

# The effectiveness of peer support from a person with lived experience of mental health challenges for young people with anxiety and depression: A systematic review

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## Research Article

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## Abstract

**Background:** Peer support has become increasingly popular in adult mental health services to complement existing care provided by clinicians with formal training. The same is now happening to support young people with anxiety and depression but it is unclear what the evidence base of peer support in this population is.

**Methods:** A systematic search was conducted with the Orygen Evidence Finder database, Embase, MEDLINE, and PsycInfo from January 1980 to July 2021. Controlled trials of interventions aimed to educate or treat young people (mean age between 14-24) to improve their mental health, which were delivered by a peer worker with lived experience of mental health challenges were included. Outcomes related to depression or anxiety were extracted. Study quality was rated using the Critical Appraisal Skills Programme.

**Results:** Eight randomised controlled trials with 1,885 participants were included, with six undertaken in high income countries. One targeted depression and anxiety, another targeted stigma-distress in youth mental illness, one aimed at first episode psychosis, four studies for preventing eating disorders and one aimed at drug misuse. One study successfully reduced anxiety and depression, another reduced depression only, four reported reductions in negative affect, with the final two measuring, but not having a significant impact on depression. Study quality was rated as 'good' overall.

**Discussion:** Despite the uptake of youth peer support globally, there is limited evidence from controlled trials of the effect of peer support related interventions on anxiety and depression. Further rigorously designed trials of peer delivered interventions for young people experiencing anxiety and depression need to be conducted with a focus on understanding the mechanisms of action underpinning peer support. In the absence of sufficient evidence, we propose potential mechanisms to guide future research into how peer support is an active ingredient for youth anxiety and depression.

## Background

Depression and anxiety are prevalent mental health challenges, with onset commonly occurring during adolescence and early adulthood (1). In an Australian survey of young people between 4–17 years of age, 6.9% had an anxiety disorder and 2.8% had major depressive disorder in the 12 months prior, which was associated with high levels of distress, self-harm, and impacts on schooling (2). Twelve-month prevalence continues to increase; for example, in an international survey of 14,000 University students, around 18.5% experienced depression and 16.7% anxiety (3). While some young people receive help from trained professionals, a large proportion experience barriers to accessing services or do not have their needs fully met by services (2). For those who do seek help, peers play a critical part in the help seeking process for young people, who often turn to friends and family first before accessing formal help (4).

The degree to which informal support from peers, such as friends and acquaintances, is helpful will depend on how capable and willing peers are to provide such support. Attempts have been made to formalise peer support for promoting mental health and wellbeing in educational settings (5). Although peer support can occur across multiple settings, there is a rapidly growing peer workforce in mental health services, especially in high income countries (6). Peer workers (also called peer support workers, peer practitioners and other terms) are positioned in mental health services and trained to draw on their lived experience of mental health challenges.

In contrast to other roles in the mental health system, the peer relationship is uniquely characterised by shared experience; the value of expertise through experience rather than clinical education and training; and reciprocity/ mutuality, whereby both individuals explicitly learn and benefit from the relationship (7). Peers are responsible for establishing and continually negotiating the 'rules' and power structures of the relationship, unlike a clinician-patient relationship (8). Five common mechanisms have been identified across various models of peer support: *lived experience*, *love labour*, which refers to assurance of the emotional safety and wellbeing of peers; *liminality* of the peer worker, describing their position between identities of 'patient' and 'clinician'; *strengths-focussed social and practical support*, and the *helper role* of the peer worker, which can facilitate their own recovery (9).

However, mental health services are not always favourable settings for peer support. A number of barriers to implementation have been identified, including role confusion (i.e. employers and/or peer workers not knowing what the role is and how it fits within the service), role diffusion (i.e. spending time doing non-peer support tasks), co-optation (i.e. tasks becoming clinical in nature), professional stigma (i.e. negative attitudes from others and lack of credibility), and lack of support (i.e. availability of peer supervision, appropriate training and professional development) (10, 11).

Despite challenges, several reviews and meta-analyses have assessed the effectiveness of peer support interventions for adults with mental health challenges, finding that client and program characteristics varied widely (12–15). For example, peer workers delivered a range of services, such as peer education, peer support, mentoring, psychoeducation, and case management, in different settings and mediums (see Table 1 for examples of peer support). Regardless, peer support interventions appear to be effective at improving hope, empowerment, increasing patient activation and self-efficacy (12, 13). While one review (15) did not report a significant difference in hope, they suggest this could be attributed to the limited amount of included studies that focused on this, and differences in methodologies and outcome measures.

Table 1  
Different Real-World Models of Peer Support

Model	Description	Delivery Methods	Specific Model Benefits	Example
One-on-one	Peer Support given between two people. Most likely involving a professional third-party to link the two people together.	Face to face, Phone, Online	Tailored for the individual.	1-on-1 Peer Support Appointments (Orygen; <a href="https://oyh.org.au/client-hub/peer-support-team/1-1-peer-support-appointments">https://oyh.org.au/client-hub/peer-support-team/1-1-peer-support-appointments</a> )
Group peer-to-peer support	Groups share a lived experience. May be structured and organised, however, no formal facilitator. Can be independent or tied to a larger network.	Face to face, Online	Tailored to the shared lived experience. Can be informal and include social activities.	Grow ( <a href="https://www.grow.org.au/">https://www.grow.org.au/</a> )
Peer-led groups	Peer-Leaders sharing their lived experience to support and educate others similar to themselves. Can be workshops or structured group peer support often tied to a larger network.	Face to face, Online	Tailored to the shared lived experience, may have educational aspects.	Hearing Voices Network ( <a href="https://www.hearing-voices.org/">https://www.hearing-voices.org/</a> )
Groups co-facilitated by peer and traditionally qualified expert (e.g. clinician)	Often involves professional health services, where a group of people with a shared lived experience are supported by both an expert and peer. Can be structured and formal.	Face to face, Online	Tailored to both group and individual, may have educational and treatment aspects.	Headspace centres ( <a href="https://headspace.org.au/headspace-centres/sunshine/youth-peer-support-at-headspace-sunshine/">https://headspace.org.au/headspace-centres/sunshine/youth-peer-support-at-headspace-sunshine/</a> )
Online peer support	Can be one on one or group format. May have professional involvement through moderators. Mostly peer-to-peer support through forums.	Online	Can be anonymous.	Side by Side (Mind; <a href="https://sidebyside.mind.org.uk/">https://sidebyside.mind.org.uk/</a> )
Adapted from: <a href="https://www.nationalvoices.org.uk/peer-support-hub/peer-support-models-explained">https://www.nationalvoices.org.uk/peer-support-hub/peer-support-models-explained</a> .				
NB: All models may be provided in either a traditional service (e.g. community mental health service) or peer-led service.				

Peer support interventions in adult populations generally did not impact quality of life, overall symptom severity, social inclusion (12), depression and anxiety symptoms (13), measures of hospitalisation (13), or service satisfaction (15). Mixed results were reported for several outcomes, including service use (12–15) and client ratings of the working relationship (14, 15). However, more recent evidence (16) has demonstrated a reduction in 12-month rate of readmission to acute care following a self-management program delivered by peer support workers after patients had left the care of mental health crisis teams. The intervention also increased time until first readmission. This recent evidence suggests that peer support may reduce hospitalisations, an important objective outcome for health services worldwide. Trachtenberg (2013) (17) found that peer support work significantly reduces hospital bed use, with the average financial savings outweighing additional costs of employing peer support workers (benefit:cost ratio of 4.76:1), highlighting the cost-effectiveness of peer support.

While these reviews focused on services for individuals with 'severe mental illnesses' (typically psychoses, bipolar disorder, severe depression), several meta-analyses have assessed peer support specifically for 'common' mental health disorders (e.g., depression and anxiety). Pfeiffer, Heisler (18) included studies comparing peer support versus treatment as usual (TAU) or group cognitive behavioural therapy (CBT) for adults experiencing depression. The peer support group demonstrated a greater reduction in depression scores compared to TAU, but not significantly different to CBT, suggesting possible efficacy at the level of established treatments (18). However, there was wide variability in patient populations, with many studies focusing on subpopulations, such as perinatal mothers. Similarly, Huang, Yan (19) reviewed randomised controlled trials (RCTs) of women with perinatal depression who received either peer support or TAU. For those who received peer support, depression scores were lower than controls, most participants reported intervention satisfaction, and it was cost-effective. Likewise, Field, Diego (20) reported that for women with prenatal depression who received group peer support or group interpersonal psychotherapy, both groups demonstrated significantly lower depression symptoms and cortisol levels (with a greater decrease in cortisol for the peer support group), despite the former group having a lower socio-economic status (SES), higher baseline depression scores, and shorter group sessions. Altogether, the available evidence suggests that peer work is a safe, effective, flexible and cost-effective intervention for adults, which promotes hope, empowerment, patient activation and self-efficacy, and reduces hospitalisations.

Previous work has focused foremost on adult populations, and there is a paucity of literature regarding young people. Using both peer-reviewed and grey literature, Gopalan and colleagues (2017) (21) undertook a United States-specific scoping review of youth peer support services and research for young people under 25 years old with emotional or behavioural problems. In total, 43 articles were identified (only three were randomised controlled trials), with a range of different peer support models, including differences in the program goals, the degree to which peer workers were involved, and the roles they undertook. There was also variation within the peer worker roles, including core competencies, training and supervision received by peer workers. Outside of the USA, the CHOICE project (22, 23) in Australia, studied the impact of youth peer workers supporting consumers (aged 16 to 25 years) to take part in shared decision making regarding their mental health treatment. Peer workers used a co-designed shared decision-making tool with clients before their appointment to see an intake worker (clinician). Young people receiving the intervention felt more involved in treatment decisions with intake workers compared to the comparison group. The project did not measure anxiety and depression symptoms, as the focus was on shared decision making related outcomes; however, it was conducted in a youth mental health service where the majority of clients present with anxiety and/or depression (*headspace* (24)). Overall, the findings support the use of peer support in promoting shared decision-making.

While the majority of work in this area has focused upon providing peer work within existing mental health services, an additional challenge is that many young people do not access formal services for their mental health concerns (25). Given that connections with peers are especially important during this developmental period, formal and informal peer support may represent an alternative avenue for young people to access support. For example, Reavley et al. (2011) (4) surveyed 275 young people with a mental health disorder in Australia to examine factors related to help-seeking and self-help behaviours. Participants most frequently sought help from family (77% of respondents) and close friends (73%), more so than general practitioners (53%). Peer workers may act as a bridge between, for example, untrained friends, and accessing mental health services.

Therefore, peer support is a strong candidate intervention for young people with depression and anxiety, since people in this age group experience high rates of these mental health concerns in particular, and they may be more receptive to seeking help from peers before or during engagement with formal services. The aim of this systematic review was to understand the effectiveness of peer support for youth depression and anxiety (aged 14–24) as either a primary or comorbid mental health complaint, including the contexts in which it works, who it does and does not work for, and how it works.

## Methods

### Search strategy and information sources

This systematic review involved two search strategies. First, we utilised the Orygen Evidence Finder (OEF) database (26). The OEF is a repository for all available controlled trials (including randomised and non-randomised), systematic reviews and meta analyses that evaluate prevention and treatment strategies for common mental disorders and related challenges that have their peak onset during adolescence and early adulthood (mean age 12–25). These include depression, anxiety, bipolar disorder, substance use disorder, eating disorders, psychotic disorders, and self-harming behaviours. The OEF is an online database publicly available for basic searching. However, for this review we had access to the backend of the system, which allowed us to construct a detailed and reproducible search strategy focused on peer support related terms. Box 1 lists the search terms applied to title, abstract, keyword, and label fields of each publication record within the OEF. The OEF currently contains studies published between 1980 and 30 June 2020, therefore, we undertook a second search process to retrieve studies published to 30 June 2021. This search strategy was conducted in the Embase, MEDLINE and Psycinfo databases (full search strategy in Supplementary File 1). Finally, we conducted backward and forward reference searches through September 2021.

#1 [peer*]
#2 [consumer OR patient OR service user OR survivor OR client]
#3 [operat* OR led OR run OR deliver* OR managed OR support* OR conducted OR assisted]
#4 [advoca*OR helper OR mentor OR leader OR counsel* OR educator OR aide OR consultant OR specialist OR train* OR advisor OR facilitat* OR provide*]
#5 #2 AND #3
#6 #2 AND #4
#7 #1 OR #5 OR 6

Box 1: Peer support search terms

### Eligibility criteria

We included studies that met the following inclusion criteria:

1. Mean age of participants between 14–24 years;
2. A controlled trial (either randomised or non-randomised);
3. The intervention involved provision of peer support by someone with lived experience of mental health challenges;
4. Reports at least one outcome measure related to depression or anxiety;
5. Full text available in English.

### Study selection

*Covidence* was used to manage screening (27); after removing duplicates, two reviewers (SC, EB) independently screened all titles/abstracts and resulting full texts, with disagreements resolved by a third reviewer (MBS).

### Data extraction

Data were extracted from eligible studies into a standardised template covering intervention details, attributes of peer workers, and outcomes measured. A narrative summary of the findings was used to present the data outlined in the data extraction table. Studies were assessed for quality using the Critical Appraisal Skills Programme (CASP; (28)).

### Registration

Time constraints prohibited us from registering our protocol. We have nonetheless ensured reporting is in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (29).

## **Lived experience involvement and expert interviews**

An experienced youth peer worker contributed to the initial proposal, but was unable to work on the review. An international steering group of youth peer workers and young people who have received peer support work was established and convened by a lived experience expert (RM). These consisted of 10 members aged 18–24, from four countries, including Australia (4), Canada (4), Ireland (1), and Singapore (1). The groups met for two hours fortnightly for the duration of the project. A summary of the contributions from the steering group is provided in Supplementary File 2. Additionally, interviews were conducted with nine experts from eight countries, including Australia, Brazil, Canada, India, Kenya, Nigeria, the United States, and Zambia. A summary of the contributions from expert interviews is provided in Supplementary File 3.

## **Results**

### **Search results**

The searches retrieved 1,500 papers in total (see Fig. 1 for PRISMA flow diagram; (29)). Following removal of 94 duplicates, 1,406 papers were screened for eligibility. Of these, 1,226 were excluded following title and abstract screening, with a further 172 papers excluded after full text screening. Reasons for exclusion are reported in Fig. 1. In total, eight trials met inclusion criteria.

### **Study characteristics**

Table 2 shows the characteristics of all eight studies, including sample, peer worker, and intervention characteristics. Of the eight studies identified, three were undertaken in North America, two in Oceania, and one each in Asia, Europe, and South America. Only one trial tested an intervention designed for anxiety and depression. The rest were designed for young people at risk of eating disorders or body image concerns ( $n = 4$ ); any mental illness ( $n = 1$ ), alcohol and drug misuse ( $n = 1$ ), and first episode psychosis ( $n = 1$ ). All eight studies RCTs, including 1,885 participants. An overview of trial results is presented in Table 3 and a full list of outcomes is listed in Supplementary File 4.

Table 2  
Summary of study characteristic of included trials, including details of peer worker/s

Article	Country	N; gender	Mean Age (SD)	Sample	Intervention/s Detail	Control	Peer-Worker	Requirements	Training
<b>Depression &amp; Anxiety</b>									
Ellis et al. (2011)	Australia	39; 77% female, 23% male	19.67 (1.66)	University Students experiencing low-to-moderate depression & anxiety	3 x 1-hour sessions over 3 weeks working through the content of the MoodGarden website:  a. Tools for self-management  b. Bulletins on lifestyle management  c. Discussions on effective treatments  d. Messageboard for peer-based support  e. Blogs and Charts	1. MoodGym  Five modules of online CBT:  a. Introduction to CBT  b. Reducing dysfunctional thinking  c. Overcoming negative feelings  d. Identifying stress and relaxation  Problem-solving strategies and enhancing relationships  Control: No intervention	Lived experience with a mood disorder		Not reported
Mulfinger et al. (2018)	Germany	98; 69% female, non-binary N/A	15.75 (1.15)	Inpatients and outpatients with Anxiety and/or Depression	3 x 2-hour sessions weekly over 3 weeks of Honest, Open, Proud (HOP):  Themes:  a. Challenging beliefs or self-stigma  b. Pros & cons of disclosure  c. The right person  d. Telling one's story  e. Role of solidarity and peer support  Workbooks contained vignettes, first-person accounts, worksheets, tables and role-plays.  1 young expert and 1 young peer worker	TAU	Young adult peer with lived experience of Mental Illness		Peer facilitators were trained by researchers and conducted a practice session.
<b>First Episode Psychosis</b>									

Article	Country	N; gender	Mean Age (SD)	Sample	Intervention/s Detail	Control	Peer-Worker	
Alvarez-Jimenez et al. (2021)	Australia	170; 47.1% female, 52.9% male	20.91 (2.88)	Young people in recovery of First Episode Psychosis, exiting early intervention service	Mean Number of Individual posts and/or comments = 21.49 (SD = 41.71) over 18 months (Mean = 8.15 (SD = 5.65)) of Online Social Network:  a. Icebreakers  b. user-generated threads  c. content related to mental health  d. content of general interest  Vocational training:  a. Ask the expert  b. individualized online vocational support  Online Therapy w/ health professional:  a. Online pathways – distinct themes on recovery  b. Online Steps - interactive therapy modules	Control: TAU	Peer workers had lived experience in mental illness.	Not Reported
<b>Prevention in Eating Disorders</b>								
Becker et al. (2010)	USA	102; 100% female	18.73 (0.72)	University students (Freshman or Sophomore)	2 x 2-hour sessions over  2 weeks of Cognitive Dissonance:  a. Group Discussions on the thin ideal  b. Group Brainstorming on cost on the thin ideal  c. Homework body appreciation  d. Role-plays on resisting the thin ideal  e. Shared lived experiences from peer-leaders and peers in the sessions.	1. Media Advocacy:  a. Watch Videos  b. Group Discussions of thin ideal  c. Group Brainstorming cost on the thin ideal  d. Food & exercise diaries	Peer-leaders with past participation in the program and a member or the sorority	4.5 hours experiential training sessions. Peer-leaders trained in teams (3–4 peer-leaders at a time).

Article	Country	N; gender	Mean Age (SD)	Sample	Intervention/s Detail	Control	Peer-Worker	
Ciao et al. (2021)	USA	Trial 1 N = 98; female 80% male 14% non-binary 6%  Trial 2 N = 141; 80% female 15% male 5% non-binary	Trial 1 20.39 (4.12)  Trial 2 19.66 (2.53)	University students interested in a body acceptance program	2 x 2-hour group sessions over 2 weeks of the 'EVERYbody Project' involving 4–9 participants  a. Group Discussions b. Role-Plays c. Group Activities  Trial 1: 1 x Expert-leader & 2 peer-leaders  Trial 2: 3–4 x peer-leaders	Trial 1: Control: No intervention  Trial 2:  Video Intervention  a. Watch Videos  b. Reflective Writing	Peer-leaders with past participation in the female program	Training followed protocol used in the peer-led 'Body Project'  Trial 1  2 days of training (16 hours).  Trial 2  2 days of training (16 hours)  with discussion on group facilitation skills and role plays on difficult diverse situations.
Kilpela et al. (2016)	USA	180; 62% female, 38% male	19.9 (1.2)	University students	2 x 2-hour sessions over 2 weeks of 'Body Project'  a. Group Discussions on the thin ideal contrasting healthy ideal, the origin of the thin-ideal, past pressures  b. Group Brainstorming on cost on the thin ideal and combating the thin-ideal  c. Homework body appreciation, writing to a young person, challenging own behaviour  d. Role-plays on resisting the thin ideal  e. Shared lived experiences from peer-leaders and peers in the sessions.	Control: Waitlist	Peer-leaders with past participation in the program	Trainer to Trainer method: Experience peer-leaders in the program trained new peer-leaders over two-days
Resendel et al. (2021)	Brazil	74; 100% female	20.5 (2.02)	University students	4 x 60-minute sessions over 4 weeks of 'Body Project' led by two peer-leaders  a. Group discussions on the thin-ideal, body appreciation/concerns  b. Group brainstorming on the cost of the thin-ideal  c. Homework sessions on body appreciation  d. Role-plays on resisting the thin-ideal  e. Engaged in further body activism	Control: No intervention	Have experience in Intuitive Eating and past body image concerns and currently a university student	References the Body Project website: Therefore, training on the concept and rationale of the body project, in group discussions and role plays, using the manual for guidance. Possibly some practice runs with feedback from supervisors.

Article	Country	N; gender	Mean Age (SD)	Sample	Intervention/s Detail	Control	Peer-Worker
German et al. (2012)	Thailand	983; 27.3% female 72.7% male	Median 19	Used Methamphetamine & engaged in sex at least 3 times in the last 3 months, at a Research Community Centre	7 x 1.5-2.5hr group session twice weekly over 1 month of 'Peer Education', in groups of 8-12 participants: a. Drug use on individuals b. Drug use and Social influences c. Drug use and Sex d. Drug use and Risk Behaviours e. Family and Community f. Community Project g. Review and Graduation 2 boosters (3 & 6-month mark).	7 x 1.5-2.5hr group session twice weekly over 1 month of 'Life Skills', in groups of 8-12 participants: a. Understanding Life b. Decision Making Skills and Old Friends/New Friends c. Danger of Drug Use d. Sexually Infectious Diseases e. How Important is Stress? f. Emotion Management and Life Goals g. Envelope of Goodness and Graduation Network groups for participants in both Peer Education and Life Skills received no intervention	Early 20s, participated in an earlier study as part of the ethnography team Researchers trained peer facilitators in a 1 week long intensive training session on building a prosocial role and to increase positive communication interactions with peers.

Table 3  
Summary results of anxiety and depression outcomes of included trials

	Ellis et al. (2011)	Mulfinger et al. (2018)	Alvarez-Jimenez et al. (2021)	Becker et al. (2010)	Ciao et al. (2021)	Kipela et al. (2016)	Resende et al. (2021)	German et al. (2012)
Measures	Anxiety and Depression (DASS-21);	Depression (CESDS)	Depression (CDSS)	Negative affect (PANAS-X)	Negative Affect (PANAS)	Negative Affect (PANAS)	Negative Affect (PANAS-B)	Depression (CESD)
Groups	Online Peer Support (n = 13) Online CBT (n = 13) Controls (n = 13)	HOP (n = 49) Control (TAU; n = 49)	Horyzons + TAU (n = 84) Control (TAU; n = 86)	Cognitive Dissonance (n = 53) Control (Media Advocacy; n = 49)	Trial 1: Everybody Project (w/ expert - and peer-leaders; n = 48) Control (Waitlist; n = 50) Trial 2: Everybody Project (w/ peer-leaders only; n = 65) Control (Video Intervention; n = 76)	Mixed-Gender (n = 77, Female-Only (n = 65) Control (waitlist; n = 38)	Body Project (n = 38) Control (n = 36)	Peer Education (n = 209) Control (Network Peer Education; n = 286) Life Skills (n = 206) Control (Network Life Skills; n = 282)
<b>Anxiety and Depression Results</b>								
Anxiety	<b>Y*</b> ; online CBT, $d = 0.99$ , $p = .03$ , and online peer support, $d = 0.95$ , $p = .01$ , compared to controls.							
Depression	ns	ns/ <b>Y* FU6W</b> ; HOP, $d = 0.72$ , $p < .001$ ) compared to controls	ns					<b>Y*</b> Intervention: post-intervention mean difference = $-4.5251$ , $SE = 0.7279$ ; $p < 0.0001$ ), compared to baseline. Control: ns

Note: Y\*(bolded) = significant result, ns = non-significant, FU = Follow-up, (number)W/M = number of weeks or months, Note: DASS-21 = Depression, Anxiety and Stress Scale, CESDS = Center for Epidemiologic Studies Depression Scale, CDSS = Calgary Depression Scale for Schizophrenia, PANSS = Positive and Negative Syndrome Scale, PANASX = Positive and Negative Affect Schedule - Revised, PANAS = Positive and Negative Affect Schedule, PANAS-B = Positive and Negative Affect Schedule, CESD = Centers for Epidemiological Studies Depression Scale.

a Kipela et al. (2016) found negative affect only decreased with the males in their mixed-gender group, not with the females in the mixed-gender group or with the female only group.

b Resende et al. (2021) found negative affect only decreased at the 24-week follow-up, not at post-intervention, or four weeks follow-up.

Ellis et al. (2011)	Mulfinger et al. (2018)	Alvarez-Jimenez et al. (2021)	Becker et al. (2010)	Ciao et al. (2021)	Kipela et al. (2016)	Resende et al. (2021)	German et al. (2012)
Negative Affect			<p><b>Y*</b> Intervention: postintervention, <math>d = 0.51, p &lt; .05</math>;</p> <p>8 weeks <math>d = 0.25, p &lt; .05</math>;</p> <p>8 months <math>d = 0.35, p &lt; .05</math>;</p> <p>14 months <math>d = 0.48, p &lt; .05</math>, compared to baseline.</p> <p>Control: postintervention, ns;</p> <p>8 weeks, ns;</p> <p>8 months <math>d = 0.58, p &lt; .05</math>;</p> <p>14 months <math>d = 0.34, p &lt; .05</math>, compared to baseline.</p>	<p><b>Y*</b> Trial 1 EVERYbody (w/ expert - and peer-leaders): postintervention <math>d = 0.56, p &lt; .05</math>;</p> <p>1-month <math>d = 0.42, p &lt; .05</math>, compared to controls;</p> <p>group x time interaction (<math>b = -0.03, t = -4.45, p &lt; .0001</math>)</p> <p>Trial 2 EVERYbody (w/ peer-leaders only): postintervention <math>d = 0.01, p &lt; .05</math>;</p> <p>1-month <math>d = 0.10, p &lt; .05</math> compared to controls;</p> <p>group x time interaction, ns.</p>	<p><b>Y**a</b> Males</p> <p>Intervention:</p> <p>Males in Mixed Gender group: postintervention, <math>d = 0.40, p = 0.0080</math>;</p> <p>2-month ns;</p> <p>6-month ns, compared to controls.</p> <p>Females in Mixed Gender group: ns.</p> <p>Females Intervention:</p> <p>Female Only group: ns.</p>	<p>ns/<b>Y**b</b> FU24W Intervention: <math>d = 0.60, p &lt; .05</math> compared to controls.</p>	

*Note:* **Y\***(bolded) = significant result, ns = non-significant, FU = Follow-up, (number)W/M = number of weeks or months, Note: DASS-21 = Depression, Anxiety and Stress Scale, CESDS = Center for Epidemiologic Studies Depression Scale, CDSS = Calgary Depression Scale for Schizophrenia, PANSS = Positive and Negative Syndrome Scale, PANASX = Positive and Negative Affect Schedule – Revised, PANAS = Positive and Negative Affect Schedule, PANAS-B = Positive and Negative Affect Schedule, CESD = Centers for Epidemiological Studies Depression Scale.

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b Resende et al. (2021) found negative affect only decreased at the 24-week follow-up, not at post-intervention, or four weeks follow-up.

	Ellis et al. (2011)	Mulfinger et al. (2018)	Alvarez-Jimenez et al. (2021)	Becker et al. (2010)	Ciao et al. (2021)	Kipela et al. (2016)	Resende et al. (2021)	German et al. (2012)
Participant Feedback	<p>Online peer support compared to online CBT:</p> <ul style="list-style-type: none"> <li>• More helpful,</li> <li>• More enjoyable</li> <li>• Equally recommended</li> <li>• One-third reported they would continue using online peer support</li> <li>• Two-thirds reported they would continue using online CBT – possibly because the online CBT group were still feeling more anxious than the online peer-support group.</li> </ul>	<ul style="list-style-type: none"> <li>• Peer-leader was viewed as an inspiring role-model</li> <li>• Enjoyed learning about their real-life experiences.</li> <li>• Relief to talk about disclosure in a safe space.</li> <li>• facilitated openness,</li> </ul> <p>trust, and respect within the group interactions</p> <ul style="list-style-type: none"> <li>• Some materials were deemed too theoretical, demanding, and hard to concentrate on or too detailed.</li> </ul>	<ul style="list-style-type: none"> <li>• Some participants had positive experiences of social connection on Horyzons.</li> <li>• Others did not due to social anxiety, paranoia and confusion within the social network of Horyzons.</li> </ul>	<ul style="list-style-type: none"> <li>• Participants preferred the Cognitive Dissonance intervention over the Control intervention.</li> <li>• Both interventions were deemed useful</li> <li>• Suggested the Control intervention may be a good follow up or refresher intervention.</li> </ul>	<ul style="list-style-type: none"> <li>• Experts were able to address diverse body images (various gender-, sexual-, and racial-identities) better than peer-leaders.</li> <li>• Peer-leaders lacked lived experience in all diverse body images, which may have hindered them in connecting with all the participants.</li> </ul>	<ul style="list-style-type: none"> <li>• Adding males to the Body Project created a Mixed Gender Group, which established a warmer collaborative (versus activating) vibe,</li> <li>• Normally the Body Project creates an angry vibe against the thin-ideal through the historical struggle women have had against the thin-ideal.</li> <li>• This warmer vibe was carried over to the Female Only Group, which may explain a lack of effects among females.</li> </ul>	Not reported	<p>The research site (known as “House of Friends”):</p> <ul style="list-style-type: none"> <li>• Allowed participants to gather and socialise informally with each other.</li> <li>• Was a safe place,</li> </ul> <p>as there was no</p> <p>social stigma or fear of being arrested, which was common for participants in the general community.</p>
<p><i>Note:</i> Y*(bolded) = significant result, ns = non-significant, FU = Follow-up, (number)W/M = number of weeks or months, Note: DASS-21 = Depression, Anxiety and Stress Scale, CESDS = Center for Epidemiologic Studies Depression Scale, CDSS = Calgary Depression Scale for Schizophrenia, PANSS = Positive and Negative Syndrome Scale, PANASX = Positive and Negative Affect Schedule – Revised, PANAS = Positive and Negative Affect Schedule, PANAS-B = Positive and Negative Affect Schedule, CESD = Centers for Epidemiological Studies Depression Scale.</p>								
<p>a Kipela et al. (2016) found negative affect only decreased with the males in their mixed-gender group, not with the females in the mixed-gender group or with the female only group.</p>								
<p>b Resende et al. (2021) found negative affect only decreased at the 24-week follow-up, not at post-intervention, or four weeks follow-up.</p>								

## Depression and anxiety

The first study on depression and anxiety was undertaken in Australia with University students, experiencing low-to-moderate depression & anxiety (30). Students were randomised into one of two experimental groups or a no-intervention control group. The first group engaged in online CBT via ‘MoodGym’ and the second group engaged in an online peer support group via ‘MoodGarden’ (see Table 2 for intervention characteristics). ‘MoodGarden’ involved

access to the established non-profit website run by volunteers with lived experience of a mood disorder. Peer workers mediated the message board that the participants posted on. Compared to the control group, post-intervention measures showed that the online CBT and online peer support significantly reduced anxiety symptoms (see Table 3). However, neither intervention affected depression symptoms. 'MoodGarden' participants reported higher perceived online social support compared to the 'MoodGym' and control groups (see Supplementary File 4).

## Any mental illness

The second study (31) was undertaken in Germany with teenagers (mean age 16) experiencing depression and anxiety, mainly in inpatient settings. They compared an intervention known as Honest, Open, Proud (HOP) to a treatment as usual (TAU) control group (see Table 2 for intervention details). This group program was co-facilitated by a peer and aimed to support individuals in their decisions to disclose their mental illness and therefore reduce the impact of stigma for adolescents. Depressive symptoms were measured as secondary outcomes and showed no reduction post-intervention; however, at six-week follow-up, depressive symptoms had significantly reduced (see Table 3). There was a significant difference between groups in favour of the intervention group for the primary endpoints (reduction in stigma stress post intervention and improvement in quality of life at follow up). Other positive effects found that may overlap with peer support mechanisms included help-seeking intentions (family/friends, professionals), stage of recovery, and empowerment (self-esteem, optimism; see Supplementary File 4). No effect was found for social withdrawal or hopelessness. Attrition rates between post-intervention and follow-up were the same for both groups ( $n = 11$ ); reasons included being uncontactable or refusing to complete follow-up.

This study was the only included study to conduct a cost-effectiveness analysis aimed at calculating value for money of delivery of the intervention. HOP's total costs, including, for example, the training and employment of peers and professionals and overhead costs, were calculated and compared to British annual costs per young person (aged 5 to 15) where the National Institute for Health and Care Excellence (NICE) uses a cost-effectiveness threshold of £20,000–£30,000/QALY (32). Based on the utility gains (0.044), HOPS was deemed to be a cost-effective intervention, even if those gains only lasted for two months (at a cost of €20,533/QALY), but more so if the gains continued at six months (€6,969/QALY).

## First Episode Psychosis

One study that assessed depression in young people with a recent onset psychotic disorder was identified (33). The intervention 'Horizons' used the 'Moderated Online Social Therapy' model, which integrates interactive online therapy, peer-to-peer online social networking, peer moderation, and expert support (see Table 2). While the intervention was shown to improve vocational functioning and reduce hospital emergency service use compared to TAU, no effect was found for depression symptoms ( $p = .42$ ) or any peer-support related constructs (e.g. Loneliness; see Supplementary File 4).

## Eating disorders

Four studies tested slightly different versions of a lived-experience peer-worker led intervention known as the Body Project Collaborative (see Table 2 for intervention details), which aims to prevent eating disorders and body dissatisfaction. All studies were successful in reducing body image concerns and eating disorder risk. All involved University students, three in the USA (34–36), and one in Brazil (37). All utilised the Positive and Negative Affect Schedule, with the effect of these interventions on negative affect varying across trials. Table 3 shows two (34, 35) found significant reduction of negative affect over time. Resende and colleagues (37) found an increase in self-esteem at post-intervention and 24 weeks (see Supplementary File 4). However, they only found a significant reduction in negative affect at 24 weeks. Kilpela, Blomquist (36) reported a significant reduction of negative affect only in male participants. Overall peer-led interventions across all studies had significantly better outcomes compared to control groups.

## Substance use

The final trial targeted young methamphetamine users in Thailand (38). Secondary analysis of the trial demonstrated a significant effect for depression symptoms; however, this was not the primary aim of the trial. The intervention was a 'Peer Education' group that aimed to teach participants to reduce their methamphetamine use and sexual risk behaviours as well as how to communicate learnings from the group with their methamphetamine using peers or sexual partners. The authors hypothesised the intervention had a significant impact on depression (see Table 3) due to the intervention encouraged participants to build a prosocial role and increase positive communication with peers and family members. The emphasis on social relationships and contributing to the community may have affected feelings of isolation and stigma, particularly within a collectivist culture such as Thailand.

## Quality of studies

Supplementary File 5 shows the overall quality of the studies was good using the Critical Appraisal Skills Programme. Importantly, six studies were partially or fully unclear on blinding procedures. Four studies did not account for missing data and four studies did not conduct *a priori* power analyses. No measures of fidelity were used.

## Discussion

### Overall findings

In this review, we aimed to identify and describe studies of peer support for young people to improve symptoms of depression or anxiety. We sought to investigate in which ways, in which contexts, and for whom, peer support appears to work or not work. Despite there being a range of controlled trials testing peer support interventions for adults with mental health challenges such as anxiety and depression (39–41), very few have been conducted in young people. We were only able to identify two trials specifically targeting anxiety or depression, and there were limitations across studies that we will now discuss.

In total, six studies were conducted in high income countries and two in low- and middle-income countries. The most common setting was Universities (5 studies), with only two mental health service settings and one research community centre. Aside from the considerable lack of geographical diversity, the settings also limit our knowledge of the context in which peer support might work, given that only a small proportion of young people attend University or mental health services. Many studies in a broader range of settings were excluded because the peer worker role did not require lived experience. The variability of this requirement, which is mirrored in research with adults (12–14), is just one factor that is indicative of the generally heterogeneous array of definitions of peer support, in terms of the setting, intervention, and peer. We note that the core values of peer support are based on lived experience, which is why this was deemed an essential criterion for inclusion.

## **In what contexts does peer support work?**

Importantly, two studies (30, 33) successfully and safely tested online peer support interventions. Understanding how peer support can be delivered remotely is important in the context of the current COVID-19 global pandemic, and complements work done on peer-to-peer support (42). As young people globally grapple with the increase in social isolation, uncertainty about the future, and other experiences that are related to poorer mental health, having sufficient workforce supply to serve the demand of those seeking help is essential. Although it should not be seen as ‘cheap labour’, with the right support structures in place (23), peer workers are able to be trained more readily than other professions. One study specifically assessed and reported no adverse effects (34); participant feedback from the other studies were generally good (see Table 3) and successful interventions were found to be acceptable, suitable, and cost-effective, in line with adult reviews (12, 14, 17, 39). It is also easier to ensure diversity in the workforce through peer support, as the barriers to formal education pathways that exist for many minority groups are less prominent in peer work. As our steering group members pointed out, better representation from minority groups in the workforce is more likely to result in culturally safer environments.

## **For whom does peer support work?**

In terms of understanding who peer support may or may not work for, we were unable to answer this. Only two studies focused specifically on depression and anxiety, with the rest focused on relapse prevention after first episode psychosis, substance use disorders and four focused on the prevention of eating disorders. In line with adult literature, depression related measures were more commonly used and anxiety related measures were largely absent (39–41). Unlike the adult peer support literature as reviewed by King, Simmons (12), the studies we found in youth settings did not aim to measure the impact of peer support, any overlapping measures such as hope and empowerment were tied back to their initial study aims.

Further, the mean age of participants in all but one trial fell in the young adult range (19–21 years). Peer support has been widely tested in educational settings with children and adolescents; however, peers are not required to have lived experience, meaning they don’t contribute to our understanding of lived experience as an active ingredient or align with the core principles of peer support in a mental health context. Developing and testing lived experience-based peer support in younger groups requires careful consideration of what age one might expect a peer worker to be (43, 44). While having a peer worker be as close in age as possible, it also makes good sense to have slightly older peer workers who have experienced both relevant mental health challenges and some experiences of treatment and recovery. Overall, it is not yet discernible who peer support does and does not work for.

## **Why might peer support work?**

Specific mechanisms of action for peer support in youth depression and anxiety are yet to be proposed and tested. The lack of clarity in the evidence we did find (e.g. definition of a peer worker, what the intervention is, and what peer support values or principles were adhered to) makes it even more difficult to understand mechanisms. As a starting point to address this gap, we drew on the findings of this review and previous literature from adults (9, 12, 13, 15, 45, 46), together with input from the steering groups and expert interviews that informed this review, to propose a preliminary model for the mechanisms of action regarding peer support for youth anxiety and depression (see Fig. 2). However, empirical work that tests this proposed model is required.

Other critical gaps in the literature include exploring the best ways to test the ‘effectiveness’ of peer support interventions in this area. When our systematic review failed to identify many studies, we searched for existing youth peer support programs and checked for any related research or evaluation. We found a number of programs operating in a range of countries, although we did not find any associated evaluation, suggesting a lost opportunity to properly understand how these programs are helping young people who experience depression and anxiety. In contrast, the steering groups responded optimistically, suggesting there is a wealth of knowledge to draw on from the programs run by groups who are out helping young people on the ground.

Harnessing this knowledge will require careful consideration of what types of research designs and methodologies are appropriate for peer support (47). Much of mental health research is based on a medical/clinical model that focuses on individual deficits (48). This is at odds with both the theoretical underpinnings of peer support models (e.g. Intentional Peer Support) (47) and also the collectivist nature of many cultures worldwide, as recognised by one of the trials identified in our review (38). Focusing on the programs already operating, mainly in high income countries, is essential in order to capture the lessons already learned about how people with lived experience of anxiety and depression can help their peers. Understanding how peer support programs operate effectively in low resource settings and in varying cultural contexts, yet retain relevant core values of peer support, is equally as important. Furthermore, peer support has also been associated with engaging in generative actions such as helping others, changing organisations and systems, and sharing personal stories (49), which can lead to a range of psychosocial benefits on both the individual and relational interpersonal levels (7, 15).

Regardless of the research setting and cultural context, this review highlighted a number of areas requiring clarity (see Supplementary File 6). First of all, role-specific definitions of *peer* and *lived experience* are vital, including relevancy of age, characteristics and type of lived experience (e.g. experience of mental health challenges, receipt of treatment, and recovery). Secondly, detailed descriptions of peer support interventions are required that explain: 1) the theoretical underpinning, core values and principles of the intervention; 2) how fidelity to is assessed; 3) the nature of the role and how the peer worker was supported to adhere to these values and principles in their role (i.e. training and supervision). Further, given that a number of barriers to implementing peer

work in practice have been identified in adult settings (e.g. (10)) and are likely exacerbated in youth settings (43, 44), future research should use designs incorporating implementation science methodologies from the outset. There are also unresolved issues beyond the scope of research, such as what happens to youth peer workers when they age out of the age-related role requirements. All of these elements were generally lacking in the literature we reviewed, but are critical for moving the field forward.

Lastly, only two of the studies used a co-design approach to intervention development. These interventions were both digital in nature, which is unsurprising given that user-centred design methodologies are common in the development of digital solutions. Involving young people with lived experience of anxiety and depression in all aspects of peer support intervention design and testing will improve the quality and significance of such endeavours (50). Similarly, involvement from experienced youth peer workers will also help ensure interventions are appropriate, feasible, and meaningful. Drawing on the existing knowledge held by the youth peer workforce and young people who have accessed peer support interventions is the most promising avenue for determining the ways in which peer support is an active ingredient for youth depression and anxiety.

## List of abbreviations

CASP Critical Appraisal Skills Programme

CBT Cognitive Behavioural Therapy

HOP Honest, Open, Proud

NICE The National Institute for Health and Care Excellence

OEF Orygen Evidence Finder

PRISMA Preferred Reporting Items for Systematic Reviews and Meta-Analyses

QALY Quality adjusted life years

RCT Randomised controlled trial

SES Socio-economic status

TAU Treatment as usual

USA United States of America

## Declarations

### Ethics approval and consent to participate

No research participants were involved in this study. We worked with an international steering group of young adult peer workers and/or young adults who had received peer work. They contributed their expertise as advisors to the review, and provided consent to do so by completing an expression of interest form. They were not involved as research participants. We also sought advice from peer support experts, who were consulted to improve the quality of the review. In line with our institutional requirements, we did not have to seek ethical approval to involve either group as advisors.

### Consent for publication

Not applicable.

### Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

### Competing interests

The authors declare that they have no competing interests.

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### Authors' contributions

MBS and EB designed the review with assistance from AB. AB and MBS designed the search strategy and AB performed database searches. MBS, SC, AB and EB undertook screening. RM coordinated the steering group meetings. All authors contributed to the drafting of the manuscript, led by MBS. All authors read and approved the final version of the manuscript.

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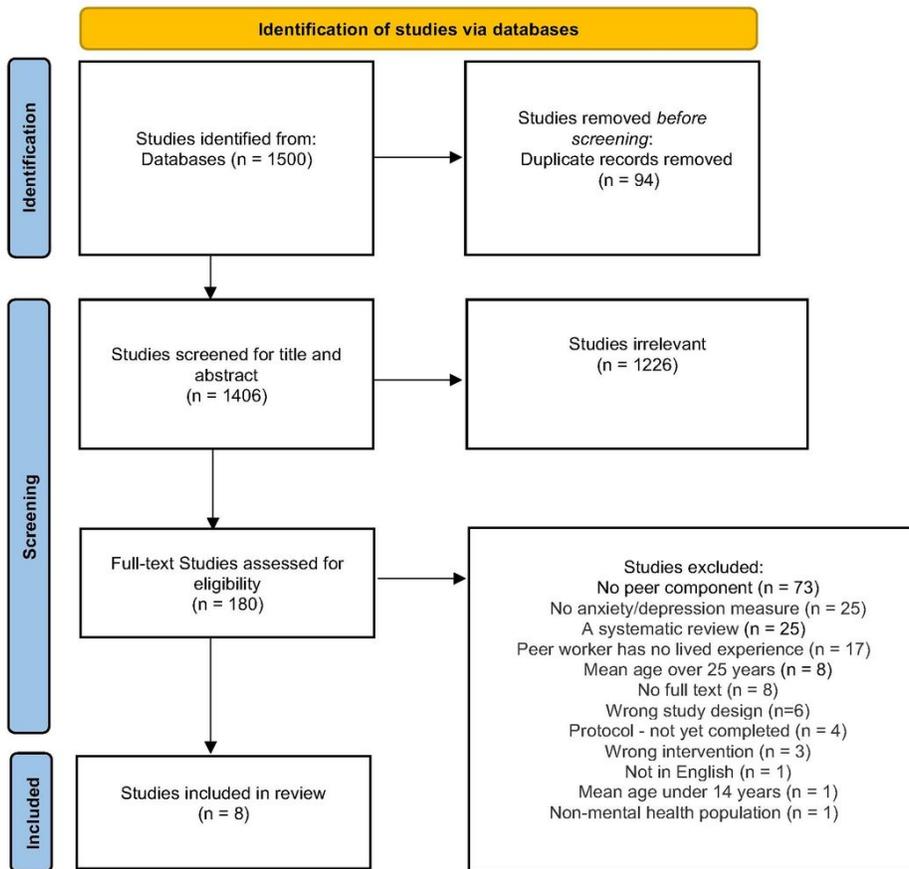
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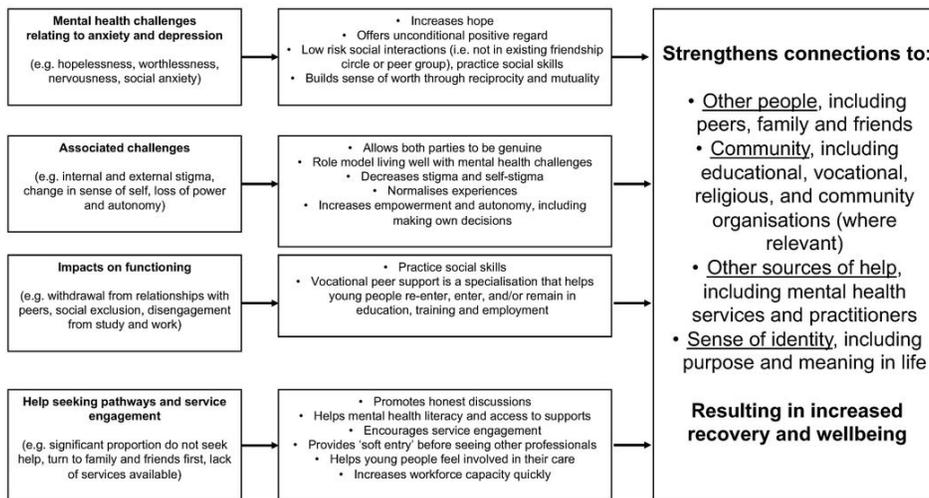
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## Figures



**Figure 1**

PRISMA flow diagram summarising study selection processes through the review



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**Figure 2**

Proposed preliminary mechanisms of action

**Supplementary Files**

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