years; mean age 22 years; 79% participants were white and 7% were Hispanic; 67% female participants	cCBT: self-help in conversational format with Woebot up to 20 sessions over 2 weeks	Information only based on: Depression in College Students (leaflet)	PHQ-9: significantly more reduction in depression but not for anxiety for CCBT vs comparison; moderate between-groups effect size (d=0·44); effect robust after Bonferroni correction for multiple comparisons (p=0·04); no other significant differences were found between groups	Moderate
Botella and colleagues[54] (2010)	RCT, Spain	Anxiety (diagnosis of social anxiety by mental health professional)	N=127; mean age 24 years; 52% male participants	cCBT: Talk to Me (programme) exposure to	Face-to-face session, twice a week; or waitlist	SAD: significantly more improved anxiety symptoms in cCBT group vs waitlist (SMD –0·56 [95% CI –1·01 to –0·11]); cCBT was not	Low

				anxious situation through use of videos, available over 8 weeks, self-administered at home		worse compared with face-to-face: 8·29 [5·14], SMD –0·11 [–0·52 to 0·30]); treatment improvements were maintained at 1-year follow-up	
Ackerson and colleagues[55] (1998)	··	Depression (HDRS of 10+)	N=30	Cognitive bibliotherapy: Feeling Good (Burns, 1980)56 during 4 weeks	Waitlist	HDRS: at end of treatment significantly greater reduction in depression for bibliotherapy vs waitlist, SMD –2·57 (95% CI –3·69 to –1·46)	Low
Bar-Haim and colleagues[57] (2011)	RCT, Israel	Anxiety (top 50th percentile of SCARED)	N=34 (18 intervention, 16 comparison); mean age 10·1 years	Attention bias modification: dot probe task with face stimuli, four sessions of 60 min over 2 weeks	Neutral training: four 1 h sessions over 2 weeks	Some evidence of greater reduction in trait anxiety with attention bias modification training vs neutral training 2 weeks after treatment	Moderate
Waters and colleagues[58] (2013)	RCT, Australia	Anxiety (anxiety disorder interview schedule for children and parents scores ≥4)	N=37; age 7–13 years; 59% male participants	Attention bias modification: dot probe task with face stimuli, four sessions a week for 3 weeks	Attention training, four sessions a week for 3 weeks	No significant difference in clinician rated diagnoses of anxiety with attention bias modification training (50% of participants recovered) vs attention training (8% of participants recovered); anxiety scores at 3 weeks after treatment were –0·45 (95% CI –1·13 to 0·24)	Moderate
Li and colleagues[59] (2008)	RCT, China	Anxiety (social anxiety as defined on social interaction anxiety scale)	N=24; age 18–22 years; 58% male participants	Attention bias modification: dot probe task with face stimuli, one 20-min	Neutral training, one 20-min session per day for 1 week	No significant difference in social anxiety in intervention group (SMD –0·26 [95% CI –1·06 to 0·54]) at 1 week after treatment	Moderate

				session per day for 1 week			
Fu and colleagues[60] (2013)	RCT, China	Anxiety (SCARED >23)	N=28; age 12–17 years; mean age 14·5 years	Cognitive bias modification of interpretations: word fragment completion, single session	Neutral training, single session	No significant difference in anxiety between the comparison and the intervention group after the session (SMD 0·39 [95% CI –0·37 to 1·15]); details from Pennant and colleagues[61]	Moderate
Sportel and colleagues[62] (2013)	RCT, Netherlands	Anxiety (RCADS >10 girls, >9 boys)	N=240; age 12–15 years; mean age 14 years; 72% female participants	Attention bias modification: dot probe task; cognitive bias modification of interpretations: word fragment completion; two sessions per week for 10 weeks	No treatment; or group CBT delivered by a therapist, 3–10 children or young people per group, one session of 1·5 h per week, for 10 weeks	No significant difference in anxiety between intervention group and non-therapeutic comparison group 1 week after treatments (social anxiety –0·05 [95% CI –0·36 to 0·27]) or the active therapeutic comparison group (–0·20 [–0·50 to 0·11]); details from Pennant and colleagues[61]	Moderate

Table 3: **Summary of evidence from systematic review on interventions (without professional help) for children and young adults with depression and anxiety, and implications for clinical practice**

	Subcategory of intervention	**Summary of main findings**	**Implications for clinical practice**
Cognitive behavioural principles	Digital interventions based on cCBT	9 studies[44–53] in total (including one feasibility trial);[49] results from 5[44–47, 52] studies (4 moderate certainty,[44, 46, 47, 52] 1 low certainty[45]) showed that cCBT is more effective than no intervention, and might not be inferior to face-to-face therapy, for depression; results from 3 studies[48, 50, 51] (2 low certainty,[48, 51] 1 moderate certainty50) showed no effect of cCBT on depression, of which results from 2 studies[48, 51] (low certainty) showed that cCBT was more effective than no intervention, and either better or not worse than face-to-face therapy, for anxiety; and results from 1 study[50] (moderate certainty) showed no effect of cCBT compared with information only	Mixed evidence for effectiveness of digital interventions based on cCBT for depression or anxiety
Cognitive behavioural principles	Digital interventions based on ABM	Results from 5 studies[55–59] (all moderate certainty) showed that ABM does not to have an effect on children and adolescents with anxiety	Evidence for ineffectiveness of digital interventions based on ABM in reducing anxiety
Cognitive behavioural principles	Cognitive bibliotherapy	Results from 1 study[54] (low certainty) showed some evidence of the effect of cognitive bibliotherapy on depression	Insufficient evidence for or against cognitive bibliotherapy for depression

Physical exercise	..	10 studies[29–31, 33–37, 39, 40] in total; results from 6 studies[29, 30, 33–35, 40] (1 very low certainty,[34] 4 low certainty,[29, 30, 35, 40] 1 moderate certainty33) showed an effect of physical exercise on depression compared with no exercise; and results from 4 studies[31, 36, 37, 39] (1 very low certainty,[36] 2 low certainty,[31, 37] 1 moderate certainty[39]) showed no effect of physical exercise on depression	Mixed evidence for effectiveness of exercise for depression
Light therapy	..	Results from 5 studies[23,25–28] (2 moderate certainty,[26, 27] 2 low certainty,[23, 25] 1 very low certainty[28]) found light therapy effective for children with seasonal depression but no evidence for non-seasonal depression	Evidence that light therapy is effective for children with seasonal depression; insufficient evidence for light therapy effectiveness for non-seasonal depression
Dietary supplements	Vitamin C	Results from 1 study[20] (very low certainty) showed some evidence of the effect of vitamin C for depression	Insufficient evidence for or against vitamin C for depression
Dietary supplements	Omega 3	Results from 1 study[19] (very low certainty) showed some evidence of the effect of omega 3 for depression	Insufficient evidence for or against omega 3 for depression
Dietary supplements	Hops	Results from 1 study[22] (moderate certainty) showed some evidence of the effect of hops for depression and anxiety	Insufficient evidence for or against hops extract for depression and anxiety
Massage Therapy	..	Results from 2 studies[42, 43] (very low certainty) showed some evidence of the effect of massage therapy for depression	Insufficient evidence for massage therapy for depression
Peer support	Online peer support	One study[41] (very low certainty) found no evidence of the effect	Insufficient evidence for or against online

		of online peer support for depression	peer support for depression
Contact with pets	Contact with a dog	One study[21] (very low certainty) found some evidence of the effect of having contact with a dog for depression	Insufficient evidence for or against pet therapy for depression

cCBT=computerised cognitive behavioural therapy. ABM=attention bias modification.

Discussion

The present study is the first review, to our knowledge, to systematically scope and review the evidence of effectiveness of strategies for helping children and young people with depression or anxiety which are explicitly non-professionally mediated. Results from our scoping review showed a wide range of strategies for helping people with anxiety, depression, or both. Of the 132 approaches identified, 103 were referenced in relation to children and young people. Yet in the systematic review only 38 effectiveness studies were identified. Few studies looked at children under the age of 12 years, with most studies focused on adolescents (12–18 years) or older adolescents (19–25 years). Evidence on ethnically mixed populations was also scarce.

The strongest evidence was for effectiveness of light therapy for seasonal depression and of ineffectiveness of digital interventions based on attention bias modification for anxiety. Evidence of effectiveness of computerised cognitive behavioural therapy for depression and anxiety and of physical exercise for depression was mixed. Most studies had evidence of insufficient certainty to draw conclusions as to effectiveness or ineffectiveness of the intervention. Given the large number of potential strategies identified by the scoping review, our systematic review exposes a gap in the research already available on approaches to address anxiety and depression for children and young adults, without professional help. We argue that these results highlight the need for a whole new research agenda to consider these under-researched strategies. To develop this new research agenda, it might be helpful to consult with young people and those who support them (including professionals, paraprofessionals, friends, and family) to understand whether other strategies that were not captured online or in the published literature might be considered for further research. Some of the current authors (MW, LG, and KD) have started a study involving engagement with young people with anxiety or depression to identify approaches they have used and those that should be the focus for further research. The study involves both a survey and focus group work.

A key aspect of moving the agenda forward is finding a way of categorising all the different approaches identified by the scoping review. A decision was made not to impose categories at the outset on the very varied group of approaches, but we have since embarked on working with young people and professionals to develop possible categories (appendix). However, we have found that suggested categories (appendix) are not reliable and would argue that rigorous and collaborative work is required to move towards the development of a meaningful taxonomy.

A first step to achieve this taxonomy is agreeing an overarching category for all such interventions. For this study, we used the term strategies not accompanied by a professional to include interventions not covered by the existing literature; however, we believe that continuing to define them by what they are not needs to be avoided to prevent them from being further sidelined. Existing terms in use only relate to one aspect of the range of interventions of interest or carry connotations— eg, terms such as self-help or self-care do not reflect approaches that involve others and include a wider system of support, or indeed the system itself. We considered different names (appendix) and having reviewed the different options, we propose the use of the term self or community approaches to address mental health issues.

In this Review, the definitions of unguided or unsupported by a professional or paraprofessional were much stricter than those in the reviewed literature, in which self-help or similar terms often include a degree of therapeutic input. This restriction might mean we missed some professionally accompanied interventions that might still be helpful even without the professional being present, which should be considered in future research. The fact that we excluded studies of at-risk populations (ie, those without evidence of existing anxiety or depression but who were likely to develop such conditions) restricted the evidence available to our systematic review. Some of the lifestyle-related interventions, such as physical exercise, good nutrition, and massage, for which increasingly strong evidence for effectiveness in maintaining wellbeing and positive mental health is available, might also be of use to those with emerging mental health problems. However, we found little evidence of research into these strategies and very low certainty of effectiveness for our specific population (ie, children and young people with depression or anxiety).

Many of the studies included in the Review had relatively low numbers of participants; thus, statistical power was low,[63] which means that only moderate to large effects of the interventions would show

as significant. Therefore, the full potential of the included approaches might be underestimated in this Review.

Conclusions

This Review presents important findings for the field of interventions for children and young people with depression or anxiety without professional or paraprofessional input. It highlights how few non-professionally mediated interventions have been assessed and when they are evaluated the focus is skewed to digital interventions based on professionally developed models of intervention.

The research implications arising from our findings are outlined as follows. There is a need for a greater research focus on the rigorous assessment of some of the self or community strategies identified in this Review. This involves a new research agenda including the identification of helpful strategies to focus on in extensive consultation with children and young people, as well as those providing support, and collaboratively developing a taxonomy of such non-professionally mediated interventions. There is also a need to consider how different populations of children and young people might use different strategies. In particular, it might be helpful to prioritise attention on some of the most socially excluded youth, to understand differential use and the effect of self, social, or community approaches to addressing mental health issues.

This Review also has clinical implications. Those seeking to help young people with anxiety and depression can use available evidence (although limited) to help guide their advice and support shared decision making with children and young people. These decisions might include sharing the list of relevant strategies identified in the scoping review to prompt conversations about what strategies they use and find helpful. Another clinical implication is the need to support young people with anxiety and depression to find the best way to monitor and review the approaches that work best for them in addressing their mental health issues, including social or community approaches.

This Review represents the first step to unravel the notion of spontaneous improvement and considers the variety of ways that children and young people with anxiety and depression, and those seeking to help them, can best use self or community approaches to help them reach their goals in life.

Search strategy and selection criteria

Before undertaking this Review, the authors searched for other reviews and meta-analyses of strategies not accompanied by a professional, which focused particularly on addressing anxiety and depression in children and young people, and were unable to find any specific review of this topic. When registering the current Review on PROSPERO, the authors did find a review registered by Bennett and colleagues. This review, however, differed substantially from our planned review in that it focused entirely on interventions designed by mental health professionals and considered the difference in effect in terms of whether they were supported or unsupported by mental health professionals. The authors have kindly shared their draft pre-publication to which we refer in the text. For our Review, we did a systematic search for studies in English from Jan 1, 2000, to Jan 29, 2018 in the following databases: Web of Science Core Collection (Science Citation Index Expanded, Social Science Citation Index Expanded, Arts and Humanities Citation Index, Conference Proceedings Citation Index–Science edition, Conference Proceedings Citation Index–Social Science and Humanities, Emerging Sources Citation Index [2015– 18], Book Citation Index [2005–18]); MEDLINE; BIOSIS Citation Index; BIOSIS Previews; Cochrane Central Database of Controlled Trials (Cochrane Library); and SciELO Citation Index. Studies were identified with search terms for disorders of "anxiety or depression" combined with terms for "self-help", "coping strategy", and "complementary therapy".

Contributors

MW designed the study, led the writing of the paper, reviewed included and excluded studies, and provided strategic input and oversight. RU did the scoping search and developed the first draft of the scoping table with identified self-help strategies; did the systematic review (including the literature and website search, deciding inclusion and exclusion of studies, critical appraisal of included studies and data extraction); developed the evidence tables, GRADE tables, and summarised evidence findings; and drafted the methods section of the paper. KD and LG were involved in the conception and design of the study, the draft of the paper, and final approval of the manuscript. MC and DH did the second screening of reviews, and contributed to and approved the final draft of the paper. PP contributed to summarising the evidence and efficacy estimates, and provided input and final approval of the manuscript. DL was involved in

providing clinical expertise to support RU in the scoping search and systematic review, and in the drafting and final approval of the manuscript.

Declaration of interests

DL reports personal fees from Riches and Ullman LLP, during this study, and personal fees from the Child Outcomes Research Consortium and the Anna Freud National Centre for Children and Families and University College London, outside the submitted work. All remaining authors declare no competing interests.

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