What science has shown can help young people with anxiety and depression

Identifying and reviewing the ‘active ingredients’ of effective interventions: Part 2

Contents

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Foreword

In 2021, we published a report summarising the evidence for the 'active ingredients' of interventions for anxiety and depression.

By active ingredients, we mean those aspects of an intervention that drive clinical effect, are conceptually well defined, and link to specific hypothesised mechanisms of action – the aspects of an intervention that make a difference.

This report continues that work, summarising the evidence from 21 new teams and looking at 19 distinct active ingredients not covered in the last report. As with our 2021 report, we are keen to share our findings from this work, and we hope that the mental health science community finds this a useful resource.

Dr Catherine Sebastian
Head of Evidence, Mental Health

Professor Miranda Wolpert
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Introduction

In June 2020, Wellcome's Mental Health Team launched its first active ingredients commission, supporting 30 research teams from 12 countries to review the existing evidence on the one active ingredient (27 in total, see Table 1) they considered to be a 'best bet' for preventing and treating anxiety and depression in 14 to 24-year-olds, worldwide. The active ingredients identified and reported in the first report: 'What science has shown can help young people with anxiety and depression' were not intended to represent an exhaustive list of potentially effective active ingredients. Indeed, there were clear gaps in what was commissioned (e.g. lack of active ingredients on targeting structural and systemic issues). We then commissioned two research teams to explore what had been learned and what was missing, which led to valuable qualitative insights from young people with lived experience of anxiety and depression, researchers, clinicians, and other stakeholders from across the world. Consequently, we launched a second commission in February 2021 for research teams to review additional active ingredients of effective interventions for tackling youth anxiety and depression worldwide. Ultimately, our aim was to identify the active ingredients that are most likely to help as many young people in as many contexts, globally, as possible. In this second report, the additional 19 active ingredients commissioned in 2021 are summarised. These can be broadly categorised by their focus of change into six groups: (i) behaviours and activities; (ii) beliefs and knowledge; (iii) brain/body functions; (iv) cognitive and attentional skills; (v) human connections; and (vi) socioeconomic factors (see Table 1).

Following on from these commissions, in March 2022 the Mental Health Team launched the 'Mental Health Award: looking backwards, moving forward – understanding how interventions for anxiety, depression, and psychosis work'. The aim of this call was to fund teams of researchers, working across any discipline of relevance to mental health science, to investigate the causal mechanisms underpinning the active ingredients of effective interventions for anxiety, depression, and/or psychosis, to inform the development of new and improved early interventions. We hope that this work will increase scientific understanding of how brain, body, and environment interact in the resolution of these problems.

Who is this report for?

This report is aimed at the mental health science community. By mental health science we are referring to any discipline that uses evidence in rigorous and transparent ways, whether based on observation or experimentation, that can help us find answers to the best way of creating a world in which no one is held back by mental health problems.

About this report

In this report, we summarise the key insights gained from the second group of 21 teams we commissioned in 2021, to review the evidence underpinning 19 active ingredients of effective interventions. Details of the active ingredients reviewed are included in Table 1 and encompass a broad range, spanning five categories, from the cellular to the behavioural. Wellcome selected these active ingredients based on the quality of the submitted proposals, the teams' expertise, and the need to ensure that the active ingredients were distinct from the ingredients reviewed in the first commission. We also prioritised ingredients based on a list generated by the qualitative insights from young people with lived experience of anxiety and depression.

We asked teams to use an appropriate review methodology to best understand:

- whether existing evidence shows that their active ingredient is effective among 14 to 24-year-olds
- whether there are subgroups or contexts in which their ingredient is particularly effective or ineffective
- the mechanisms of action underpinning the efficacy of their active ingredient.

In short, we asked them to address the question: 'What works, for whom, in what contexts, and why?'

In addition, teams were asked to involve young people, ideally with lived experience of anxiety and/or depression, as part of their review process. This ensured that reviews were grounded in and informed by the priorities of those most affected by mental health problems. As can be seen in the summaries in the next section, this expertise is woven throughout and complements the findings of the literature reviews. More details on the different ways in which teams chose to involve young people in their reviews can be found in Appendix 1 of the first report.

While they do not represent an exhaustive list of all possible active ingredients, the commissioned reviews have allowed us to provide the field with an overview, bringing together insights across a large and cross-disciplinary literature, and to signpost the way for future research.

Table 1: Active ingredients to prevent or treat youth anxiety and depression reviewed by Wellcome-funded teams (2020–21)

Behaviours and activities	Beliefs and knowledge	Brain/body functions
Behavioural activation: increasing engagement with positive activities*	**Cultural connection:** connection with one's own culture	**Circadian rhythms:** better sleep–wake cycles*
Collaborative goal setting and tracking	**Mental health literacy and psychoeducation**	**Gut microbiome:** improving gut microbial function*
Engagement with the arts*	**Sense of mattering***	**Hippocampal neurogenesis:** growth of new neurons in the hippocampal region of the brain
Exposure: facing one's fears in a planned manner*	**Sense of purpose**	**Omega-3 supplements**
Physical activity: more bodily movement*	**Self-evaluation:** improved view of self*	**Reduced levels of inflammation in the body***
Problem solving*	**Social action**	**Selective serotonin reuptake inhibitors:** use of antidepressants*
Relaxation techniques: better stress response via relaxation*	**Spiritual and religious beliefs**	
Remote measurement technologies: use of remote technologies to monitor changes in biology, behaviour, and environment relevant to depression		
Self-disclosure: sharing information with others about personal experiences and characteristics		

Active ingredients reviewed in 2021 and summarised in this report
***Active ingredients reviewed in 2020 and summarised in Part 1.**

Note: This is not a comprehensive list of all possible active ingredients. Wellcome selected these ingredients based on the quality of the submitted proposals, the teams' expertise, and to ensure a diverse range of ingredients were considered. Categories used are imperfect and merely for ease of navigation.

Cognitive and attentional skills	Human connections	Socioeconomic factors
Affective awareness: knowing how one feels*	**Communication in families**	**Economic transfers:** increased financial resources via cash transfers*
Decentring: better able to shift perspective*	**Digital quality social connection***	**Urban access to green space***
Emotional controllability: beliefs about the extent to which emotions are controllable	**Family support**	
Emotional granularity: improved ability to characterise emotional experiences	**Loneliness reduction***	
Emotion regulation: improved management of emotions*	**Neighbourhood cohesion:** increased neighbourhood social connection*	
Grief reduction: use of strategies to target feelings of grief	**Peer support:** support from a peer who has experienced anxiety and/or depression	
Helpful attentional and interpretational thinking patterns*	**School connectedness:** sense of connection to school life	
Hopefulness: learning to be more hopeful*	**Social inclusion:** improved inclusion for those who are minoritised on the basis of their identity (e.g. sexual and gender)	
Mental imagery: helpful use of emotional mental imagery*	**Social relationships:** facilitating improvements in social relationships*	
Perfectionism reduction*	**Working alliance:** a functional and collaborative relationship with a helper	
Repetitive negative thinking reduction*		
Self-compassion*		

Active ingredients reviewed in 2021 and summarised in this report
***Active ingredients reviewed in 2020 and summarised in Part 1.**

Note: This is not a comprehensive list of all possible active ingredients. Wellcome selected these ingredients based on the quality of the submitted proposals, the teams' expertise, and to ensure a diverse range of ingredients were considered. Categories used are imperfect and merely for ease of navigation.

Reviewing the evidence for 19 active ingredients

What do we know about what works, for whom, in what contexts, and why?

This section of the report brings together key learnings from the 21 reviews we commissioned in 2021, examining the evidence for 19 active ingredients of effective interventions for youth anxiety and depression.

The summaries below are presented in alphabetical order, according to the categories shown in Table 1, starting with behaviours and activities. For each summary we link to the full report, preprint, or publication arising from the commissioned work. Full references for the original evidence identified by the research teams can be found there.

The Team Lead for each project has been underlined in the author list at the start of each summary, to make it easier for readers to connect specific summaries with content elsewhere. For further details on author affiliations, please see Appendix 1.

Each team has also suggested specific measures to assess their active ingredient, as well as up to three references for further reading, which can be found in Appendix 2 and 3, respectively.

For further updates on this and other active ingredients work, see: https://wellcome.org/what-we-do/our-work/anxiety-depression-young-people-finding-next-generation-treatments

Behaviours and activities

1. Collaborative goal setting and tracking

Focus

Prevention and treatment of anxiety and depression

Authors

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Publication

Jacob J, Stankovic M, Spuerck I & Shokraneh F. Goal setting with young people for anxiety and depression: What works for whom in therapeutic relationships? A literature review and insight analysis. BMC Psychology, 2022; 10(1): 1-15. https://doi.org/10.1186/s40359-022-00879-5

Collaborative goal setting within a therapeutic setting refers to the agreements made between young people and their practitioners about what they want to achieve throughout their time in therapy.

The therapeutic relationship, also known as the therapeutic alliance, refers to the connection or partnership between young people and their practitioners. Research suggests that therapeutic relationships have three components: (i) bond (emotional connection); (ii) tasks (small steps to work on together); (iii) goals (overall goals of therapy). Goals are usually formulated at the start of therapy, through a series of discussions between young people and their practitioners. While this is a widespread practice in many countries, little is known about how collaborative goal setting is part of the development of therapeutic relationships, or the impact it has on outcomes.

Aim

The research team considered the evidence in relation to the following key questions:

- Is collaborative goal setting helpful or unhelpful to young people experiencing anxiety and/or depression, as an element of therapeutic relationships?
- For whom is it helpful or unhelpful?
- Why/why not and how is it helpful or unhelpful?
- Under what circumstances is it helpful or unhelpful?

Methodology

The team conducted a mixed methodological approach, combining reviews of peer-reviewed and grey literature and additional sources (e.g. websites) (*n*=10,907), alongside consultations with international advisors (*n*=8 young people with experience of anxiety and/or depression and therapy, aged 15–26, average age=20.8; *n*=6 academics and clinicians).

The advisors comprised six females (including trans female) and eight males (including trans male) living in six countries (Brazil, Norway, Pakistan, Spain, Turkey, and the UK). The purpose of the consultations was to discuss findings from the literature, and to contextualise them in lived experience. Young people with lived experience were integral to the design and delivery of the research via the team peer researchers and youth advisors, ensuring that all stages of the research were in line with their views and feedback.

Limitations included:

- The literature reviewed was mainly focused on adults, over the age of 25 and into elderly years.
- The included studies had small sample sizes (one had a sample of 1, one had a sample of 16, and one had a sample of 465; two did not report sample sizes) and homogeneous sets of participants (over 60% of samples were White European). All research participants were from high-income countries.
- While advisors were from diverse demographic groups, not all groups were represented. For example, a wider range of ethnic groups and genders could have been represented.

Key findings: What works, for whom, in what contexts and why?

What works?

Collaborative goal setting is generally helpful for young people aged 14–24 experiencing anxiety and/or depression.

For whom?

Some individual factors or experiences may negatively impact goal setting and relationships. For example:

- Individuals experiencing high levels of distress, complex trauma, low confidence, hopelessness, negative past experiences of goal setting, perfectionism, and overthinking may find goal setting more challenging, or unhelpful.
- Depending on how they are feeling, young people experiencing anxiety may find goal setting helpful, as the exercise can help to break things down into small (and more manageable) tasks. Alternatively, if they are feeling overwhelmed, goal setting may be unhelpful.
- Personal preference is considered key to good therapeutic relationships. This includes young people's preferences to work on goals, or to not work on goals.

In what contexts?

Collaborative goal setting is broadly helpful in a range of settings. However, culture and country context are extremely important considerations.

- Young people in some countries (e.g. Pakistan) do not have agency to set goals and less consideration is given to what might be helpful or unhelpful from the young person's perspective.
- Referral routes may negatively impact goal setting. Indeed, when referred for support by others (e.g. parents/carers), young people may not recognise the symptoms or difficulties identified by parents/carers or others resulting in the referral. Having an understanding of – or agreeing with – the difficulties identified is crucial for collaborative goal setting.

How and why?

Goal setting is helpful for young people experiencing anxiety and/or depression because it supports open communication and trust, and enables young people to feel supported and have ownership of their care. However, language and power dynamics are key, and reviewing progress towards goals may too frequently give young people the impression that practitioners are more interested in gauging their own success, rendering ratings meaningless. In particular, agreeing goals was described to be of key importance to the process of young people feeling understood, listened to, and valued by their practitioners. Additionally, agreeing goals helps to establish a sense of mutual support between the young people, their parent/carers, and the practitioners who are supporting them.

An important additional part of goal setting was identified as being given a choice about goal content, and how this translates into the available options for young people's care. This leads to young people feeling a sense of autonomy and control over what happens to them, enabling them to feel involved in their own care.

Finally, young people particularly value receiving support to split actions into smaller manageable steps, and in doing so receive encouragement and validation from practitioners that their goals are achievable.

Insights from young people with lived experience

Youth advisors agreed that goal setting could be – and had been – beneficial to those experiencing anxiety and/or depression in a range of contexts. The most helpful elements of goal setting were around it providing a channel for open communication, allowing young people to feel in control of their own care. Some said that agreeing goals had helped them to build trust with their practitioner, which in turn led to them having a better experience of therapy, including positive outcomes. Other youth advisors said trust had to come first, and that it was important for therapists to work on the relationship before they felt able to share goals with them. Goal setting was also viewed as being beneficial in helping young people to break things down into manageable steps.

However, there were some contexts in which the youth advisors described goal setting as not being possible or helpful. These included country-specific contexts (e.g. in Pakistan, where decisions about care are generally made by the family) and therapeutic contexts (e.g. in long-term therapy, both the complexity of difficulties and length of support were limiting factors).

Finally, there was discussion around a possible disconnect in language, where youth advisors said that young people associate 'goals' with school/work, while 'therapeutic goals' had more personal and significant meaning to them.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

Goal setting appears to be highly acceptable to young people, and the youth advisors who had a personal preference to not work with goals expressed understanding of how it could be beneficial to others. However, it is important to note that there is a risk of harm if young people's personal preferences are not taken into consideration. Past negative experiences with goal setting were highlighted as a factor, which meant that goal setting was viewed as unhelpful for some. Further exploration of the interactions between systems/contexts (e.g. country), therapeutic practice (e.g. practitioners' training), and young people's preferences could improve understanding and availability of goal setting.

Despite there being nothing to suggest that this strategy could not be scaled up globally, cultural considerations are likely to be a limiting factor in some places.

Recommendations

For practice

- An individual's preference to not set goals may be driven by some of the personal factors identified in this review, such as hopelessness or high levels of distress. Therefore, a key role of practitioners is to work through reasons for not wanting to work on goals first. Given that there are notable elements of goal setting that have been identified as helpful, reviewing the option to work on goals over time may be beneficial.
- Setting goals may facilitate the therapeutic work with young people experiencing high levels of distress or trauma, given that the exercise of setting goals can help to build trust and improve communication.
- It is essential for young people to own the goals – for the goals to be theirs and not be led by the practitioner, for example. This is particularly important when they are experiencing depression, as it enables them to exercise control over their feelings and behaviour when they may be feeling hopeless and/or purposeless.

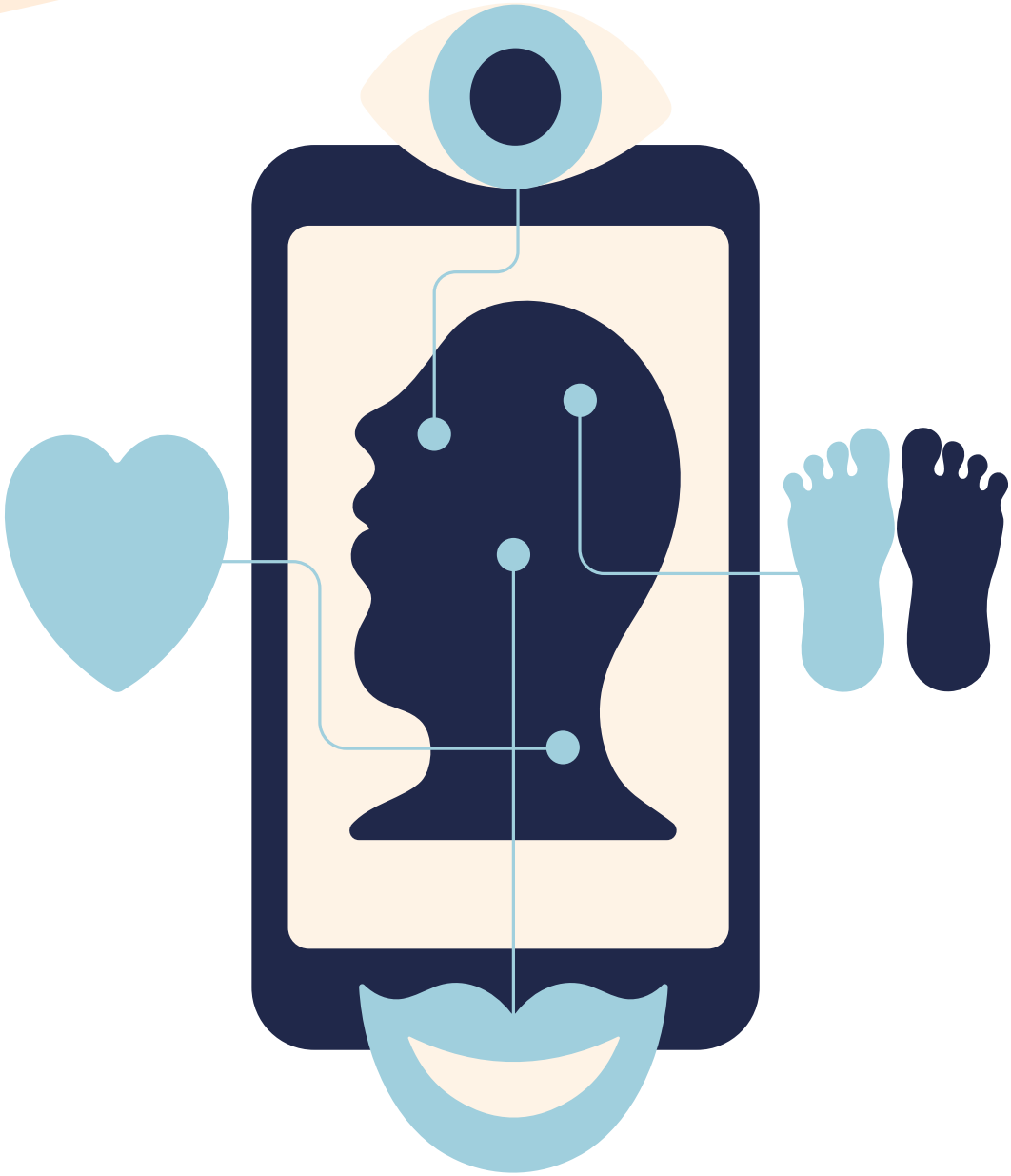
For future research

Priority in future research should be given to:

- Researching effective and non-effective elements of goal setting.
- Conducting goal setting research in more diverse settings and with a clearer focus on youth, as most studies to date have been carried out with adults.
- Consideration of the intersection between systems, practice, and young people's preferences.
- The links between goal setting as part of therapeutic relationships and any symptom-based outcomes, i.e. changes in anxiety and depression symptoms.

2. Remote measurement technologies

Use of remote technologies to monitor changes in biology, behaviour, and environment relevant to depression



Focus

Ongoing management, stopping relapse and treatment of depression

Authors

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Preprint

Walsh AEL, Naughton G, Sharpe T, Zajkowska Z, Malys M, van Heerden A & Mondelli V. Remote measurement technologies for depression in young people: A realist review with meaningful lived experience involvement and recommendations for future research and practice. MedRxiv, 2022. https://doi.org/10.1101/2022.06.16.22276510

Remote measurement technologies (RMT), such as smartphones and wearables, allow for active (manual) and passive (automatic) data collection from individuals in real time during their day-to-day life, from which their biology, behaviour, and environment can be inferred.

Many individuals begin to experience mental health problems at around the age of 14. However, cases often go undetected and untreated, with young people particularly vulnerable to further deterioration due to barriers in help-seeking – for example, delay in or lack of access to mental health services, difficulty identifying or expressing concerns, stigma, and disregard of youth agency. A growing body of evidence suggests that RMT can monitor and detect changes relevant to depression for use in objective screening, symptom management, relapse prevention, and personalised interventions. RMT are thought to be especially accessible to young people due to the popularity of such technologies in this age group.

Aim

The research team considered the evidence in relation to the following key question:

In what ways, for whom, in which contexts, and why do RMT appear to work or not work for depression in young people?

Methodology

The team conducted a realist review focused on the use of RMT for depression in young people aged 14–24. The review was conducted in collaboration with two young, lived experience co-researchers from The McPin Foundation Young People's Network (YPN) and in accordance with the Realist and Meta-narrative Evidence Syntheses: Evolving Standards (RAMESES) for quality and publication. Iterative searches across 10 electronic databases and 7 sources of grey literature, fine-tuning of selection-criteria, data extraction and evidence synthesis with insights from the wider YPN members allowed gradual refinement of an initial framework into a realist intervention theory.

They identified 6,118 papers for screening and included 104 in their review. As part of their review, the team examined factors likely to impact the benefits, implementation, and overall potential of RMT for depression in young people in the real world, such as the type of individuals who use RMT and the contexts in which they are used. By doing this, the review increased understanding of the reasons why RMT may or may not work, and the research team presented recommendations for the use of RMT in the future.

Limitations included:

- Convenience sampling and selection bias, with those young people already interested or making use of RMT more likely to take part in both acceptability and clinical studies.
- Reliance on self-report in community samples with few studies reporting the number of individuals above or below clinical cut-offs limiting analysis of depression outcomes.
- Potentially inappropriate statistical analyses for low sample sizes with large time series data sets.
- Short study duration (7 days to 12 months at most) or snapshot monitoring periods (2–3 weeks) in multiyear studies limiting investigation of variables most likely to predict relapse and their specificity and sensitivity for depression.
- Low number of predictor variables and little consideration of the many factors that could have confounding, mediating, or moderating effects – e.g. mental/physical comorbidities.
- Limited investigation of clinical utility – e.g. impact on time to treat, depression outcomes, and potential harms.
- Limited investigation of the variability in adherence, accuracy, and predictive performance across individuals.

Key findings: What works, for whom, in what contexts and why?

What works?

- Out of the different types of RMT, young people most preferred using smartphones, with both passive and active data collection for a holistic approach, but a balance between data quality, intrusiveness, and data privacy.
- From the evidence currently available, depression was best detected by changes in sleep, mobility, smartphone usage, social communication, and self- or parent-reported mood.
- This data had potential use for screening and monitoring symptoms of depression, as well as in relaying information to healthcare professionals. However, significantly more research with improved methodology is required to determine its use in relapse prevention and personalisation of interventions.

For whom?

- RMT is most likely to benefit individuals who are interested in and motivated by data, who have lower depression severity, no comorbidities where self-monitoring could cause harm – e.g. eating disorder, health anxiety, OCD – and the presence of behaviours (or perhaps other active ingredients?) that could be targeted to help manage depressive symptoms – e.g. improve sleep, reduce stress, and increase positive activities.
- While boys were less likely to use RMT, they may gain the most benefit through reduced perceived stigma and aiding help-seeking behaviours.

In what contexts?

- RMT facilitated self-monitoring during the transition from school to university, a period of life known to be associated with worsening depression among young people.
- However, there were challenges associated with the use of RMT in some schools where the use of smartphones and other technologies was banned during class, resulting in a loss of data.
- There were also significant challenges associated with the integration of RMT into healthcare settings for reasons of limited capacity and IT infrastructure.
- When considering scalability, a focus on adaptability to context, language, and culture was deemed important, such that RMT were culturally compelling and accurate for use in the local context.

How and why?

The impact of RMT as an intervention to directly improve outcomes of depression remains inconclusive. However, there is evidence to suggest that self-monitoring improves emotional self-awareness, which can help with goal setting, behaviour change, and help-seeking behaviours. It can also improve communication with healthcare professionals, strengthening the therapeutic relationship, and potentially leading to subsequent improvement in depressive symptoms.

Insights from young people with lived experience

Members of the YPN were not surprised by the findings of this review and tended to agree with the conclusions made. Some members were open to using RMT in the future, as they liked the idea of being able to view their data, track their progress, and set goals regarding symptom management and recovery. However, concerns were raised regarding the requirement for continued engagement with RMT, which could prove difficult when experiencing low energy and lack of motivation. In fact, this was the main reason given by members of the YPN for why they might not use RMT. The young people that the team consulted with also suggested that the focus on data collection and goal setting could be viewed as pressuring rather than helpful, and it could cause harm due to users potentially becoming overly concerned with self-monitoring their data. Therefore, the young people concluded that RMT could work well for some, but not so well for others.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

Existing research investigating the acceptability of RMT for depression in young people suggests that they have an overall positive opinion of RMT; however, there may be an overestimation of its likely use by young people for a number of reasons:

- Real-world use of RMT for mental health, despite the variety of apps already available, is low.
- Limited investigation of the impact of depression severity on continued engagement.
- Heterogeneous, artificially inflated, or unreported quantitative measures of feasibility with highly variable adherence rates across the literature.

There may be potential for RMT to be scaled across the globe; however, great care needs to be taken over appropriate adaptation to context, language, and culture, and to not further widen digital divides. Finally, there was little research investigating potential harms resulting from the use of RMT for depression in young people. This requires immediate attention given the current speed of technology development and lack of regulation, standardisation, and testing for use in mental health.

Recommendations

For practice

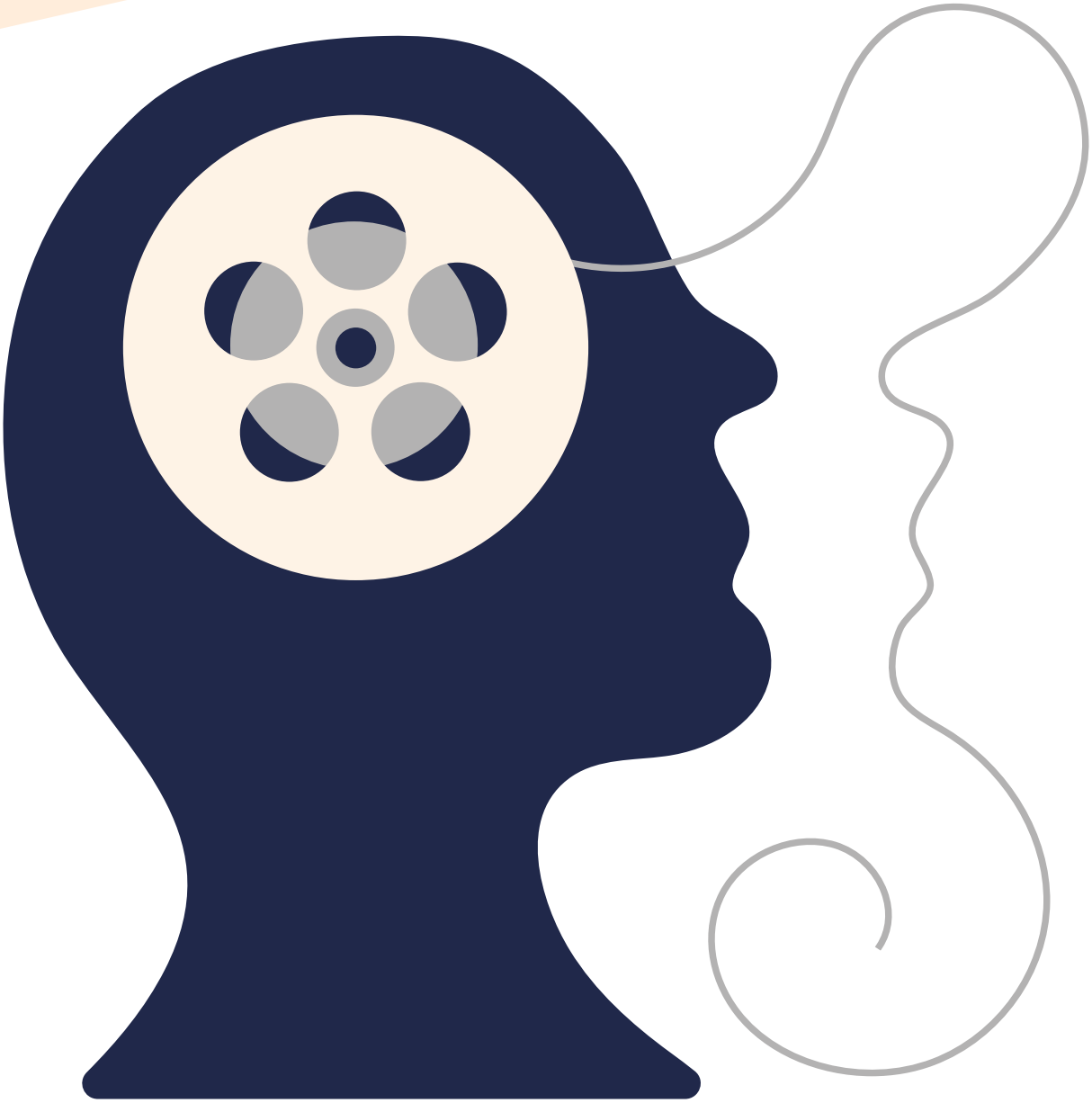
- RMT could form part of a blended, stepped-care approach, to be used during watchful waiting, assessments, while on waiting lists, and during traditional face-to-face therapy to enhance its effects through improved therapeutic relationship and emotional self-awareness.
- If used as an intervention in itself, there should be consideration of the individual characteristics and contexts shown to impact the benefits and potential risks of RMT.

For future research

- Review of ethical procedures for the collection, sharing, and use of data to bring them up to date with the digital mental health era.
- Quantitative measures of feasibility and depression outcomes need to be standardised and other methodological issues rectified to increase validity of results, allow predictive investigations, and determine the clinical utility of RMT.
- Potential harms resulting from the use of RMT for depression among young people.
- Implementation science to help overcome the challenges associated with the use of RMT in the real world.

3. Self-disclosure

Sharing information with others about personal experiences and characteristics



Focus

Prevention and treatment of anxiety and depression

Authors

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Preprint

Gonsalves P, Nair R, Roy M, Pal S & Michelson D. A systematic review and lived experience synthesis of self-disclosure as an active ingredient in interventions for youth anxiety and depression. OSF Preprints, 2022. https://doi.org/10.31219/osf.io/w6xae

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Self-disclosure refers to the ability to communicate and share intimate personal feelings and experiences. It is increasingly conducted via online social networking in addition to 'offline' behaviours. Self-disclosure involves emotional expression, whereby emotional experiences are articulated into words and communicated to others via written or spoken channels.

Research has documented the impacts of self-disclosure, including the benefits and potential harms of young people 'coming out' or disclosing personal experiences of mental health problems. Positive impacts for the 'disclosers' include reduced self-stigma, improved quality of life, personal empowerment, and enhanced social support. Positive impacts for the 'recipients' of personal information include reduced stigma and improved help-seeking behaviours. However, there have also been reports of potential harms associated with disclosure, including being labelled as having a mental health problem and discrimination.

Despite existing evidence, the effects of self-disclosure on common youth mental health problems, such as anxiety and depression, have been less studied.

Aim

The research team considered the evidence in relation to the following key questions:

- What is the evidence for the benefits and potential harms of self-disclosure in interventions aimed at preventing, treating, or managing anxiety and/or depression among 14 to 24-year-olds?
- For which clinical and demographic sub-populations does self-disclosure appear to be more or less effective?
- In which contexts do self-disclosure interventions appear to be more or less effective?
- What are the putative mechanisms by which self-disclosure interventions influence outcomes in the target population?

Methodology

The research team sought to generate the first comprehensive evidence synthesis of self-disclosure interventions involving young people (aged 14–24) who are either disclosers or recipients of personal information on living with anxiety and/or depression. The team conducted a mixed-methods systematic review of quantitative and qualitative data. The evidence was limited to peer-reviewed published studies, presenting primary data, and written in English. The team examined nearly 8,000 studies and found six that were directly relevant to their research questions. These six studies explored the outcomes and experiences of self-disclosure through videos or discussion-based exercises in schools, colleges, and clinics. Most interventions (*n*=4) were done with groups of young people. Two were led by young people with lived experience of anxiety and/or depression; one was organised by teachers, one by counsellors, and one was self-directed and delivered online.

In addition, seven Indian young people (*n*=5, aged 19–26) formed a lived experience panel referred to as the Young People's Advisory Group (YPAG). All members had lived experiences of anxiety and/or depression and most had accessed formal mental health services. The YPAG participated in six separate two-hour-long virtual meetings using Zoom, and with additional contributions elicited via email and WhatsApp. They were involved in this review by individually commenting on the research methodology, by contributing through group discussions to the interpretation of findings, and by working in smaller groups to conduct an online search of publicly accessible self-disclosure projects focused on or led by young people. This took place via online channels like websites, blogs, or social media, and through multimedia or arts projects not covered by the peer-reviewed literature. This activity was aimed at encouraging the YPAG to engage with concepts, processes, and potential impacts related to self-disclosure interventions.

Limitations included:

- A small number of studies were included in the review (*n*=6), and fewer studies (*n*=2) focused on anxiety as opposed to depression (*n*=6).
- Most studies were conducted in high-income countries (*n*=5), with a low representation of peer-reviewed studies from low- or middle-income countries (*n*=1).
- Most studies recruited female participants only (*n*=5) and included few young adults over the age of 18 (mean age=14.17).
- Interventions included varied in terms of format and nature of delivery, making it difficult to compare across interventions and draw conclusions.

Key findings: What works, for whom, in what contexts and why?

What works?

- Because the research team found relatively few studies addressing their research questions and the studies varied substantially, it is difficult to say with certainty whether self-disclosure is effective.
- The team did not find evidence of impacts on anxiety. However, the findings do suggest that self-disclosure may be effective at reducing symptoms for youth depression. Importantly though, effects were not apparent when self-disclosure was delivered as early prevention.

For whom?

There was no clear evidence concerning which subgroups might benefit more or less from self-disclosure interventions. However, there was indirect evidence that higher distress levels may be associated with stronger intervention effects.

In what contexts?

- There was very little evidence concerning the impacts of self-disclosure in different contexts and no studies included in this review compared interventions in different contexts.
- Delivery by non-specialists (such as peers and teachers) can help build capacity in community health systems.

How and why?

- No studies explicitly examined mechanisms of self-disclosure.
- The YPAG, however, suggested several pathways through which self-disclosure may impact on outcomes, including by reducing social isolation, offering an important outlet for both making sense of and expressing difficult thoughts or feelings, as well as helping to identify potential options to solve stressful problems which may help with resolving stressors that in turn affect depression and anxiety. The role of stigma reduction as part of the disclosure process in facilitating help-seeking was also recognised.

Insights from young people with lived experience

The YPAG highlighted benefits of self-disclosure as including the *'helpful release of difficult emotions or experiences'* and *'the sense of belonging or togetherness'*, especially in group settings. They also identified the potential for negative effects like bullying or harassment, but felt these could be reduced by meeting in small groups and being clear about confidentiality. The YPAG recommended that diverse narratives showcasing different genders, languages, and experiences should be incorporated into interventions. They also felt that young people with lived experience of anxiety and/or depression could be involved in delivering interventions as they may help foster trust, especially in group settings, and serve as programme ambassadors.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

Self-disclosure appears to be a helpful therapeutic intervention for depression, especially for those with elevated symptoms. However, concerns have been raised about the potential for unintended negative effects like bullying or harassment, especially due to disclosure in group settings. Self-disclosure interventions can be delivered online or face to face in groups in supervised settings, and by non-specialists, thereby building capacity in community health systems.

Recommendations

For practice

- Self-disclosure may be helpful for reducing stigma (and possibly stimulating help-seeking) and may potentially prevent mental health problems.
- Delivery by non-specialists – including peers, teachers, and youth with lived experience – can help build capacity in community health systems.

For future research

- More research is needed with different groups of young people across distinct age groups, genders, contexts (such as in educational settings or online and in more diverse contexts including low- and middle-income settings), and with different delivery agents including non-specialists (such as young people with lived experience).
- Research concerning both the positive and negative effects, and underpinning mechanisms of self-disclosure, are also needed.

Beliefs and knowledge

4. Cultural connection

Connection with one's own culture

Focus

Prevention and treatment of anxiety and depression

Authors

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For information

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Cultural connection relates to the dimensions of an individual's identity, including their worldview, sociocultural background, collective histories, language, and religion.

Cultural connection is often treated as a theoretical construct in the literature – one that cannot be directly observed or measured. Its most significant definition is composed of three overlapping components related to: cultural identity, traditional practices, and spirituality. Cultural connection, derived from cultural and historical knowledge, community connectedness, and language acquisition, has been shown to be protective against mental health problems, especially for historically devalued and marginalised youth, such as ethno-racial minorities including Indigenous youth. There is a growing need for youth mental health services to focus on culturally grounded care based on the needs of diverse youth populations. Of the myriad forces that influence youth mental health, the most fundamental are the social and cultural contexts in which youth are embedded. Fostering cultural connection and integrating these elements into mental health prevention and treatment services could be important in the prevention and management of anxiety and depression symptoms in youth.

Aim

The research team considered the evidence in relation to the following key questions:

- What elements/factors of cultural connection affect anxiety and depression in young people aged 14–24?
- How do these different elements/factors of cultural connection work to improve mental health outcomes for young people with depression and/or anxiety? In which contexts do they work? When do they not work? Why?
- How can cultural connection be integrated into prevention and treatment services for young people?

Methodology

The team conducted a narrative review of the literature on cultural connection, focusing on studies that would inform the prevention and treatment of anxiety and depression in youth. They identified 2,088 papers for screening and included 47 studies in their review. The majority of the included articles were survey studies (85%), followed by qualitative studies using interviews, focus groups and participatory methods (4%), mixed-method studies (2%), randomised controlled trials (RCTs) (2%), and review papers (2%).

To ensure that the outcomes of this review were meaningful, the team consulted with a youth advisory council (YAC; *n*=5) with lived experience of depression and/or anxiety, who provided feedback on the outcomes of the narrative review. The YAC had representation from across Canada and from a diverse group of youth, including Indigenous youth, sexual/gender minority youth, and youth from ethno-racial minority groups. The YAC met weekly over the course of six weeks to organise and interpret the results of the narrative review using a participatory decision-making technique called Fuzzy Cognitive Mapping.

Limitations included:

- Most of the reviewed studies were conducted in high-income (96.6%) Western contexts (90%), usually with university (10%) or high-school students (58%).
- Most of the included papers were survey studies (85%) where participants were asked to fill out surveys, questionnaires, or self-reports measures.
- It was difficult to draw comparative conclusions between studies, given the diversity in the demographic pool of representation and the considerable differences in methodologies used.

Key findings: What works, for whom, in what contexts and why?

What works?

Evidence from large-scale survey studies and smaller qualitative studies supported the importance of culture in positive youth mental health outcomes and impacts. This included:

- Individual level factors:
  - Positive ethnic identity predicts positive mental health functioning in relation to self-esteem, and connection to family and community.
  - Higher ethnic identity can help youth address issues relating to life achievement, as well as mental health challenges.
- Family level factors:
  - Support from caregivers and role models helps with mental health challenges of gender/sexual minority youth.
  - In families where there was a higher rate of cultural preservation, through engagement in linguistic, cultural and religious practices, there were lower rates of anxiety and depression.
- Community level factors:
  - Communities preserving culture/heritage have lower suicide rates and anxiety among young people. This includes youth from Indigenous and Black communities.
  - Subsistence living and traditional practices help lower rates of suicide ideation and anxiety in Indigenous youth. This includes connection to earth/traditional environment as a protective factor.

For whom?

The research team found some recurring trends in the evidence of who benefits most from strategies seeking to facilitate cultural connection in youth mental health.

- Much of the literature on cultural connection centres on Indigenous youth. Studies point to the integration of traditional practices and cultural activities into prevention and treatment programmes for young people, to increase cultural identity and self-esteem.
- For Black youth, an increased awareness of racial identity was associated with a decrease in prevalence of depressive symptoms. For ethnic minority youth, lower engagement in linguistic, cultural, and religious practices was associated with depressive symptoms. Youth reported using positive religious coping to protect themselves from heightened levels of depressive symptoms when faced with discrimination.

In what contexts?

Preliminary evidence suggests that elements of cultural connection work differentially depending on context.

- There were several elements of culture or cultural connection that had both a positive as well as negative impact on youth mental health, depending on context. For example, ethnic, religious, and familial identity were significantly and positively related to collective identity and higher levels of wellbeing. Yet, generational differences in acculturation between parents and youth resulted in increased anxiety and family conflict.
- Cultural context was also important in terms of mental health service accessibility and use by youth.

How and why?

While there is an understanding of what types of cultural elements are important for youth mental health (e.g. language engagement, traditional practices, being on the land), the mechanistic pathways by which these elements have direct or indirect impacts remain unclear.

Insights from young people with lived experience

- Youth who participated in this project noted that cultural activities can enhance an individual's sense of belonging to their community, as well as provide youth with support by connecting them with other people who have similar cultural interests to them.
- Young people stressed the importance of getting to the root causes of certain cultural factors such as understanding white supremacy and how it affects one's own cultural identity, colonisation, oppression, and historical trauma, all of which can lead to discrimination and mental health issues in youth.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

There is a wide range of cultural elements that can facilitate the uptake and integration of youth mental health services that are culturally relevant and appropriate for diverse groups of youth. However, given the range and scope of the types of elements considered in this narrative review, there seem to be variable degrees of acceptability, accessibility, and scalability, depending on the intervention and context being considered. There may also be potential variation of the same cultural elements across settings, with some cultural elements having a positive effect in one context, and a negative effect in another.

Recommendations

For practice

- There is a need to address the question of best relational or contextual fit of cultural practices in mental health interventions, given a particular place, time, and population group.
- Researchers, mental health professionals, and treatment providers are encouraged to work together to make further inroads into expanding the study of culture-based interventions from multiple perspectives and locations.
- Much of the contemporary literature on culturally adapted or culturally grounded interventions aimed at youth must shift focus towards strength-based approaches to mental health. Terms such as 'resilience', 'wellbeing', and 'mental wellness' are more often used to describe interventions utilising cultural connection.

For future research

Based on the literature consulted, there is recognition that it would be important to:

- explore how different cultural connection factors/elements interact with each other (directly and indirectly) and within complex systems
- improve methods for measuring the impact of cultural elements/factors within interventions, as this is necessary to understand their impact
- better understand how connection to one's culture contributes to mental health interventions and services for diverse youth populations.

5. Mental health literacy and psychoeducation

Mental health literacy programmes involve improving recognition of the signs and symptoms of different mental health problems; understanding of their causes and risk factors; knowledge of the range of treatments available and pathways to support; and identification of strategies for self-management. In psychoeducation interventions, the informational component is often conceptualised in terms of promoting 'mental health literacy', while the skills-based component may involve structured training in complementary behavioural practices such as relaxation or problem solving.

Mental health literacy and psychoeducation programmes can be delivered by mental health professionals or non-experts (e.g. teachers), in different contexts (e.g. school, community, at home), and using different modes (e.g. in person, telephone, online platforms). The programmes can be developed to engage young people themselves (universally or those who are at risk) and those who interact frequently with them (e.g. teachers, parents, peers). Despite its widespread use, existing evidence syntheses of mental health literacy and psychoeducation programmes as a therapeutic approach for young people, with a specific focus on anxiety and depression, are relatively limited in their scope and conclusions. Understanding how and why this core component works could enhance the efficiency and effectiveness of prevention and treatment for young people.

Wellcome commissioned two different teams to review mental health literacy and psychoeducation as an active ingredient; each team took a slightly different approach to reviewing the evidence.

5A. Mental health literacy

Focus

Prevention, treatment, and ongoing management of anxiety and depression

Authors

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Aim

The research team considered the evidence in relation to the following key questions:

- How effective are mental health literacy programmes in the ongoing management and relapse prevention of anxiety and/or depression among youth?
- What factors amplify the therapeutic benefits of mental health literacy programmes?
- What are the challenges of delivering mental health literacy in low-resource settings, and how can we overcome these challenges?

Methodology

The research team conducted a systematic search of the literature to identify studies that aimed to improve literacy around anxiety and depression in 14 to 25-year-olds. Studies had to be: (a) published in a peer-reviewed journal; (b) written in English, Spanish or Nepali; (c) reporting on data collected from humans following the delivery of a mental health literacy programme that was designed to improve youth anxiety and depression outcomes. A total of 14,884 abstracts were identified, 93 full articles were screened, and the team included 17 studies in their review. All included studies were longitudinal in design. While they did cover a range of mental health literacy programmes, all studies used some form of training or workshop to improve understanding of anxiety and depression.

The research team also spoke to 24 young people (aged 14–24) with lived experience of anxiety and/or depression from Colombia (*n*=9, 44% male), Nepal (*n*=13, 46% male), and the UK (*n*=13, 46% male). The young people that the team consulted with were asked to share their views of mental health literacy (i.e. their knowledge and understanding of mental health, including the range of resources available to them) and their experiences of any relevant programmes. Moreover, to gain more diverse perspectives, the team also consulted with 11 stakeholders who work with young people in Colombia (*n*=3), Nepal (*n*=4), and the UK (*n*=4). Stakeholders included clinical psychologists, counsellors, child and adolescent psychiatrists, schoolteachers, and researchers. Interviews with stakeholders focused on their role and experiences working with young people, their perceived barriers to accessing mental health support, and the best ways to enhance the mental health literacy of young people in their care.

Limitations included:

- The number of relevant studies may have been underestimated due to only using the search term ‘mental health literacy’ or popular synonyms such as ‘mental health first aid’ and ‘psychoeducation’. However, where studies have categorised these interventions as more general educational or wellbeing interventions, these would not have been easily captured by the search strategy.
- Most included studies (*n*=15, 88%) were conducted in high-income countries (i.e. Australia, Germany, Finland, Taiwan, Hong Kong, Singapore, UK, US), with only two studies (12%) conducted in low- and middle-income countries (i.e. Mexico and Malaysia), reflecting a general gap in this area of research, rather than a biased search strategy.
- The small number of studies included (*n*=17) meant it was difficult to draw firm conclusions, especially considering the heterogeneity of the included studies, in terms of the outcomes assessed, measures used, timepoint(s) of data collection, use of a comparator/control condition, age range of the sample, and type of intervention used.
- Most studies assessed whether mental health literacy programmes improved knowledge of mental health (*n*=9, 60%) and/or assessed whether there were any changes in help-seeking behaviours or stigma (*n*=3, 20%), rather than explicitly assessing reductions in symptoms of anxiety and/or depression (*n*=2, 13%).
- Compared to studies delivered by teachers (*n*=5, 33%) and mental health experts (*n*=5, 33%), there were far fewer studies assessing interventions delivered by peers (*n*=1, 7%) or interventions that directly targeted the parents/carers of young people (*n*=1, 7%).
- The team was unable to capture the perspectives of policy makers to reflect governmental priorities relating to delivery of mental health literacy programmes in low-resource settings.

Key findings: What works, for whom, in what contexts and why?

What works?

- Mental health literacy programmes aimed at 'universal prevention', that is, all young people regardless of their levels of symptoms, were found to a) improve correct recognition of signs and symptoms of anxiety and depression and their different treatment options; b) facilitate help-seeking behaviours; c) reduce some aspects of stigma e.g. towards other people with mental health problems or even the self.
- Mental health literacy programmes delivered by teachers appeared to be clearest at improving literacy of anxiety and depression and there was some preliminary data suggesting that teachers' own levels of literacy were correlated with students' subsequent understanding of depression.
- Programmes delivered by experts (both academic, clinical, and experts by experience) yielded clear and consistent effects on stigma.
- In contrast, internet-based programmes were more inconsistent in their benefits.

For whom?

- Mental health literacy was found to be beneficial for all young people aged 14–24.
- There is some suggestion that girls may be more responsive to mental health literacy programmes than boys, but this finding requires further replication.
- The team found insufficient evidence exploring the effects of mental health literacy programmes among young people residing in low- and middle-income countries.

In what contexts?

- The evidence reviewed suggests that mental health literacy programmes can be delivered effectively in schools and as part of local community groups, such as sports clubs.
- Less consistent evidence is available for the efficacy of mental health literacy programmes delivered online.

How and why?

Mental health literacy enhances knowledge of mental health and related issues, it motivates help-seeking, and intends to reduce stigma related to mental health. Improved mental health literacy could help bridge the gap in mental healthcare to support young people. The mechanism for this improvement is not yet known, so more studies should be developed to deepen the knowledge while enhancing mental health in young people.

Insights from young people with lived experience

Young people with lived experience of anxiety and depression recognised the importance of mental health literacy programmes. However, they identified barriers to the delivery of these programmes, such as stigma, vulnerability, fear of sharing feelings, lack of knowledge and awareness, and school authorities' indifference to mental health issues. The young people also identified ways to overcome these obstacles, including by delivering mental health literacy programmes from a young age, incorporating them within the school curriculum, and delivering the programmes via alternative mediums (e.g. social media platforms).

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

A clear benefit of mental health literacy programmes is that they can be delivered by non-specialists in community settings (e.g. schools, non-governmental organisations), making them less expensive than interventions delivered by specialist mental health professionals, especially in low-resource settings. This in itself can render these interventions more accessible to more people across the world. The studies reviewed did not report any adverse/side effects of mental health literacy programmes, and no such issues were raised by the young people and stakeholders consulted. Instead, participants from all groups highlighted the need for mental health literacy programmes as a fundamental step towards preventing depression and anxiety.

Recommendations

For practice

- Implementing mental health literacy programmes may be critical for young people as they undergo a period of increased learning and flexibility.
- Stigma was often cited as a major barrier to seeking help, so it could be beneficial to target this in the first instance.
- Mental health literacy interventions should be adapted to the social context of the target population and be administered in basic language.

For future research

- Since most studies on mental health literacy programmes have been conducted in high-income countries, the effects of sociocultural context on the effectiveness of these programmes needs to be explored and adapted.
- We have also yet to establish if mental health literacy programmes can reduce anxiety and depression in young people.

5B. Psychoeducation (perinatal period)

Focus

Prevention, treatment, and management of perinatal anxiety and depression

Authors

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Preprint

Mhango W, Crowter L, Gaysina D & Michelson D. Psychoeducation as an active ingredient for interventions for perinatal depression and anxiety in youth: A mixed-method systematic literature review and lived experience synthesis. PsyArXiv, 2022. https://doi.org/10.31234/osf.io/3w6az

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The perinatal period refers to the period from pregnancy up to the first year after childbirth. It is a time of great change and adjustment and can be particularly challenging for young parents (i.e. those under 25 years of age) who are at an elevated risk of developing depression and/or anxiety.

Aim

The research team considered the evidence in relation to the following key questions:

- Does psychoeducation work to prevent, treat, and manage youth perinatal depression and anxiety?
- For whom does it work?
- In which context does it work?
- Why does it work?

Methodology

The research team conducted a mixed-methods evidence synthesis by triangulating evidence from three sources: (i) a systematic review of quantitative studies that evaluated perinatal depression and/or anxiety outcomes among 14 to 24-year-olds participating in interventions containing psychoeducation; (ii) a thematic meta-synthesis of qualitative evidence on young people's perceptions of the utility, acceptability, and barriers and facilitators of using psychoeducation during the perinatal period; (iii) a series of consultations with an international youth advisory group (YAG) with relevant lived experience of pregnancy before the age of 25.

For the systematic review of studies, the team searched scientific databases for all relevant literature that would allow them to address the key questions set out. They identified 4,287 papers: 352 were assessed for eligibility, and 20 studies were ultimately included. Of these, only 8 were quantitative studies, measuring mental health before and after psychoeducation therapy. The other 12 studies were qualitative, collecting young people's views and opinions on psychoeducation.

Finally, the team also consulted with a group of 12 young people (aged 17–26, *n*=11 female) who self-identified as having lived experience of youth pregnancy/parenthood. The young people came from five different countries: five were from Malawi, two from the UK, two from Kyrgyzstan, one from India, and one from Uzbekistan. Together, they formed an international youth advisory group, who met with the research team over four virtual consultation meetings. These meetings consisted of semi-structured discussions focused on the acceptability and utility of psychoeducation, the credibility of the preliminary evidence synthesis, potential refinements to the synthesis, priorities for further research, and practical implications.

Limitations included:

- Only 3 of the 8 quantitative studies and 4 of the 12 qualitative studies were conducted in low- and middle-income countries.
- Evidence for perinatal anxiety is scarce. Only one qualitative study measured anxiety outcomes.
- Young fathers have not been considered for the existing psychoeducation interventions.
- There is a lack of studies measuring factors that can modify the effects of psychoeducation interventions.

Key findings: What works, for whom, in what contexts and why?

What works?

- Seven of the eight quantitative studies examined multicomponent perinatal interventions, which included psychoeducation as one of their components. Of these seven studies, one focused on prenatal anxiety and six focused on postnatal depression. While the multicomponent intervention that focused on anxiety significantly reduced symptoms of prenatal anxiety *(p<.001)*, only two of the six interventions focused on depression reported significant effects on postnatal depression. In one study, it was reported that the multicomponent intervention reduced the incidence of postnatal depression with 4% and 20% of the participants in the intervention and control groups, respectively, developing postnatal depression at three months postpartum (p=.04). The other study reported a significant effect of the intervention with large effects (d=1.73, p<.05).
- Only one of the eight quantitative studies evaluated psychoeducation as a stand-alone intervention for postnatal depression. This particular study found stand-alone psychoeducation for depression to be effective with a moderate effect (d=0.32, p<.001).

For whom?

There is little evidence on the effectiveness of psychoeducation for specific populations. However, the YAG suggested that psychoeducation may be more beneficial for adolescents aged below 18 as they may potentially be at higher risk of depression and anxiety during the perinatal period due to the stigma associated with early pregnancies.

In what contexts?

- Only three of the eight quantitative studies (38%) were conducted in low- or middle-income countries. However, all of these studies demonstrated significant positive effects for interventions involving psychoeducation, suggesting that these are effective in low- and middle-income countries. Only one study conducted in a high-income country reported significant effects of the intervention.
- Quantitative evidence showed mixed results for the effectiveness of psychoeducational interventions in terms of delivery modes (individual versus group sessions), duration, and intervention providers (nurses/midwives, psychologists, or lay counsellors).
- Qualitative studies revealed that participants found psychoeducation to be more engaging when delivered in formats that are visually appealing (e.g. leaflets with bullet points). Additionally, TV and social media were considered as being particularly useful in making psychoeducation easily accessible. Group sessions were deemed to be more useful as they would also act as a source of social support, which would be an additional benefit of the psychoeducational interventions.

How and why?

Among possible mechanisms of action underpinning the efficacy of psychoeducation, evidence synthesised from the 12 eligible qualitative studies, corroborated by the YAG, suggested that psychoeducation can increase knowledge about how anxiety and depression present in the perinatal period, which in turn can lead to improved self-recognition, reduced stigma, and increased help-seeking. Psychoeducation can also improve awareness of relevant services, which may directly impact on help-seeking behaviour. And finally, psychoeducation can enhance an individual's ability to cope, stemming from their enhanced knowledge and skills in the management of their symptoms.

Insights from young people with lived experience

According to the YAG, psychoeducation should be used in prenatal and postnatal interventions and can be delivered in a variety of formats, in a friendly and supportive way. Despite this, the YAG viewed stand-alone psychoeducation as insufficient to address the full spectrum of needs presented by young parents, throughout the perinatal period. This reflected a more general view that no single element – psychoeducation or otherwise – would be capable of providing an 'end-all solution' to perinatal mental disorders. As such, psychoeducation as a stand-alone intervention was considered less effective than that delivered as part of a multicomponent programme. Specifically, some YAG participants reported that they would benefit from lessons on transitioning to motherhood in addition to lessons on psychoeducation.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

Psychoeducation is generally safe, with none of the reviewed studies reporting any adverse/side effects. Moreover, young people think that psychoeducation is accessible, as it can be delivered in different formats across various settings. It therefore also has the potential to be globally scalable.

Recommendations

For practice

Various recommendations for health providers, funders, and policy makers are suggested:

- There is an urgent need for targeted psychoeducation interventions for perinatal depression and anxiety in youth, especially in regions such as sub-Saharan Africa, where rates of adolescent pregnancy are very high (e.g. 9 out of 10 births involve adolescent mothers).
- Improving mental health literacy should be an important component of any intervention package for perinatal depression and anxiety, serving as a foundation for other support.
- Young people with lived experience of youth pregnancy/parenthood and perinatal depression and/or anxiety should be involved in developing psychological/psychosocial interventions.
- Intervention packages for perinatal depression/anxiety for young people could benefit from incorporating approaches on improving mental health literacy to serve as a foundation for other active ingredients.

For future research

- There is a need to explore innovative approaches, such as peer-delivered formats and online communities, to address the psychoeducational needs of young parents.
- Future studies need to focus more on identifying and measuring factors that can modify the effects of psychoeducation interventions.
- Young fathers need to be included in interventions for perinatal depression/anxiety as they are also at heightened risk of depression/anxiety, which might consequently affect how they relate to their partners and children.
- Anxiety outcomes need to be explored more in future research on perinatal interventions, considering its high comorbidity with depression.

6. Sense of purpose

Focus

Prevention of anxiety and depression

Authors

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Preprint

Hielscher E, Blake J, Chang I, Crandon T, McGrath M & Scott J. Sense of purpose interventions for depression and anxiety in adolescents and young adults: A scoping review and cross-cultural youth consultation. PsyArXiv, 2022. https://doi.org/10.31234/osf.io/sequ4

Sense of purpose is defined as the extent to which people see their lives as having meaning, a sense of direction, and goals.

Lack of direction and purpose is a critical but often overlooked issue associated with anxiety and depression in diverse groups of young people. Previous research has shown that sense of purpose can be fostered through three key avenues: gratitude enhancement, long-term goal setting, and identifying one's values (i.e. value clarification). Preliminary evidence shows that fostering a stronger sense of purpose can improve psychological wellbeing and protect against mental ill health. Searching for purpose begins in early adolescence. Interventions that enhance sense of purpose are relatively simple and easy to understand, making them a potentially suitable strategy for preventing the onset of anxiety and depression in young people.

Aim

The research team considered the evidence in relation to the following key questions:

- How effective are sense of purpose interventions in preventing or reducing anxiety and/or depression in young people?
- How feasible and cost-effective are sense of purpose interventions, and how well accepted are they by young people?

Methodology

The research team conducted a scoping review. They searched for any study which examined the effect of a sense of purpose intervention on the prevention or reduction of anxiety and/or depression (symptoms or incidence of newly diagnosed cases) in young people (aged 14–24), published in the last ten years. Additionally, young people with lived experience of depression and/or anxiety (*n*=19, aged 15–24) from Australia and India were consulted via online youth advisory groups. Two US-based experts on sense of purpose were also consulted. Experts and young people with lived experience advised the research team on the review methods and interpretation of review results, particularly the acceptability/feasibility and gaps/limitations of reviewed sense of purpose interventions.

The team reviewed 21 studies (12 theses and 9 peer-reviewed journal articles, 18 of which were RCTs). Five studies incorporated all three sense of purpose components (gratitude, goals, values), while the remainder targeted 'gratitude enhancement' and 'values clarification' as individual sense of purpose components. No study focused solely on goal setting (in the context of fostering purpose).

Limitations included:

- Most studies (*n*=17 of 21) recruited female university students (where >57% of the sample identified as female). Also, all but four studies were based in middle- to high-income settings (71.4% in the US), making the benefits of sense of purpose interventions for the broader population difficult to determine.
- There was inconsistent effect size reporting across studies, making it difficult to ascertain the overall magnitude of intervention impact on anxiety and depression.
- Most studies (*n*=11) did not evaluate the acceptability, feasibility, or cost-effectiveness of the sense of purpose interventions they were investigating.
- Studies lacked conceptual clarity related to sense of purpose, and none were informed by non-Western approaches to fostering purpose in life (e.g. *Ikigai*, a Japanese concept and philosophy for discovering purpose).

Key findings: What works, for whom, in what contexts and why?

What works?

- Studies incorporating all three sense of purpose components (gratitude, goals, values) (*n*=5) were most effective in reducing symptoms of depression and anxiety. Four of the five studies which examined sense of purpose more holistically found, on average, moderate reductions in symptoms of depression and/or anxiety up to several weeks (Mean=10 weeks; Range=2–30 weeks) following the intervention.
- Studies examining gratitude-enhancing interventions (*n*=10) yielded mixed findings, and those focused on value-clarification interventions (*n*=6) demonstrated limited to no support in terms of reducing depression and/or anxiety.
- Overall, sense of purpose interventions were more effective at reducing symptoms of depression than anxiety. This is indicative that sense of purpose is tightly connected to one's mood, but may play a different role in anxiety.

For whom?

Several studies (6 of 21) found greater improvements in those with extroverted personality types, a prior (positive) therapeutic experience, and in those already experiencing elevated levels of depression and/or anxiety.

In what contexts?

- The studies reviewed varied in terms of where they were conducted and how they were conducted, including intervention design and format (online vs face to face), dosage (single vs multisession), and duration (five minutes vs ten weeks), making it hard to discern in what contexts sense of purpose interventions work best.
- Sense of purpose interventions were typically delivered in a group peer setting (either face to face or online), which was the preferred format of the Australian youth advisors. Conversely, the Indian youth advisors highlighted how group-based sense of purpose interventions would only work in groups of young people with similar socioeconomic backgrounds and life priorities. Indian youth advisors also raised barriers related to online intervention implementation, particularly for young people living in rural areas of India.
- Subject-matter experts discussed challenges associated with implementing sense of purpose interventions in ethnically diverse and disadvantaged groups where sense of purpose is sometimes perceived as a privileged, upper-middle class notion which fails to recognise broader societal constraints (e.g. financial and discrimination constraints on enacting one's purpose).

How and why?

- Hypothetical reasons for why sense of purpose interventions may reduce depression and/or anxiety in young people were generally not discussed in the reviewed studies. However, three studies did propose possible mechanisms of action with respect to intervention effectiveness, including increases in self-knowledge and confidence, and decreases in existential dread and despair. All these factors have been intimately linked with purpose identification.
- More broadly, cross-sectional and cohort studies (not included in the review) hypothesise that the motivational forces created by purpose are a key factor in preventing mental health problems.

Insights from young people with lived experience

- Youth advisors (Australian and Indian) discussed the role of sense of purpose in their lives and recognised the strong links it has with their own mental health.
- There was overall agreement between the Australian and Indian advisors on the key sense of purpose components (values, goals, gratitude), but there were large cultural differences in terms of how these components are defined. In particular, the Indian advisors discussed the importance of family values in addition to personal values – a distinction which was not central in the discussion among Australian advisors.
- The advisors also described sense of purpose as something that is unique to the individual, and that interventions need to take this into account by using flexible delivery modes (e.g. group vs individual), alternative time frames (e.g. self-paced), and tailoring of the intervention to individual circumstances (e.g. socioeconomic status, religious and spiritual beliefs, culture).
- Having a relatable instructor or coach guiding them (e.g. of similar age and background) was also raised by the youth advisors as something that could help improve how well these interventions are received by young people.
- Indian youth advisors noted most interventions included in the review did not resonate with their own cultural values and settings.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

- The personal and culturally sensitive nature of sense of purpose, combined with the limited inclusion of diverse research participants and settings, makes it difficult to conclude whether sense of purpose could be incorporated into globally scalable mental health interventions.
- A small number of the studies reviewed (*n*=5) collected participant data on the acceptability of the intervention and received positive feedback, although so too did those who received a comparison intervention.
- Dropout rates were substantial in some studies (Mean attrition at follow-up=20.12%; Range=4–46%). Some eligible participants opted out of participation (due to scheduling clashes, loss of interest in study, complicated requirements of interventions), whereas others faced involuntary barriers which hindered their participation (e.g. student absent from school as could not afford school fees, or national education regulations banned research with longer-term follow-ups).
- In 4 of the 21 reviewed studies, some participants reportedly experienced worse mental health after receiving the sense of purpose intervention. In relation to this, the youth advisors and experts also highlighted potential harms of these interventions. For instance, some young people may feel pressured to discover their sense of purpose in a certain time frame, potentially leading to increased anxiety and depression. Discussions related to sense of purpose can be uncomfortable for young people, as they tend to shine a spotlight on their life's uncertainties and inconsistencies. To mitigate this potential risk, the experts that the team consulted with recommended avoiding the word 'purpose' in any intervention, to minimise feelings of pressure and distress. Experts also recommended incorporating a pre-intervention module, to gauge one's readiness for discovering their sense of purpose, and to normalise the experience and challenges of this discovery.

Recommendations

For practice

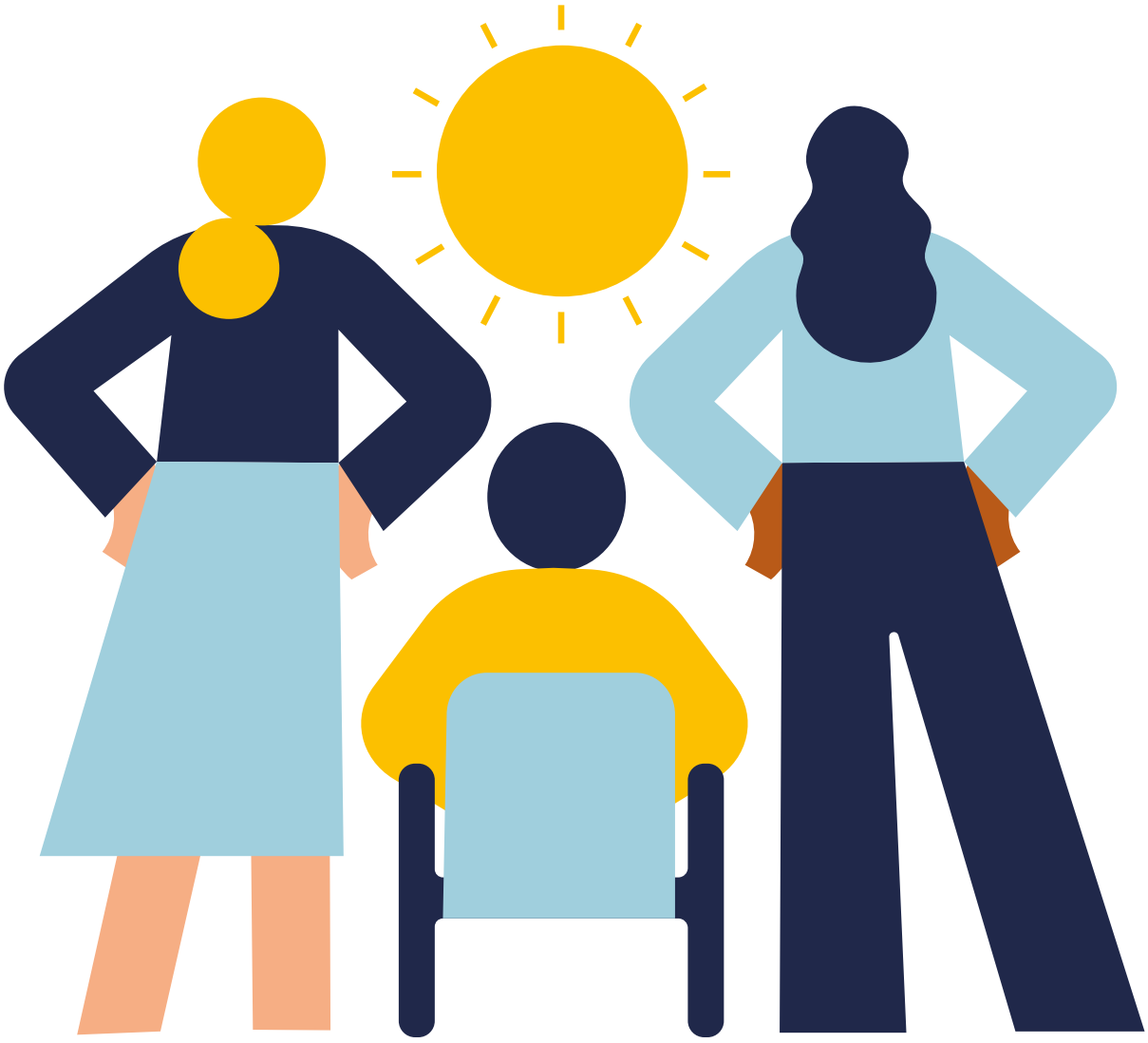
Current evidence is not yet sufficiently strong to recommend the implementation of sense of purpose interventions into clinical practice, public health, or policy changes related to youth mental health. Future interventions should consider:

- targeting all three aspects of sense of purpose (gratitude, goals, values) and not just its individual components
- a person's readiness for discussing and discovering their sense of purpose
- a person's personality type, prior therapeutic experience, culture, and religious orientation.

For future research

- Consider participant diversity and conduct more trials in low-income settings, accounting for cultural acceptability, feasibility, costs, and infrastructure/resource limitations.
- Few studies (4 of 21) were conducted among school-aged adolescents (i.e. those aged 14–17). The latter is an important gap for future research to fill, as the basis of leading a purposeful life starts to develop in early life stages.
- The advisors described the need for greater youth representation in the design of future research studies, to better understand who these interventions can benefit most and why. In particular, young people with lived experience of anxiety and depression should be at the heart of the design of new interventions in this space.

7. Social action



Focus

Prevention and ongoing management of anxiety and depression

Authors

Mariana Steffen, Bruna Martins, Katie Simpson, Victoria Bird, Jennifer Lau & Paul Heritage

Preprint

Steffen MW, Martins B, Simpson K, Bird V, Lau J & Heritage P. SOCIAL ACTION: An active ingredient promoting youth mental health. PsyArXiv, 2022. https://doi.org/10.31234/osf.io/wjyvd

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Social action refers to a set of coordinated activities that seek to promote positive change, focusing on a social or political issue relevant to a community. Being an activist, participating in social movements, volunteering, or joining local campaigns are all aspects of social action.

Social action refers to a set of coordinated activities that seek to promote positive change, focusing on a social or political issue. Many young people around the world engage in social action to make a difference in a community. This engagement, however, can also bring potential benefits for young people's mental health and wellbeing.

Aim

The research team, which also included young people as co-researchers, considered the evidence in relation to the following key questions:

- Is participation in social action associated with (less) mental distress and (better) wellbeing in young people?
- Why does participation in social action benefit mental health and wellbeing in young people?
- Who could benefit from participating in social action and in which contexts could social action programmes have benefits or be harmful?

Methodology

The research team conducted a systematic review of studies where young people (aged 14–24) self-reported their experiences of social action in relation to wellbeing or mental distress. The team's search strategy was developed with input from academic experts and young people. Ultimately, the team opted to use a broad definition of social action, which included terms such as 'activism', 'community action', 'volunteering', and 'civic engagement'. After searching through three databases (PubMed, PsycInfo, and Lilacs) and skimming through other reports and citations, the team identified over 600 relevant articles. Of these, 27 studies using quantitative and/or qualitative methods met the inclusion criteria and were included in the review.

Additionally, the research team ran parallel online workshops with 11 young advisors (aged 18–25, 18% male/72% female) from Latin America (Brazil, Colombia, and Peru) and the UK, who had experience with social action programmes. The young advisors discussed their personal experience of engaging in social action, its impact on their wellbeing, and the potential reasons for this.

Finally, the research team consulted with 16 stakeholders (policy makers, youth facilitators, leaders of community-based organisations) from Brazil, Peru, Argentina, the UK, and the US. The stakeholders shared their thoughts on why social action can reduce mental distress and how it may impact specific young people.

Limitations included:

- Conceptual ambiguities over what comprises social action, how this should be measured and over what time frame. Specifically, studies varied from those measuring volunteering to political activism, using single-item questions versus multiscale questionnaires, to the time frame of social action participation (in the last 12 months versus ever).
- As few studies included young people with anxiety and depression, these findings may have limited applicability for the clinical benefits of participation in social action.
- Relatedly, studies varied as to whether they measured mental distress versus wellbeing, making it difficult to draw strong conclusions.

Key findings: What works, for whom, in what contexts and why?

What works?

- There is evidence to suggest that participation in social action associates with lower levels of mental distress, such as symptoms of depression and anxiety, and higher levels of wellbeing. However, it is important to note that the sizes of these associations varied across studies from non-significant and weak (standardised betas <0.20) to medium-to-high (standardised betas = 0.50 to 0.70).
- Data from longitudinal studies also suggests that these associations remain present after a long period of time has passed since the social action and the measurement of mental distress and wellbeing.

For whom?

The research team found evidence to suggest that social action can be especially beneficial for marginalised youth, as it can increase their sense of self-efficacy and build skills to tackle the systemic inequities they face.

In what contexts?

- Participation in social action tends to be more beneficial to an individual's wellbeing if it is conducted in contexts where young people feel safe, such as in 'low-risk' social action projects (e.g. volunteering) and with organisations that promote social action in a safe and supportive environment.
- For youth advisors and stakeholders, engaging in social action, rather than in solitary activities, might contribute more significantly to supporting and improving mental health.

How and why?

- Participation in social action can benefit young people's mental health and wellbeing by helping to develop a sense of community, empowerment, and interpersonal connections, as well as provide a space for healing.
- Some of the reviewed studies suggested that, when participating in social action, young people learn new skills and create important relationships. Through such activities, they can also come to understand individual experiences of trauma as the result of collective processes of marginalisation. As a result, young people can report feeling more comfortable in their identity and more satisfied with their lives, as well as experiencing better psychological wellbeing.

Insights from young people with lived experience

- Young people that the research team consulted with agreed with the review findings, that participation in social action can contribute to young people's mental health and wellbeing. In particular, they highlighted the benefits of social action on their own emotional health, with one advisor describing *'feeling less anxious and less hopeless'*. There were also advisors who spoke about collective experiences – one workshop participant noted a *'reciprocal exchange'* between *'the one doing the social action and the community impacted by what is being done'*.
- For some of the youth advisors, social action was described as being more than a choice, but a necessity related to social inequities and processes of oppression and marginalisation, which can generate frustration and even mental distress at times. Youth advisors also highlighted that being paid to participate in social action could be more beneficial to their wellbeing: *'It enabled me to support my family financially but also gave me a sense of agency … It showed me that I could do a job that I actually enjoy and be paid for my time.'*

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

Social action may take pressure off clinical services. It is strongly engaging for young people, keeps costs low, and allows young people to be involved in targeting and promoting change in relation to the issues that they believe are the root cause of how they feel. However, engaging in social action might not always improve wellbeing – for example, a lack of appropriate support in social action spaces might expose young people to challenging situations and to emotional struggles. The research reviewed showed that, overall, while negative impacts were reported, they mainly related to systemic inequities rather than to social action itself.

Recommendations

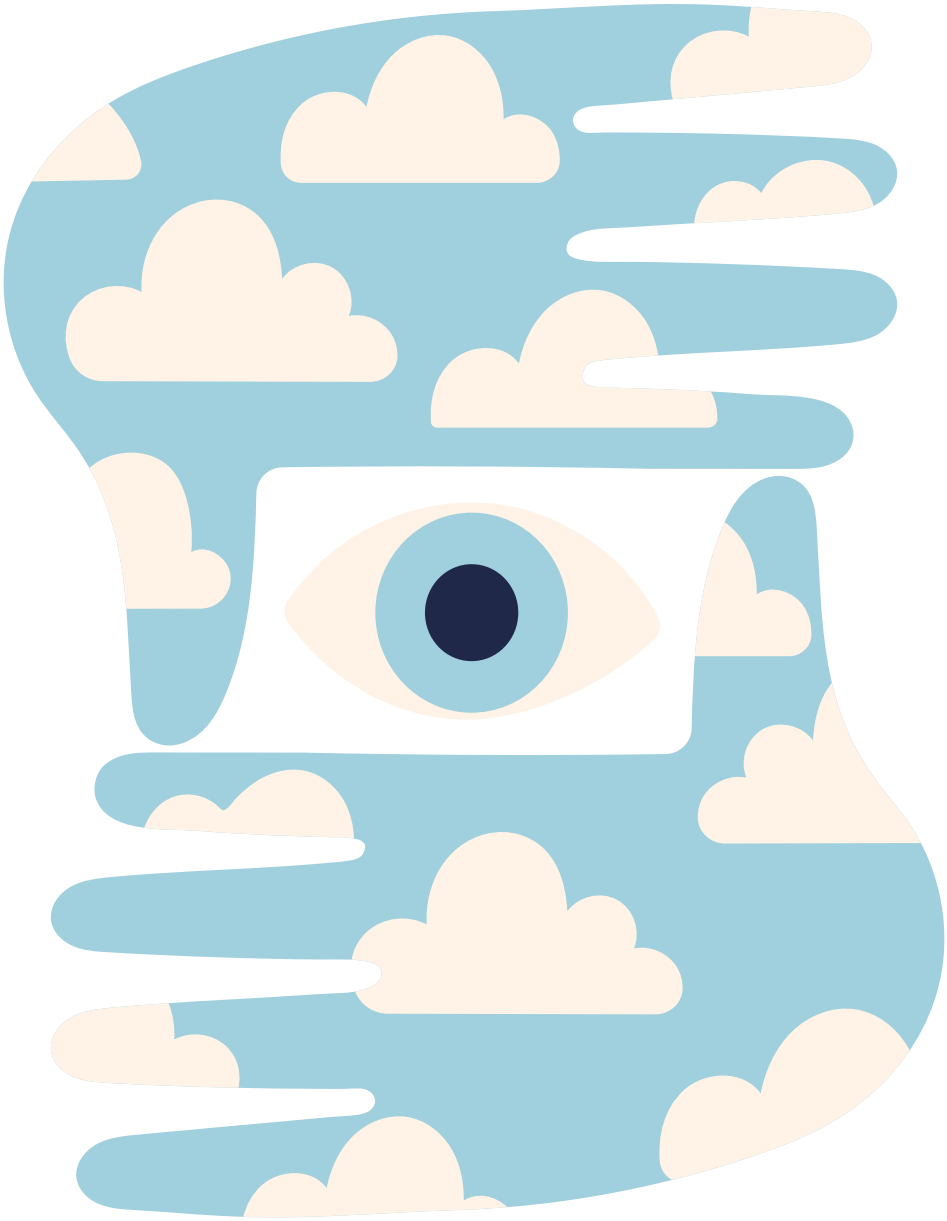
For practice

- Social action programmes should ensure a safe and welcoming environment, with well-prepared facilitators and/or mentors who are capable of supporting youth mental health needs.
- There should be a focus on training social action programme staff and on remunerating young people for their time engaging in social action.

For future research

- Future research could investigate the impacts of social action on mental health by using intervention studies that could help to better track mental health across a social action programme.
- Conducting this sort of study is key to advancing knowledge on the subject and is particularly important in the UK, where social prescribing efforts are growing. Low- and middle-income countries, where populations tend to be younger and resources for proper treatment scarce, may also benefit from more research on this topic.

8. Spiritual and religious beliefs



Focus

Prevention and treatment of anxiety and depression

Authors

Shilpa Aggarwal, Judith Wright, George Patton & Nicola Reavley

For further information

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Spiritual and religious beliefs are multidimensional phenomena that include ideological (e.g. belief in God), intellectual (e.g. importance of religion), social (e.g. frequency of religious service attendance), experiential (e.g. peace and comfort derived from faith), and ritualistic elements (e.g. frequency of prayer/meditation). They are open-ended subjective quests to understand something greater than oneself.

Spirituality and religion are a vital part of life for many young people across the world. Some young people become part of a faith community to practise their beliefs, while others practise their beliefs without being part of any community. For many young people, adolescence is a key period for exploration when issues such as the meaning of life, purpose, vocation, and relationships outside the home become particularly important. The personal meaning of religiosity and spirituality can also become important at this time. Some studies show that religion and spirituality protect some adults against anxiety and depression, but we know less about this relationship in young people.

Aim

The research team considered the evidence in relation to the following key questions:

- What is the role of spirituality and religious involvement (formal and informal) in the prevention and treatment of anxiety and/or depression in young people?
- What are the mechanisms through which these associations operate?

Methodology

The research team conducted a systematic review by searching three electronic databases to find eligible scientific studies. Studies were considered eligible if they:

- had prospective observational or interventional study designs that assessed (i) the associations between religiosity and/or spirituality and anxiety and/or depression; or (ii) the role of religiosity and spirituality in moderating the relationship between risk factors and anxiety and/or depression
- reported on the impact of interventions involving aspects of religiosity and/or spirituality on anxiety and/or depression
- involved young people aged 10–24
- used diagnostic criteria or validated scales to assess anxiety and/or depression
- were peer-reviewed journal articles, in English, published from 2000 onwards.

The team identified 3,706 studies for screening and included 74 studies (45 longitudinal and 29 interventional) in their review. Longitudinal studies explored the relationships of religiosity and/or spirituality with depression and/or anxiety over time, whereas interventional studies assessed the impact of interventions involving religiosity and/or spirituality in young people with anxiety and/or depression.

To inform the study, the research team conducted focus group discussions with eight young people (aged 18–24, all males, from Delhi, India) with experience of using religious and spiritual beliefs to overcome life challenges, and four young people with lived experience of anxiety and/or depression (aged 18–24, two males and two females, from Mumbai, India). They also talked to two religious leaders with over 30 years' experience of leading worship and guiding young people. One leader was based in a rural village in Uttar Pradesh, and the other was based in Mumbai.

Limitations included:

- Very limited number of longitudinal studies from low- and middle-income countries (*n*=1).
- Low quality of most studies (particularly intervention studies, *n*=8 out of 13 RCTs) limiting confidence in the findings.
- Non-representative small samples limiting the generalisability of findings. Most of the intervention studies were conducted in college students with no pre- and post-assessment of religious or spiritual beliefs.
- Short follow-up duration, thus not allowing us to know the long-term impact of these beliefs.

Key findings: What works, for whom, in what contexts and why?

What works?

- Short- to medium-term benefits were seen in young people participating in religious and/or spiritual activities. In particular, spiritual wellbeing protected young people against depression and, to a lesser extent, anxiety.
- Interventions that used religious or spiritual practices and measures to enhance spiritual wellbeing for young people with anxiety or depression were helpful in reducing symptoms.

For whom?

- There is some evidence to suggest that participation in religious practices may help protect against depression and anxiety from mid- to late adolescence (i.e. ages 15–19).
- The protective role of religious or spiritual activities appears to start in early adolescence, with the effect more pronounced among females as well as those experiencing life stressors such as bereavement.

In what contexts?

Many (15 out of 29) intervention studies were conducted in low- and middle-income countries where religion is likely to be a more prominent part of life. Preliminary evidence suggests favourable outcomes when spiritual wellbeing-promoting interventions are delivered in a group format and in those with higher levels of anxiety and depressive symptoms.

How and why?

Based on the evidence from the available longitudinal studies, spiritual and religious beliefs may help young people by strengthening aspects of positive identity, such as self-efficacy and self-esteem, as well as equipping them with social support and coping skills. These beliefs could increase risks for poor mental health when young people feel abandoned or punished by God if they fail to live up to the demands of their religious tradition or experience internal religious guilt or doubt.

Insights from young people with lived experience

- The young people that the research team spoke to viewed spiritual and religious beliefs as a way of life. Their beliefs influenced their lifestyle choices, how they connected with themselves and others, and how they reacted to difficult circumstances.
- Young people also spoke about how religious beliefs allowed them to connect with others holding similar beliefs. They talked about feeling supported during difficult periods, and a sense of kinship by belonging to the community of followers.
- Some young people viewed spirituality as a direct connection between one's own self and a higher power. They said that practices such as chanting and praying helped them understand themselves better, and that in difficult times they felt watched over. To them, these beliefs could be a source of strength.
- However, young people also reported times when activities such as praying were not helpful, especially when the activities were used at the behest of family members and the young people did not want to take part. They also mentioned that the insistence of their family members to encourage them to take part in these activities could be unhelpful.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

Spiritual and religious beliefs are highly accessible to young people when they are under stress. They can be useful in preventing anxiety and/or depression, and may also prove helpful when delivered as part of interventions for anxiety and/or depression. However, it is important to note that not all of the studies reviewed found religion to be helpful. In some studies, increased religious attendance was related to greater anxiety in early adolescence. Negative social interactions with co-congregants, and feelings of being abandoned or punished by God or internal religious guilt or doubt, are some of the hypothesised mechanisms for the observed negative consequences.

Recommendations

For practice

- It may be helpful to introduce spiritual concepts, including self-efficacy and life meaning, during early adolescence to help young people develop a 'meaning making' system. This can prepare them for life in mid- to late adolescence.
- Participation in religious activities offers helpful support to young people if this is considered important to them.
- Praying because of pressure from family members and religious leaders is unlikely to be helpful.
- Exploration of religious and spiritual beliefs in mental health assessments in young people, including any negative feelings about God, and experiences of internal religious guilt or doubt, can help in addressing these.

For future research

There are many gaps in what is known about the relationship of religion and/or spirituality with depression or anxiety. More research is needed:

- on the role that spirituality and/or religion plays in anxiety
- with younger adolescents (aged 10–15)
- in low- and middle-income countries where most young people live
- to find ways to use the influence of religious leaders to promote mental health, where appropriate.

Brain/body functions

9. Hippocampal neurogenesis

Growth of new neurons in the hippocampal region of the brain

Focus

Prevention and treatment of depression

Authors

Alessandra Borsini, Juliette Giacobbe, Gargi Mandal & Maura Boldrini

Preprint

Borsini A, Giacobbe J, Mandal M & Boldrini M. A systematic review of the effect of stress in animals during adolescence, and its long-term consequences during adulthood: Focus on hippocampal neurogenesis, cognitive function and behavioural outcomes. Preprints, 2022. https://www.preprints.org/manuscript/202206.0343/v1

Neurogenesis is the process through which new neurons are generated in the brain. In humans, as with other animals, this process occurs in a particular region of the brain called the hippocampus. The hippocampus is particularly important for the regulation of memory and for learning, but also for anxiety and depression.

Neurogenesis is very active in the hippocampus, especially during adolescence. Evidence from research conducted in animals shows that stress can decrease hippocampal neurogenesis in the brain, and that this is associated with reduced memory and low mood. This is similar in humans. For example, when one is stressed, one may notice experiencing lack of attention, problems with remembering things, and in some cases low mood or depression. Altogether, these symptoms may be associated with a reduction in hippocampal neurogenesis, but this link is still indirect and difficult to test in humans. For this reason, the research team decided to focus their review on animal studies.

Aim

The research team considered the evidence in relation to the following key questions:

- Is reduced hippocampal neurogenesis observed together with a decrease in (hippocampal-dependent) cognitive functions, such as learning and memory, and with an increase in depressive-like behaviours in animals exposed to stress during adolescence?
- Can these negative changes, observed during adolescence, last until adulthood?
- Can treatment with either pharmacological or non-pharmacological interventions, such as antidepressants or diet, reverse or prevent these negative changes?

Methodology

The research team conducted a systematic review of studies assessing changes in adolescent hippocampal neurogenesis in animals exposed to stress models of depression. The included models used biological stressors or behavioural stress paradigms applied to adolescent animals, and measured changes in hippocampal neurogenesis, hippocampal-dependent cognitive functions (such as contextual memory, pattern separation and object recognition), and depressive-like behaviours (such as anhedonia, behavioural despair, immobility and locomotion). They identified 905 papers for screening and included 37 in their review.

Across the whole duration of the project, the research team was supported by a group of young advisors from King's College London. The group consisted of ten advisors aged 16 to 22 years old with lived experience of depression, who were involved in: (1) reviewing the study scope and design; (2) refining and prioritising the research questions; (3) reviewing the search protocol and search terms; (4) exploring the preliminary findings from the review; (5) contributing to the final report, constantly ensuring that the work was clear and understandable by a non-specialist audience.

Limitations included:

- The review is limited by a small number of studies (*n*=37), with the majority of them (*n*=26) conducting experiments only in male animals, which therefore limits the generalisability of findings to females.
- Depressive-like behaviours in animals are not fully comparable to depressive symptoms in humans.
- Some of the studies did not extensively describe the experimental methodologies followed. For example, in some studies it is not clear whether researchers administering the treatment and taking care of the animals were unaware of the treatment each animal received (also called a blinding process), or whether animals receiving a treatment or not were randomly selected. Ultimately, this can potentially affect reliability of the findings and create interpretation biases.

Key findings: What works, for whom, in what contexts and why?

What works?

The research team found that animals exposed to stress show a reduction in hippocampal neurogenesis, memory, and learning, as well as an increase in depressive-like behaviours during adolescence. Moreover, some studies have also shown that these alterations in neurogenesis, cognition and behaviour can last until adulthood, and that treatment during adolescence with antidepressants or a healthy diet, consisting for example of omega-3 fatty acids and vitamin A, can reverse or prevent these negative changes.

For whom?

All studies have focused on animals exposed to either biological stressors or behavioural stress paradigms during the adolescent period.

In what contexts?

The review did not address what works best in different contexts, since there was limited research in this area.

How and why?

Studies show that stress can detrimentally affect neurogenic-related cellular mechanisms, including cell proliferation, neuronal survival and neuroplasticity, as well as induce cognitive impairments and increase depressive-like behaviours. In contrast, antidepressants or dietary interventions can reverse or prevent these detrimental effects by positively acting on the same cellular mechanisms. No specific molecular mechanisms underlying such neurogenic, cognitive or behavioural changes have been investigated by the studies included.

Insights from young people with lived experience

Young advisors were particularly fascinated by the process of hippocampal neurogenesis and its possible involvement in adolescent depression. Moreover, they were interested in understanding the availability and efficacy of alternative non-pharmacological interventions for stress-induced reduction in neurogenesis, and how these could be tested in living humans during adolescence.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

Evidence for the involvement of hippocampal neurogenesis in adolescent depression is still relatively limited and mainly generated from animal studies. At the moment, it is still difficult to accurately test changes in neurogenesis in humans. However, while the research team acknowledges the limitations in measuring neurogenesis in a living human being, findings from the review and from post-mortem studies in depression have proposed neurogenesis as a fundamental ingredient in depression.

Recommendations

For practice

Evidence so far generated in animals suggests that hippocampal-dependent cognitive tests and neurogenesis-specific neuroimaging analyses should be carried out in humans in addition to standard clinical investigations of depressive symptoms, especially in that subgroup of adolescents being previously exposed to stress.

For future research

- More research should focus on testing hippocampal neurogenesis in 'depressed' animals during the adolescent period, as this will provide a better indication of how this process is modulated in depressed adolescent humans. These investigations should then focus on how exposure to pharmacological or nutritional therapeutic interventions during adolescence can improve hippocampal neurogenesis and reduce depressive symptoms.
- Novel neuroimaging tools should be developed as a more direct way of measuring hippocampal neurogenesis in living humans, ultimately bridging the gap between animal and clinical findings, and contributing to the development of novel and more effective treatment approaches targeting hippocampal neurogenesis for adolescents with depression.

10. Omega-3 supplements

Focus

Prevention and treatment of anxiety and depression

Authors

Natalie Reily, Samantha Tang, Ashlee Negrone, Daniel Gan, Veronica Sheanoda & Helen Christensen

Preprint

Reily NM, Tang S, Negrone A, Gan DZQ, Sheanoda V & Christensen H. Omega-3 supplements in the prevention and treatment of youth depression and anxiety: A scoping review. MedRxiv, 2022. https://doi.org/10.1101/2022.06.26.22276840

Omega-3 supplements (e.g. fish oil capsules) are a type of dietary supplement containing omega-3 polyunsaturated fatty acids, which are typically found in oily fish, some seeds, nuts, and leafy vegetables.

Having a healthy and balanced diet is associated with a lower risk of developing mental illness. Of all the dietary components that might be important for mental health, omega-3 supplements have the strongest evidence base. Research in adult populations shows that omega-3 supplements may be effective in reducing symptoms of depression and anxiety. However, whether they also work for young people is less clear. If effective, omega-3 supplements may be an inexpensive and safe treatment option for young people experiencing mental illness.

Aim

The research team considered the evidence in relation to the following key question:

- Can taking omega-3 supplements improve symptoms of depression and anxiety in young people?

Methodology

The research team conducted a scoping review of research studies examining the effect of taking omega-3 supplements on symptoms of depression and anxiety in young people aged 14–24. The team identified 3,245 papers for screening and included 16 studies, of varying quality, in the review. The randomised controlled trials (RCTs; *n*=13) were predominately used to inform the findings. The team also scoped grey literature, such as websites and blog posts, on using omega-3 supplements for mental health in young people. They identified 225 pieces of grey literature, 13 of which were included in the review. The research team summarised findings from the research studies and compared them to the conclusions made in the grey literature.

In addition, two online workshops were run with a group of 11 stakeholders, including 4 young people (aged 16–24) with lived experience of depression and/or anxiety, 3 parents of young people with lived experience of depression and/or anxiety, and 4 health professionals. The stakeholders informed the research process and interpretation of results, and the workshops ensured that the review was focused on questions and concerns that stakeholders had about omega-3 supplements.

Limitations included:

- Few RCTs investigated the effect of taking omega-3 supplements on anxiety symptoms (*n*=5, 38%), as opposed to depression (*n*=13, 100%).
- Only one RCT was conducted in a low- or middle-income country, and all members of the stakeholder group were based in Australia.
- No studies investigated how omega-3 might work to reduce symptoms of poor mental health, and the conditions under which it might be more or less effective (e.g. whether it is better as a stand-alone treatment or when taken with other medication).
- The included studies were variable in terms of the dosage and duration of omega-3 supplement treatment and the sample characteristics, making it difficult to determine who may benefit most.

Key findings: What works, for whom, in what contexts and why?

What works?

- The research team found limited evidence that omega-3 supplements can improve depression symptoms in young people with clinical depression or another mental health diagnosis (e.g. psychosis, bipolar disorder, schizophrenia, anorexia nervosa). Only 3 of the 13 RCTs found evidence in support of omega-3 for depression.
- The research team found some evidence that omega-3 supplements can improve anxiety symptoms. Three of the five RCTs that included anxiety outcomes found evidence in support of omega-3. However, none of the three studies that included anxiety outcomes were conducted in young people with an anxiety disorder; instead, they were conducted in medical students, women with polycystic ovarian syndrome, and patients diagnosed with recent onset psychosis, schizophrenia, or bipolar disorder, who were being treated with risperidone.

For whom?

- The characteristics of study participants (e.g. sex, mental health diagnosis) varied greatly in the included studies, and so there were no clear patterns to suggest that omega-3 works better for some groups over others.
- Other research not included in this review has shown that omega-3 supplements can help adults with symptoms of depression and anxiety. However, the current review found little evidence that these supplements also work for young people aged 14–24, suggesting that age may be a moderator.

In what contexts?

It was not possible to determine in which contexts omega-3 might work best because the reviewed studies varied in the exact omega-3 treatment they administered. For example, factors like the omega-3 dosage, the ingredients within the omega-3 capsules, the duration of treatment, and whether other treatments were also administered to participants differed across studies, limiting comparability.

How and why?

None of the studies included in this review investigated the mechanisms by which omega-3 may reduce symptoms of depression and anxiety. Based on the existing evidence, should omega-3 supplements be effective in young people, it may be that they work through one or more possible mechanisms:

- By reducing inflammation, which is associated with both depression and anxiety.
- By helping to increase serotonin and dopamine levels in the brain, both of which are neurotransmitters implicated in mood and wellbeing.
- By positively impacting on mental health via the generation of new neurons in the hippocampal region of the brain, which is implicated in mood regulation.
- By indirectly improving mental health through their effect on cognitive functioning.

Insights from young people with lived experience

Young people reported benefits such as perceived improvements in cognitive functioning from taking omega-3 supplements, but this was not always in relation to their mental health. After being presented with the review findings, however, young people were surprised by the limited number of research studies and the lack of evidence in support of omega-3 supplements for youth mental health. Some noted they would continue to take omega-3 because of their limited side effects and because of the possibility of other benefits. Despite limited evidence of its efficacy, omega-3 was seen as an acceptable treatment with 'nothing to lose' in trying it.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

The research team found no evidence that omega-3 supplements caused adverse effects or significant side effects. Although it is safe to consume, there is limited evidence that it is effective for reducing symptoms of depression and/or anxiety in young people. Notably, the dosages used in research studies were much higher than those commercially available in capsules, which might limit its affordability at scale.

Recommendations

For practice

- Based on current evidence, omega-3 supplements should not be recommended by clinicians as a treatment for depression and/or anxiety in young people.
- Online articles and websites commonly overstate the benefits of taking omega-3 supplements for mental health. Publishers of online information should therefore be advised to better represent the uncertainty and limitations of existing research. Consumers may be advised to look for sources which refer to peer-reviewed literature and provide an adequate amount of detail, as they are more likely to be factual.

For future research

Future studies should focus on:

- examining how baseline levels of omega-3 fatty acids in the body impact the effect of omega-3 supplements
- systematically testing the mechanisms through which omega-3 may influence mental health
- systematic testing of optimal treatment conditions, including factors such as dosage, treatment duration, and whether omega-3 should be administered as a stand-alone treatment or as an adjunct to other treatments.

Cognitive and attentional skills

11. Emotional controllability

Beliefs about the extent to which emotions are controllable

Focus

Prevention and treatment of anxiety and depression

Authors

Matthew Somerville, Helen MacIntyre, Amy Harrison & Iris Mauss

Preprint

Somerville M, MacIntyre H, Harrison A & Mauss I. Emotion controllability beliefs and young people's anxiety and depression symptoms: A systematic review. PsyArXiv, 2022. https://doi.org/10.31234/osf.io/7ykw3

Emotion controllability beliefs indicate the extent to which people believe emotions are controllable (versus uncontrollable).

People differ in their emotional responses to events, and they also differ in terms of the beliefs they hold about their emotions. One particularly fundamental belief, with potentially important implications for anxiety and depression, concerns the extent to which people believe emotions are controllable (versus uncontrollable). For example, when anxious about an upcoming test, one person may believe there is very little they can do about their anxiety, whereas another may believe they can – if they wish to – successfully decrease their anxiety as they head into the test. This person might, in turn, be more motivated to engage in strategies to deal with their anxiety and be more successful in doing so. After all, it only makes sense to attempt to exert control if one believes these attempts will be successful. We refer to these beliefs as emotion controllability beliefs (ECBs).

Aim

The research team considered the evidence in relation to the following key question:

- In which contexts, for whom, and by what process do emotion controllability beliefs alleviate youth anxiety and depression?

Methodology

The research team systematically searched research that focused on emotion controllability beliefs and anxiety and/or depression in 14 to 24-year-olds. The review identified 19 studies, 16 focusing on links between emotion controllability beliefs and depression, and 11 examining the association between these beliefs and anxiety.

The team also established two panels to provide expert feedback and advice on the different stages of the review. The first panel was made up of eight young people with lived experience of anxiety or depression. Ages ranged from 15 to 24 and the panel members were located in various countries across the world, including Bermuda, India, Nigeria, Rwanda, and the UK. Our second panel included three clinical psychologists with varying areas of expertise from the UK and the USA.

Limitations included:

- The analysis was based on a relatively small number of peer-reviewed studies (*n*=19), and excluded non-peer reviewed studies which may have introduced some biases in the outcomes.
- Most studies were carried out in high-income Western countries such as the USA (*n*=13), Italy (*n*=2), and Australia (*n*=1).
- The majority of studies only told us about associations between ECBs and anxiety/depression (cross-sectional, *n*=13, 68%; longitudinal, *n*=5, 26%). To unpick causality, we need studies that attempt to change people's beliefs and look at the effect this has on anxiety and depression (e.g. intervention studies).
- Study samples mostly consisted of university students (*n*=12, 63%) and were therefore not representative of the global youth population.

Key findings: What works, for whom, in what contexts and why?

What works?

- Believing emotions are controllable was associated with significantly lower depression and anxiety.
- Studies that followed people over time found links between ECBs measured during junior high school (age 12–14) and depression up to four years later.

For whom?

- Some studies indicated that male participants believe emotions are more controllable than female participants, particularly in terms of negative emotions.
- There was also evidence to indicate that believing emotions are controllable decreases with age, and that beliefs remain relatively stable after 17–18 years old.

In what contexts?

- Most studies in the review were carried out in high-income Western contexts, with many of the participant samples made up of university students. This means it is currently difficult to generalise beyond these contexts.
- Evidence from studies with adult populations indicates that our beliefs are shaped by cultural values, including those associated with income, and it is likely that culture also influences the beliefs of young people.

How and why?

Believing emotions are controllable is associated with lower levels of depression and anxiety. This may be because believing emotions are controllable makes it more likely one will use healthy emotion-regulation strategies to deal with emotions, and this, in turn, may lead to lower levels of depression and/or anxiety.

Insights from young people with lived experience

Some young people found the concept of emotion controllability beliefs difficult to make sense of and suggested that their beliefs about whether they could change the way they felt might differ, depending on the situation they were in. Many discussed experiences where they had felt others strongly believed that they should be in control of their emotions at all times, and explained how this made it more difficult to manage how they felt. They argued that time, experience, and practice had helped them to better manage their emotions, and that this had led to beliefs that they could do something about how they feel.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

Believing emotions are controllable appears to lead to better outcomes for most people. However, more research needs to be carried out before stating that holding these beliefs is beneficial for all groups. The youth panel felt that emotion controllability beliefs were accessible and an important concept to discuss. Emotion controllability beliefs appear to be included in some approaches to therapy; however, they are not always made explicit or emphasised to patients (or to therapists in their training).

Recommendations

For practice

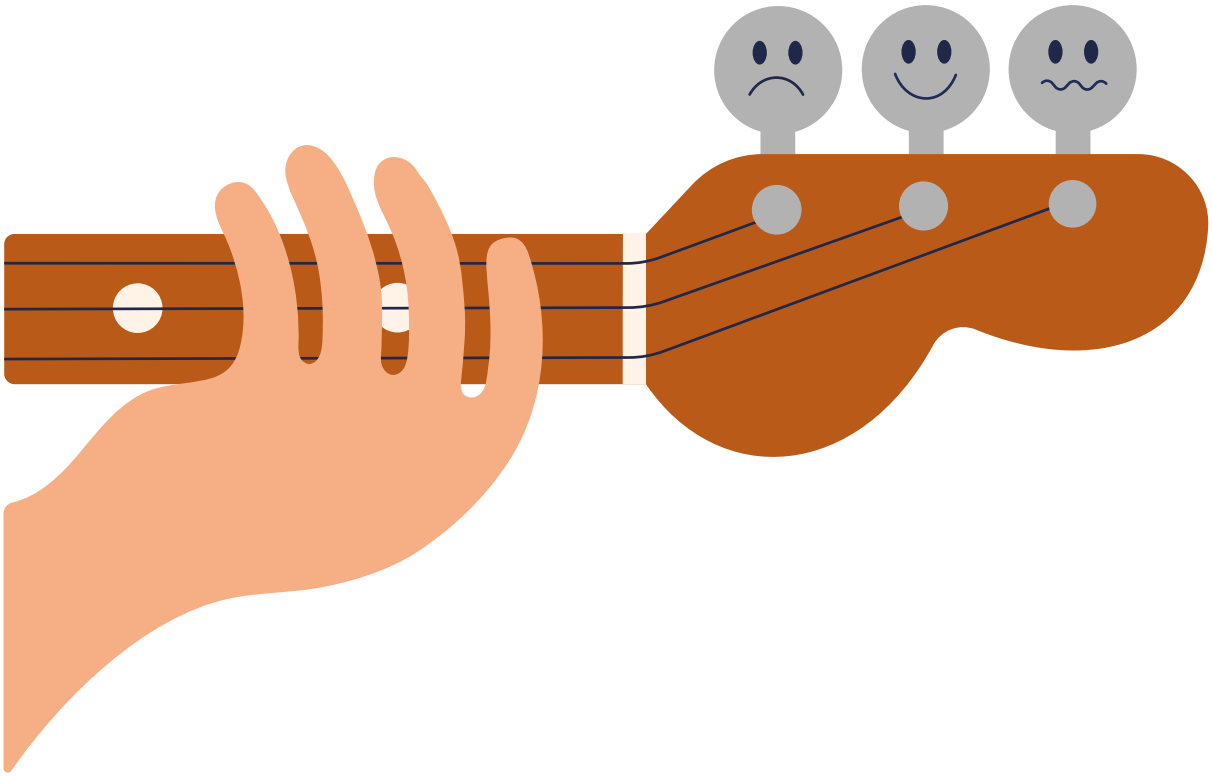
Practitioners such as clinicians, teachers, those providing pastoral care, and educational psychologists may find it useful to discuss the extent to which the person they are supporting believes emotions are controllable. This might help young people make better use of emotion-regulation strategies, given that if people believe something is useful, they are more likely to use it when needed.

For future research

- A focus on emotion controllability beliefs across different genders, ages, and cultural contexts will be important to better understand the demographic and contextual factors that might influence emotion controllability beliefs. It may also help determine whether believing emotions are controllable is beneficial for all groups of people.
- Few studies have focused on interventions seeking to influence emotion controllability beliefs. This is another area where more research is needed.

12. Emotional granularity

Improved ability to characterise emotional experiences



Focus

Prevention and treatment of anxiety and depression

Authors

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Rachel Knight & Tim Dalgleish

Preprint

Dunning DL, Wright G, Bennett MP, Knight R & Dalgleish T. What role does emotional granularity play in adolescent depression and anxiety? A scoping review. PsyArXiv, 2022. https://doi.org/10.31234/osf.io/hqe7r
Supplemental materials available at: https://osf.io/fnqgs/

Emotional granularity, also referred to as emotion differentiation, is a skill that describes how we identify and categorise our emotional state.

Emerging evidence suggests that emotional granularity for negative emotions is an active ingredient in internalising problems, such as anxiety and depression. The mechanisms of action underpinning emotional granularity are not well understood, with no clear causal model that can explain the relationship between emotional granularity and mental health. The most accepted theory is that having good emotional granularity helps better regulate emotions. If superior emotional granularity means better recognition of current negative emotional states, then this should also mean better selection and deployment of the relevant emotion-regulation strategy, to combat negative emotional turbulence.

Aim

The research team considered the evidence in relation to the following key questions:

- How is emotional granularity measured in adolescent groups?
- What is the evidence for emotional granularity's role in adolescent anxiety and depression?
- What is the evidence for emotional granularity mediating the relationship between anxiety/depression and emotion regulation in adolescents?
- In which ways, in which contexts, and for whom does emotional granularity appear to work (or not work) and why?

Methodology

The research team carried out a literature search using the electronic databases PubMed, Web of Science, and Google Scholar. They also hand-searched the reference lists of relevant articles and systematic reviews to identify peer-reviewed evidence that might have been missed in the literature search. The abstracts of 570 papers were scanned and compared against the following inclusion criteria: (i) the participant sample consisted of adolescents and young adults aged 14–24; (ii) the study was published in a peer-reviewed journal and was available in English; (iii) it was a quantitative or qualitative empirical study that allowed the extraction of statistical inferences or patterns of data. A total of 161 manuscripts were downloaded for full-test analysis, with 33 found to be suitable for inclusion.

As part of the review, the research team also ran focus groups with individuals with knowledge or lived experience of anxiety and/or depression to obtain their thoughts on emotional granularity. The focus groups covered how well young people understand and identify with emotional granularity, how the concept of emotional granularity could be best communicated to other young people, and how emotional granularity could be used to improve adolescent anxiety and depression. In total, the research team spoke to 24 young individuals (aged 16–22; 59% female, 33% male, 8% non-binary; 50% White British, 29% Asian or White Asian, 13% other White, 8% African), before and while the report was being produced.

Limitations included:

- None of the included studies involved adolescents with a diagnosis of anxiety and/or depression.
- There were no randomised controlled trials or pre-post, intervention, or cohort studies.
- The majority of study participants were female (92%), limiting the generalisability of the findings to males.
- All of the included studies were conducted by research teams from high-income countries, which limits the generalisability of the findings to low-income countries.

Key findings: What works, for whom, in what contexts and why?

What works?

- It is important to highlight that there were no studies on depressed or anxious individuals included in this review. It is problematic to make generalisations about psychopathology based on research with groups of individuals without anxiety and/or depression, and it makes reaching even tentative conclusions a problem.
- What can be said is that there is relatively good evidence that low emotional granularity contributes to elevated scores on depression scales for typical adolescents. Though the evidence for anxiety is sparse, what does exist shows that low emotional granularity is related to higher anxiety.

For whom?

There was insufficient evidence to reach any sort of conclusion on who might benefit most from emotional granularity.

In what contexts?

Again, there was insufficient evidence to determine in which contexts emotional granularity appears to work.

How and why?

The evidence for emotional granularity's role as a mediator between anxiety/depression and emotion regulation was inconsistent and therefore inconclusive.

Insights from young people with lived experience

Young people had no difficulty understanding the concept of emotional granularity; they felt it was an important skill to learn, and one that they would likely engage with. They could also relate to the mislabelling of their emotions and thought that identifying the cause of emotions could sometimes be difficult, particularly when stressed or angry, as these states were perceived as not being conducive to analysing one's own emotions well. Young people thought it was important to be taught how to recognise and differentiate between their emotions and thought that talking to family or friends about their emotions or keeping a daily diary of emotions could be a useful method for improving them.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

Emotional granularity appears to be safe, acceptable, accessible, and scalable for young people. The team did not identify any adverse/side effects issues, though no research studies were conducted with depressed or anxious adolescents. There were also no pre-post studies, meaning that issues around dropout and adherence could not be examined.

Recommendations

For practice

Although there is no research evidence of emotional granularity being used with depressed and anxious adolescents, the young stakeholders in our focus groups thought it would be useful to be taught how to recognise and differentiate between their emotions.

For future research

- There is a pressing need to examine emotional granularity in depressed and/or anxious adolescents.
- There is a need to ensure that the way we measure emotional granularity has good construct and convergent validity.
- As emotional granularity is a skill rather than a trait, it should be modifiable; however, no studies sought to directly train emotional granularity in adolescent groups.
- Linked to this, there is a need for experimental studies, including randomised controlled trials, pre-post studies, and cohort studies.

13. Grief reduction

Use of strategies to target feelings of grief

Focus

Prevention and treatment of anxiety and depression

Authors

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Preprint

Breen L, Greene D, Rees C, Black A, Cawthorne M & Egan S. A systematic review and meta-analysis of the efficacy of grief interventions for anxiety and depression in young people. PsyArXiv, 2022. https://doi.org/10.31234/osf.io/gy9wv

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Grief-reduction interventions aim to support people who seek help to manage and cope with loss such as the grief of the death of a significant other.

Grief is a normal response to loss. Grief affects and is affected by multiple areas of life, including physical, emotional, cognitive, social, financial, spiritual, and behavioural. The research team focused on grief-reduction interventions for young people (14–24). Grief reduction is a core component relevant to anxiety and depression in young people because grief in young people is common, associated with long-term anxiety/post-traumatic stress disorder (PTSD), depression, and prolonged grief disorder. Experiencing grief at a young age is a risk factor for later negative outcomes, including suicide, yet grief-reduction interventions for this age group are underresearched.

Aim

The research team considered the evidence in relation to the following key questions:

- Based on current evidence, what is the efficacy of interventions for grief on symptoms of grief, anxiety, and depression in young people?
- In which ways, in which contexts, and for whom do grief-reduction interventions appear to work, and why?
- In which ways, in which contexts, and for whom do these interventions appear not to work, and why?

Methodology

A youth advisory committee of ten young people aged 18–24 (mean age=21.60, *SD*=2.01) in Australia and Malaysia, with lived experience of grief and of anxiety and/or depression, co-designed the insight analysis.

The research team searched the scientific literature and found 27 studies of grief-reduction interventions with a total of 2,740 participants (~59% female). Over half of the studies were from the USA (*n*=16, 59%), with two each from Bosnia-Herzegovina, Rwanda, Netherlands, and one each from Korea, Finland, Nigeria, Palestine, and South Africa. The studies were of 41 intervention groups, with 27 (66%) intervention groups focused on children and adolescents (aged 6–18), and the remainder focused on young adults (aged 19–30; *n*=4). All interventions were delivered face to face, but there were three main intervention types – cognitive behaviour therapy (CBT) for grief, supportive therapy, and writing interventions. The research team assessed how well each intervention type reduced symptoms of grief, anxiety/PTSD, and depression.

CBT for grief includes learning to reframe thoughts relating to the loss (e.g. self-blame) and addressing grief-specific issues that maintain distress (e.g. avoidance of socialising with others due to beliefs that it is not acceptable to experience pleasure when grieving). Supportive therapy for grief centres on providing support and encouragement to the young person and an opportunity to speak freely about loss-related thoughts and feelings. Writing interventions for grief generally involve writing about the loss every day for a minimum of 15 minutes to facilitate emotional processing, insight, and acceptance of the loss.

The team also facilitated two online workshops with young people with lived experience of grief and anxiety/depression to ask for their thoughts about grief-reduction interventions. One workshop was for young people aged 14–17 (*n*=2, both aged 16) and the other for those aged 18–24 (*n*=8, mean age=20.75, *SD*=0.80).

Limitations included:

- There was substantial variability in the quality of studies, and only three studies included an active treatment comparison.
- The relatively small number of studies means that results should be interpreted with caution. A larger number of studies may result in different effects or other factors accounting for these differences.
- The relatively small number of available studies meant that a wide range of intervention study designs were included in the review. Future reviews could consider only RCTs when calculating effect sizes.
- Studies included a greater representation of adolescents than young adults, and females were the majority of the samples (20 of the 27 studies had more than 50% female participants).
- No studies examined grief-reduction interventions for reducing depression and anxiety symptoms among young people grieving non-death losses (e.g. parents' divorce).

Key findings: What works, for whom, in what contexts and why?

What works?

- The most effective treatment was CBT for grief, with a large effect for grief and anxiety, and a medium effect for depression.
- CBT for grief that was not trauma-focused was more effective than CBT for grief that focused on reducing trauma (PTSD).
- Supportive interventions had a moderate effect on grief and anxiety, and a small-to-moderate effect on depression.
- One study compared CBT for grief to supportive therapy and found that CBT for grief was more effective than supportive therapy at 6- and 12-month follow-up.
- Writing interventions had a small effect on grief symptoms but no effect on anxiety or depression.

For whom?

Given the range of measures used, the research team was unable to determine whether CBT for grief is more effective at reducing anxiety and depression among individuals with higher grief at baseline. However, CBT for grief participants who had clinically significant grief or PTSD symptoms typically reported larger reductions in grief, anxiety, and depression, compared to non-clinical samples. This pattern has been established in studies of grief-reduction interventions in older adults.

In what contexts?

- In CBT for grief, interventions that did not involve parents or guardians were associated with larger effects for anxiety. In supportive therapy, interventions involving parents or guardians demonstrated greater efficacy.
- For anxiety, individual CBT for grief appeared to be more effective than when delivered in a group format.
- Interventions with a higher degree of CBT strategies (more than 50% versus less than 50%) were more effective.
- Interventions of a medium/long duration (i.e. over ten sessions) worked better than those with a short duration.

How and why?

There were no studies that examined possible mechanisms of action.

Insights from young people with lived experience

Grief-reduction interventions are acceptable to young people but difficult to access (e.g. waiting times and relevant training of health professionals). Young people emphasised the importance of being listened to and having their thoughts and feelings validated. They wanted psychoeducation about emotional states (e.g. that feelings do not last forever) and interventions that are tailored to their needs. However, they did not like interventions based on the stages of grief model or an emphasis on moving on from their losses, because these notions discounted their experiences. The young people wanted specific and practical strategies relevant to their experiences and symptoms. They described homework as important to help ensure the skills learned in the therapy session could be transferred to their lives outside of therapy. They did not appreciate advice about seeking support from peers, and explained that this was because young people tend not to understand grief or know how to help.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

Grief-reduction interventions appear safe and acceptable to young people, but are difficult to access. Online delivery could increase accessibility and scalability of effective treatments to prevent and treat anxiety and depression in grieving young people.

Recommendations

For practice

- CBT for grief is the most effective intervention for reducing symptoms of anxiety and depression in young people experiencing grief, and should be more readily available and accessible.
- Grief should be considered in the assessment of young people experiencing anxiety and depression, and not confused with trauma.
- CBT for grief, of ten sessions or more, in an individual format, with more than 50% of the intervention including specific CBT strategies, should be offered to grieving young people with symptoms of anxiety and depression. This recommendation is consistent with the views of young people, who want interventions that include specific strategies for their symptoms and homework, both of which are core components of CBT.
- Stages of grief and recommendations to seek support from untrained peers should not be included in interventions.

For future research

- Future studies on grief-reduction interventions should examine mechanisms of action (i.e. why/how the treatment works), include comparisons with other interventions, as well as longer follow-up periods, to improve evidence for interventions and the durability of effects.
- The youth advisory committee identified interventions for non-death losses (e.g. parents' divorce) as important, yet we found no grief-reduction interventions aimed at reducing depression and anxiety symptoms among young people grieving non-death losses.
- It is fundamental to consider including young people in co-creating interventions for grief that are specifically targeted to young people.
- Research is required on CBT delivered online for grief in young people.

Human connections

14. Communication in families

Focus

Prevention and treatment of anxiety and depression

Authors

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Preprint

Lloyd A, Lawrence PJ, Donoghue K, Sampson KN, Thomson A & Fearon P. What is the efficacy of family focused interventions for improving communication in the context of anxiety and depression in those aged 14–24 years? PsyArXiv, 2022. https://doi.org/10.31234/osf.io/pv8ur

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Communication, specifically verbal communication, is an essential component of human social functioning and integral to all human relationships, including relationships within families. Communication is the means by which family dynamics are created, maintained, or perpetuated, and can be associated with both positive and negative mental health outcomes.

Adolescents in families with poor communication styles are more likely to experience symptoms of anxiety and depression. Positive communication styles in families can promote harmonious relationships, whereas negative communication styles can lead to conflict and distress. The reasons for the link between poor communication styles and mental ill health are likely to be complex, ranging from increasing psychological distress to preventing adolescents from accessing professional support. However, there is still limited understanding about whether family-focused interventions can improve communication within families, and whether this can improve adolescents' mental health.

Aim

The research team considered the evidence in relation to the following key questions:

- How effective are family-focused interventions in improving communication within the context of anxiety and depression in young people?
- In which contexts and for whom does addressing communication in families appear to work, not work, and why?
- What factors moderate the efficacy of these family-focused interventions?

Methodology

The team conducted a systematic search of electronic databases to find RCTs that had examined family-focused interventions in populations of adolescents (aged 14–24) with anxiety and/or depression. To be included in the review, studies were required to compare the family-focused intervention to at least one other condition (e.g. a waitlist control group). The team identified 2,418 papers for screening and included 8 in their review. Due to the variation across studies, the results were synthesised as a narrative systematic review.

The project had oversight from two groups of experts by experience of anxiety and/or depression: a young person's advisory group (YPAG; ages 16–23) and a parent and carer's advisory group (PCAG). The YPAG met four times and the PCAG met three times, during which the groups discussed the eligibility criteria for the review, the studies that were included in the report, and limitations of these studies. Additionally, there was one joint meeting between the YPAG and PCAG to agree the final conclusions that would be presented in the manuscript. The research team was especially keen to understand which features of communication the experts by experience thought were important for future research to measure, that were not captured in the current literature.

Limitations included:

- Small number of studies included in the review due to the majority of the literature utilising cross-sectional methods.
- Heterogeneous operationalisation of family-focused interventions, including the number of sessions parents attended, the length and content of individual sessions, and the number of sessions within the intervention. As such, it could not be identified whether family-focused interventions were effective in some contexts and not in others.
- Heterogeneity in the way communication was measured, which included self-report by adolescents, parent reports, and observations by research staff.
- Small sample size (range=15–63) in half of the studies included in the review, meaning these studies most likely did not have statistical power to identify differences between treatment arms.
- A disproportionate focus on adolescent–mother dyads, either due to an explicit design choice or fathers not attending as often, making the findings less generalisable to both parents.

Key findings: What works, for whom, in what contexts and why?

What works?

The research team did not find evidence that family-focused interventions improved communication. However, due to the significant limitations of the studies identified, the team consider this an absence of evidence about whether these interventions work rather than positive evidence against their effectiveness.

For whom?

- It may be that communication in families may need to be addressed as a prerequisite before other interventions can be effective. For example, improving communication may allow young people to receive the practical support needed to seek other types of support (e.g. transport to the intervention site).
- However, the research evidence did not allow conclusions to be made about who would most benefit from family-focused interventions due to the small number of highly heterogeneous studies identified in the review.

In what contexts?

There was limited evidence that incorporating family-focused content into existing treatments was successful. Five of the eight included studies found that family-focused interventions improved features of communication. However, only one of these reported greater improvements than other psychological interventions that did not include family-focused content, and two did not include a comparative intervention. As the studies included in this review added family-focused context into the treatment schedule of existing interventions, it may be that interventions need to be developed that specifically focus on improving communication.

How and why?

Due to insufficient evidence, including an absence of evidence on moderators, it is not possible to determine how or why family-focused interventions would be successful in improving symptoms of anxiety and/or depression.

Insights from young people and parents with lived experience

The insight from our YPAG was that it may not be that family-focused interventions are necessary for those experiencing the most severe symptoms. As noted by one of the YPAG members: *'Without it [communication], young people, who may require only very minimal support to reduce their anxiety, can't get that fulfilled.'*

The YPAG members also highlighted that it was necessary to take an individual approach to improving communication by addressing the needs of individual families, stating it is the *'underlying dynamics [of the family] that need to be looked at*'.

The overwhelming consensus of the advisory groups was that this ingredient warranted further study. As stated by one member of the PCAG: *'If young people don't feel that they can speak openly and be heard and validated for their experiences, then that's a really shaky start and where do you get that if it doesn't start in the family home?'*

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

The benefits of improving communication are likely to be high, and risks likely to be low relative to other targets of intervention. Acceptability may present a barrier, as several studies reported fathers being less engaged with the intervention relative to mothers. Young people reported that communication was an accessible target, as it was present outside therapeutic sessions, though specific interventions are costly in time and resources, which poses a barrier to global scalability.

Recommendations

For practice

- The research team recommend caution when integrating family involvement into existing therapeutic treatments for anxiety and/or depression.
- In the studies reviewed, family involvement was often incorporated into the treatment schedule, rather than as an additional component to the existing treatment. This adaption may be problematic as the content around improving communication may replace existing targets within treatment (such as addressing negative patterns of thinking in CBT) and may reduce the effectiveness of these interventions in addressing anxiety and/or depression.

For future research

- It is strongly recommended that funders prioritise the development of new measures of communication that focus on the connection between two individuals achieved through communication, rather than the objective act of communication.
- Both the research team and the experts by experience advocate for further research on this topic to address the questions that we were unable to answer in this review. Specifically: what works, for whom, in what contexts, and why when it comes to family communications as an active ingredient to prevent/treat anxiety/depression.

15. Family support

Focus

Prevention and treatment of anxiety and depression

Authors

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For information

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Generally, family is perceived to include members of a household, nuclear or joint, which fulfil the developmental needs of a child or young person. Family support refers to the involvement of parents/ caregivers and the wider family in relation to parenting skills, relationship building, and the management of one's own emotions in the context of parenting, family engagement, and effectiveness in handling adversity.

The role of family in the development of youth mental health problems has long been a focus of research. In addition to impacting youth mental health through everyday interactions, parents/caregivers and the wider family can have a substantial influence on the mental health of young people; for example, poor family relationships can increase the risk of developing emotional problems such as depression and anxiety. Young people themselves view the role of family as critical in reducing risk factors (e.g. child maltreatment, parent mental illness) and increasing protective factors (e.g. attachment, positive parenting) for youth mental health. While there is evidence on the effectiveness of family-based interventions to improve youth mental health outcomes, these have not yet been studied as an 'active ingredient' to prevent and treat youth anxiety and depression.

Aim

The research team considered the evidence in relation to the following key questions:

- How do young people with lived experience of anxiety and/or depression and their parent(s) define parenting interventions and the involvement of parent(s)/caregiver(s)/family in youth interventions? What contextual factors, not explored in the existing literature, are important to them? What are their recommendations regarding future research on parenting interventions and the involvement of parent(s)/caregiver(s)/family in youth mental health interventions?
- How many studies have used parenting interventions or parent(s)/caregiver(s)/family involvement in youth interventions as a key component of interventions for preventing and treating anxiety and depression? What are the settings and target populations of these interventions?
- How effective are these interventions in the prevention and treatment of youth anxiety and depression?

Methodology

Guided by these research questions, the research team synthesised the experimental literature and integrated this with youth and parent/caregiver perspectives to provide a comprehensive understanding of the role of family support as an active ingredient in youth mental health.

The research team systematically reviewed and evaluated the scientific literature on the role of family-support interventions to reduce symptoms of anxiety and depression in young people. Studies were included if they were RCTs of interventions in which the role of parent(s)/caregiver(s)/family had been used as a preventive or treatment intervention to reduce anxiety and depression among 14 to 24-year-olds. Based on these criteria, the team identified 17,031 records, screened 426 full-text articles, and included 25 RCTs involving 2,626 participants in their evidence synthesis. A large proportion of the reviewed studies (*n*=11, 44%) were conducted in an educational setting (e.g. school, college, university), with 52% of all study participants being students. Other studies (*n*=10, 40%) were conducted in community and healthcare settings and 16% of studies (*n*=4) did not specify study settings.

Additionally, the research team consulted with 40 young people (aged 11–18, 50% male and 50% female) with lived experience of mental health difficulties such as anxiety and distress, and their caregivers, in Australia, India, Kenya, Pakistan, South Africa, and the UK. Individuals were recruited via snowball sampling and online public advertisements. Online in-depth interviews with young people and their caregivers were conducted using a semi-structured interview guide, exploring their views pertaining to family support as an active ingredient in the prevention and treatment of youth anxiety and depression.

Limitations included:

- Of the 25 included studies, 23 (92%) were from high-income countries, and two did not report the country in which they were conducted, limiting the generalisability of findings as the results are specific to high-income countries.
- Due to the small number of RCTs of family-based interventions (<10 studies per category), meta-regression analysis (or subgroup analysis) could not be conducted. This limits the interpretability of the findings to answer which component of family support works particularly for whom.

Key findings: What works, for whom, in what contexts and why?

What works?

- The evidence reviewed suggests that family-support interventions aimed at preventing and treating youth anxiety and depression involve educating parent(s)/caregiver(s) about youth mental health and the effect that mental health problems can have, helping parent(s)/caregiver(s) learn skills to effectively communicate with the young person in a supportive way, and ensuring that parent(s)/caregiver(s) support young people throughout the therapeutic process.
- The current evidence indicates that family-support interventions are highly effective in treating anxiety and depression in young people. Family-based interventions combined with cognitive behavioural therapy (CBT) are highly effective in treating anxiety in young people (pooled effect size -0.81 [95% CI: -1.39 to -0.22]) while it was not significant to reduce depressive symptoms in young people (pooled effect size of -0.18 [95% CI: -0.37 to 0.02]).
- The most frequently reported components of family interventions for young people were psychoeducation, communication skills, social skills, and CBT-based skills such as cognitive restructuring, identifying thoughts, feelings, and emotions.
- There is not enough evidence on the preventive effect of family intervention as only four preventive studies fulfilled the eligibility criteria to be included in the review and pooled effect size showed non-significant effects of these prevention interventions on depressive symptoms in adolescents (pooled effect size -0.30 [95% CI: -0.68 to 0.08]).

For whom?

Family-support interventions delivered to parent(s)/caregiver(s) without any mental health illnesses yielded better treatment effects for young people with depressive symptoms compared to interventions delivered to parent(s)/caregiver(s) with mental health difficulties (there was no data for anxiety).

In what contexts?

Evidence shows that interventions delivered to young people work better when they contain components of psychoeducation and skills training such as communication skills for parents/caregivers as well.

How and why?

The potential underpinning mechanism of family-support interventions as an active ingredient was difficult to establish as the research team did not find any literature focusing on the mechanism of family-support intervention to treat anxiety and depression in adolescents.

Insights from young people with lived experience

All the young people that the research team consulted with identified family support as an active ingredient in preventing and managing youth anxiety and depression. According to them, family support in the prevention of anxiety and depression involves providing a safe environment to the child, showing warmth and affection, and having open, empathetic, and non-judgemental communication with them. With respect to the treatment of anxiety and depression, the expectations that young people had of their parent(s)/caregiver(s) were that they would support them in seeking treatment and provide them with emotional support during and after the treatment process.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

Young people found family support to be an acceptable and appropriate active ingredient. However, they also highlighted that sustainable engagement of families in treatment can be hampered by their potential lack of mental health awareness and stigma. Considerations should be given to mental health stigma, cultural context, accessibility, and affordability of the family-based interventions, especially in low-resource settings. According to parents/caregivers, managing the caregiver's own mental health is the first step towards addressing mental health problems in adolescents. Helping parents/caregivers to build a healthy and friendly relationship with the child and provide emotional support and a non-judgemental environment can help to improve the child's self-esteem and build confidence, which can ultimately help to prevent anxiety and depression in adolescents and improve family cohesion and functioning overall. Moreover, involvement of family support during routine mental healthcare may contribute to increased parental acceptance and treatment adherence and compliance.

Recommendations

For practice

- Family-support interventions for youth anxiety and depression can include components of psychoeducation and communication on how to encourage positive parenting.
- Combining CBT with family-based interventions yields more positive effects on reducing youth anxiety and depression; therefore, involvement of parents/caregivers in adolescent mental health treatment is imperative to bring positive treatment outcomes. However, improving caregivers' own wellbeing is an important dimension to consider for reducing youth anxiety and depression.

For future research

- More rigorous and methodologically robust RCTs need to be conducted in low-resource settings to ascertain the treatment effects of parent/family-based interventions on youth depression and anxiety in these contexts.
- Subgroup analysis along with the identification of active elements of parent/family-based interventions could help to tease out the impact of the most effective family components of multicomponent interventions. Furthermore, the impact of individual components of parent/family-based interventions, when combined with other components of psychological interventions, still needs to be explored.
- Mediation analysis along with the identification of the mechanisms of action underpinning family support could help to draw causal inferences between different elements of family-based interventions, and help us better understand what components of family-based interventions work, for whom, in what contexts, and why.

16. Peer support

Support from a peer who has experienced anxiety and/or depression

Focus

Prevention and treatment of anxiety and depression

Authors

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Preprint

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Peer support can be defined as the support received from another young person who has experienced mental health challenges – in this case, anxiety and/or depression. This support can be received in various forms, including in-person or online, in pairs or in groups. The core values on which peer support is based include self-determination, autonomy, non-hierarchy, reciprocity, hope, and mutuality.

Peer support is a growing field in youth mental health. Most of the literature is focused on interventions in adult populations, where evidence suggests that peer support is a safe, effective, flexible, and cost-effective intervention for anxiety and depression. However, research on the effectiveness of peer support for young people is lacking. We know that peers are especially important during this developmental period of youth, and given the low levels of youth engagement with mental health services, peer support may be a strong candidate intervention for young people with anxiety and/or depression.

Aim

The research team considered the evidence in relation to the following key questions:

- In which ways does peer support work for young people who experience anxiety and/or depression?
- In what contexts does peer support work for young people who experience anxiety and/or depression?
- For whom does peer support appear to work, and why?

Methodology

The research team conducted a systematic review of controlled trials (i.e. randomised and non-randomised) testing peer support for young people. Inclusion criteria included a participant mean age between 14 and 24, peer support provided by someone with relevant lived experience, and the use of at least one outcome measure related to anxiety and/or depression. The team identified 2,569 papers for screening, with nine deemed eligible for inclusion in the review.

Of the nine studies identified, four 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*=2), alcohol and drug misuse (*n*=1), and first episode psychosis (*n*=1). All nine studies were RCTs and altogether included 2,003 participants.

In terms of the interventions that were tested, seven were peer-delivered group sessions held in-person, and two were online interventions that included group interactions in addition to peer moderation or support (e.g. message board, peer-to-peer social networking).

The team also consulted an international steering group of ten young people (aged 18–24) from Australia (*n*=4), Canada (*n*=4), Ireland (*n*=1), and Singapore (*n*=1). Discussion topics aligned with the stage of review (e.g. conceptualising peer support and determining search terms in earlier meetings, through to interpreting results and contextualising findings in later meetings). In addition, they interviewed nine experts (representing Australia, Brazil, Canada, India, Kenya, Nigeria, the United States, and Zambia) throughout the review process. Interviewees were asked about any peer-support programmes they were aware of (to facilitate the broader searches for related research) and the relevance, appropriateness, and feasibility of peer support in their geographical region (to help inform the interpretation and discussion).

Limitations included:

- Only one study tested an intervention specifically designed for anxiety and depression, which means that the majority of studies were designed for another mental health concern (e.g. psychosis) but they tested whether the intervention improved anxiety and/or depression.
- Only one study measured anxiety, and most studies used measures of negative affect rather than depression, which means that only one aspect of depression was being measured.
- None of the interventions tested individual, one-on-one peer support, despite it being common in practice, which means that it cannot be concluded whether this commonly used model of peer support works or not. All of the in-person interventions focused on groups, and while the online interventions allowed for contact with a peer worker, it was in the context of an intervention that mainly facilitated group interactions.
- Only two studies (22.2%) were conducted in low- or middle-income countries (Brazil and Thailand), which means that we don't know how well peer support works in many contexts, or how appropriate it is across different cultural contexts.
- Only one trial included participants with a mean age below 18, which means that based on these trials we can't say whether peer support is effective for adolescents. This is important because, for many people, mental disorders such as depression and anxiety first appear in adolescence.
- Most studies took place in universities, with only two taking place in mental health services and one in a community centre. This is an important limitation because not all young people will attend university, and we need to know how peer support works across different settings if we want to reach all young people.

Key findings: What works, for whom, in what contexts and why?

What works?

There was insufficient evidence to determine whether peer-support interventions work for preventing and/or treating youth anxiety and depression; however, there were some promising findings in some areas:

- There is some preliminary evidence that peer support designed to reduce stigma in adolescents treated in an inpatient setting can reduce depression, as can a group intervention for young adults who had recently used methamphetamine and engaged in sex.
- There is some preliminary evidence that peer support can help reduce anxiety in young people who engage in an online peer-support intervention 'Mood Garden'.
- There is some evidence that peer support for university students can reduce negative affect.

For whom?

- There was insufficient evidence to comprehensively determine for whom peer-support interventions work best; however, most studies included university students who were young adults.
- Steering group members noted that having a diverse workforce of peer workers will likely improve services (e.g. making them more culturally safe, acceptable, and appropriate, thereby improving help-seeking and engagement) and outcomes (e.g. reduction in distress and improvement in hope and empowerment) for a broader range of young people, including marginalised and minority groups (e.g. different cultural backgrounds including First Nations youth, young LGBTIQA+ people, youth experiencing disrupted education, homelessness, or employment instability).

In what contexts?

- There was insufficient evidence to assess in what contexts peer-support interventions work best; however, most were conducted in a university setting.
- One study tested peer support for adolescents in an inpatient setting (meaning both the intervention group and treatment as usual control group received high-level base care). Those in the intervention group who received peer support for stigma reduction showed a significant reduction in depressive symptoms three weeks after the three-week intervention (i.e. just six weeks after they were enrolled in the study and after just three one-hour sessions held weekly).
- Two studies successfully and safely tested online peer-support interventions, which is particularly relevant given the Covid-19 pandemic and the need for increasing accessibility in countries where mental health resources are scarce. One of these interventions (Mood Garden) reduced anxiety and the other (Horyzons) did not reduce depression, but did reduce hospitalisation and improve vocational outcomes (neither of which were the focus outcomes for this review).

How and why?

- The lack of evidence makes it difficult to understand the mechanisms of action underpinning peer support for young people with anxiety and depression.
- To begin to address this gap, the research team drew on findings from this review, previous literature on adults, and knowledge gained from the youth steering group and expert consultations, to propose a preliminary model for the mechanisms of action of peer support. The proposed model encourages consideration of how peer support might improve not just anxiety and depression symptoms, but also associated challenges (e.g. stigma), impacts on functioning (e.g. disengagement from school), and help-seeking pathways and service engagement. Preliminary aspects of peer support are mapped onto these broader areas (e.g. peer support can normalise experiences, help young people re-engage with education, and improve service engagement). This model needs dedicated research (e.g. in-depth qualitative research with peer workers and recipients of youth peer support) for refinement before studies can be designed to test the mechanisms of action specifically for youth depression and anxiety.

Insights from young people with lived experience

The international steering group of young people had a strong sense of the values that underpin the practice of peer work. They also had clear ideas of what peer work should look like and the gaps and challenges currently facing this work on the ground, which mainly focused on peer support within clinical services.

Examples of challenges that were discussed include:

- The tension between the non-hierarchical core principles and values of peer support and the hierarchical medical model that underpins most clinical services.
- A lack of understanding about what youth peer support is and what the role of a youth peer worker is.
- Professional stigma (i.e. that peer workers are seen as less educated or knowledgeable than experts by more traditional qualifications).

While the review found there was a lack of evidence to answer the questions set out, the steering group responded optimistically, suggesting there is a wealth of knowledge to draw on from existing programmes and peer workers. Despite the lack of diversity in which peer-support research has so far been conducted, young people described knowing about several peer-support programmes available in different geographical regions and settings. They also noted how the lack of academic evidence on peer support impacted a number of aspects of their experience, including how clinicians viewed the legitimacy of peer work, how they were allowed to practise it, and the inadequate training available. Young people identified lack of funding and low pay as key issues in peer-support work, negatively impacting upon the quality of services provided and the wellbeing of peer workers.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

The studies identified in this review reported that peer-support interventions are safe, acceptable, and cost-effective. However, local adaptation of these interventions is required to reflect the characteristics of the young people engaging in these services and the governance and support structures in place at a local level. Moreover, the ability to safely deliver online peer-support services is encouraging for the prospect of scalability.

Recommendations

For practice

Current evidence is insufficient to draw any recommendations for practice. However, the lack of consistent reporting across research studies likely reflects gaps in existing practice. These gaps include clarity around the role of peer workers and the degree to which peer-support interventions are designed, implemented, and tested in accordance with core peer-support values.

For future research

- Although the evidence in this area was limited, there were some promising early findings that should be expanded upon in future research (e.g. the Honest, Open, Proud and Mood Garden interventions for depression and anxiety, respectively).
- More rigorous and larger-scale trials of peer-delivered group interventions for university students may also be warranted.
- Qualitative research to further refine and develop proposed mechanisms of action is needed, as are studies that investigate and test mechanisms of action underpinning peer support in youth depression and anxiety.
- The most significant gap in this review was a lack of studies testing individual peer support for youth anxiety and depression; these interventions should be co-designed with the existing peer workforce and young people who have received peer support so that interventions are based on current practice and represent the 'best bet' for what might work.
- Any future trials testing peer-support interventions (whether they be group-based or individual) should also use implementation science methodologies to ensure that an intervention found to be effective is also readily implementable in practice.
- Investigate the age, characteristics, and types of lived experience that peer workers and peers should ideally share to maximise connection and relatability and minimise power dynamics.
- Investigate the best ways to test the effectiveness of peer support for young people – for example, what outcome measures should be used, how long interventions should last, and over what time period follow-up assessments should occur in trials (i.e. for how long do we expect to see an effect of peer support on a young person?).
- Ensure that detailed descriptions of the peer-support interventions and the peer workers' training and supervision procedures are adequately designed, implemented, and described in future studies and reports. This will help clarify what the active ingredients are in the interventions, which will help researchers replicate and extend studies, programme managers know how to deliver and implement interventions, and policy makers know what interventions to fund.

17. School connectedness

Sense of connection to school life

Focus

Prevention of anxiety and depression

Authors

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This report was developed in partnership with members of the youth advisory committee: Jackson Smith, Clara Tambunan, Mary Patricia Lou Vinluan, Nuha Yahya & Mac Zamani

Publication

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School connectedness reflects the quality of engagement that young people have with their peers and teachers, and learning within their school environment.

The social and emotional development of adolescents is of increasing interest to policy makers, in both health and education. It underpins good mental health and is increasingly recognised as important in learning. School connectedness has attracted attention as a potentially modifiable protective factor for common mental health problems, such as depression and anxiety. However, the extent to which school connectedness may prevent the onset of these conditions and/or promote their remission is unclear. For example, while schools may provide a source of social and emotional support to students who feel more connected to their school, school connectedness might also be associated with academic pressures, which in turn may lead to anxiety and poor mental health.

Aim

The research team considered the evidence in relation to the following key questions:

- What is the relationship between school connectedness and anxiety and/or depression?
- What is the effect of interventions designed to improve school connectedness on anxiety and/or depression in young people aged 14 to 24?

Methodology

The research team systematically searched four electronic databases for peer-reviewed quantitative longitudinal or intervention studies, published from 2011 to 2021 in English, examining the relationship between school connectedness and depression and/or anxiety. The studies had to be conducted in an educational setting, involve participants aged 14–24, and include outcome measures of depression and/or anxiety. Ultimately the search identified 3,552 articles, which resulted in 34 longitudinal and 2 intervention studies being included in the review. Thirty-one studies (including the two intervention studies) examined depressive symptoms as an outcome, six studies examined anxiety symptoms, and ten studies examined a combination or equivalent (e.g. internalising symptoms). Due to the heterogeneity of measures used to assess school connectedness and mental health outcomes, as well as the variation in effect sizes, a meta-analysis could not be performed.

In addition to their review, the research team partnered with five youth advisors (aged 16–21, 60% male) with lived experience of mental health problems and/or the schooling system in Australia, Indonesia, and the Philippines, to ensure that youth perspectives informed the interpretation and dissemination of the findings and future directions for research and practice.

Limitations included:

- Most studies measured depression.
- The measures of school connectedness used in the studies reviewed were rarely validated, and their psychometric properties were often not reported.
- There were inconsistent and incomplete reports of effect sizes and estimates of uncertainty in the studies reviewed, which prevented a meta-analysis from being conducted.
- As many studies did not justify sample size or describe the characteristics of participants lost to follow-up, attrition bias may have contributed to studies overstating the protective effect of school connectedness and/or biasing findings towards a specific group (e.g. those who have stayed in school rather than those that dropped out).
- The failure of some studies to adjust for key confounders (e.g. baseline depressive and anxiety symptoms, sex/gender) also limited the causal inferences that could be made.
- Most studies were from high-income countries (*n*=33 out of 36, 91.7%), primarily the USA (*n*=25, 69.4%). Students were mostly from middle and secondary schools, and none were from tertiary or further education settings. This limits the generalisability of the findings.

Key findings: What works, for whom, in what contexts and why?

What works?

- Most of the studies reviewed (*n*=21, 58.3%), including the two intervention studies, found a significant protective relationship between school connectedness and symptoms of depression and/or anxiety. However, there were a few studies (*n*=3, 8.3%) which found a non-significant relationship, potentially due to differences in how school connectedness was measured.
- There was insufficient evidence to determine whether improving school connectedness promotes remission in young people already experiencing depression and/or anxiety.

For whom?

- Some longitudinal studies (*n*=7, 20.6% of the longitudinal studies) examined sex/gender effects on the association between school connectedness and symptoms of anxiety and/or depression, but no clear pattern was identified.
- A small number of longitudinal studies conducted in the US (*n*=4, 11.8% of the longitudinal studies) found moderation or interaction effects for minority groups (e.g. one study found higher levels of school connectedness at baseline were associated with lower depression at follow-up for adolescents identifying as non-Hispanic White, Hispanic, or Latinx, but not for adolescents identifying as Black/African American).
- This suggests that school connectedness may have a stronger association with depression and anxiety in some individuals than others.

In what contexts?

The research team did not find literature on what works best in what contexts.

How and why?

- The research team did not identify any longitudinal studies that examined how and why school connectedness is linked to later anxiety and/or depression.
- Of the two intervention studies reviewed (one from the US and the other from India), both were designed to increase school connectedness and improve depression. One sought to do so by improving the self-esteem of young people and the other by improving relationships at school.

Insights from young people with lived experience

The concept of school connectedness having an impact on mental health resonated highly with, and was acceptable to, the youth advisors. As one youth advisor, 18, from Australia explained: *'I've had mental health issues my whole life… I noticed the second that I moved schools to a more healthy environment, the rapid improvement of my mental health.'* Youth advisors shared that school connectedness encompasses notions of feeling acknowledged by teachers, peers, parents, and the wider school community; relationships characterised by empathy, care, active communication, respect, and genuineness; a cohesive and welcoming school environment; feeling included, a sense of belonging and not feeling alone; feeling able to express their identity and personal strengths; and engaging in learning and participating in enjoyable school activities. While youth advisors acknowledged that school connectedness is a multifaceted construct, the relational components of school connectedness were considered paramount. Even when youth advisors felt connected to the school as an institution and enjoyed engaging in activities and learning, poor relationships with teachers, peers, and other school staff had a strong impact on their overall sense of connectedness and subsequent mental health. The quality, rather than the quantity, of relationships was perceived as critical.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

Most studies were rated as 'good' quality. However, with only two intervention studies included in this review, evaluation of the real-life application of school connectedness is limited, despite both studies showing positive and significant effects.

Globally, most young people are enrolled in schooling, with rising rates of secondary school participation in low- and middle-income countries, and the most important relationships outside the family often found in schools. This indicates that interventions to promote school connectedness are likely to be highly accessible. Notably, interventions designed to improve school connectedness in a high-income country (USA) were also feasible and effective at improving depressive symptoms in a middle-income country (India). Despite this, multisectoral interventions will likely need to demonstrate benefits to both the health and education sectors in order to be sustained and scaled.

While no issues around safety were reported in the intervention studies reviewed, future interventions should consider the possibility of inadvertent harm.

Recommendations

For practice

- School connectedness has many features that make it attractive as an active ingredient to help with youth anxiety and depression. It focuses on changing relationships within education systems in which governments already make substantial investments. It is also likely to be a win–win intervention, with benefits for both mental health and learning, hence making it an appealing option for stakeholders in both sectors.
- Fostering school connectedness, especially though supportive relationships between all members of a school community, is a potential way to promote mental health and may be a novel target for the prevention of depression and anxiety.

For future research

There is need for:

- more studies conducted in places other than the USA
- better designed studies which look at the benefits of school connection for depression and anxiety over long periods of time
- studies to explore how school connectedness protects against depression and anxiety, and whether its benefits extend to individuals who have existing mental health disorders.

18. Social inclusion

Improved inclusion for those who are minoritised on the basis of their identity (e.g. sexual and gender)

Social inclusion can be broadly defined as improving the terms of participation in society for people who are disadvantaged on the basis of age, sex, disability, race, ethnicity, origin, religion, or economic or other status, through enhanced opportunities, access to resources, voice, and respect for rights.

Young people who are marginalised, socially excluded, or discriminated against are at increased risk of developing mental health problems like depression and anxiety. One way to prevent and treat depression and anxiety is to promote social inclusion. Improving inclusivity and acceptance through interventions could reduce the risk of these mental health problems. Understanding how and why social inclusion works could enhance the efficiency and effectiveness of prevention and treatment for young people.

Wellcome commissioned two different teams to review social inclusion as an active ingredient; each team took a slightly different approach to reviewing the evidence.

18A. Social inclusion

Focus

Prevention and treatment of anxiety and depression

Authors

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For information

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Aim

The research team considered the evidence in relation to the following key questions:

- What types of social inclusion interventions are used to prevent and treat youth anxiety and/or depression?
- How effective are social inclusion interventions for preventing and treating youth anxiety and/or depression?
- Are there specific groups of young people for whom social inclusion interventions are most effective?
- What are the mechanisms through which social inclusion interventions may reduce symptoms of anxiety and/or depression among young people?

Methodology

The research team conducted a stakeholder-informed, participatory systematic review of social inclusion interventions, which aimed to prevent or treat youth anxiety and/or depression. The team was particularly interested in studies which measured levels of social inclusion and symptoms of anxiety and/or depression, both before and after the intervention. Of the 75,000 studies originally identified for screening, only 12 met the criteria for inclusion in the review. The included studies tested different interventions using a range of strategies to increase social inclusion and reduce anxiety and/or depression, including social skills training, psychoeducation, life skills training, cash transfers, creative writing, mentorship programmes, and youth empowerment programmes. Eight of the 12 included studies were RCTs and thus suitable for a meta-analysis.

Throughout the review, the research team also engaged with a youth advisory group of 13 young people, eliciting their feedback during the conceptualisation, analysis, and dissemination stages. The youth advisory group included five Ugandan, five Syrian, one Egyptian, and two South African individuals, aged 21–24, many with lived experience of anxiety, depression, and/or social exclusion.

Limitations included:

- Only studies published in English were included in this review, affecting cultural bias.
- Of the 12 studies included in this review, 5 came from North America (41%), 2 from the East Asia and Pacific region (17%), 2 from Europe and Central Asia (17%), 2 from sub-Saharan Africa (17%), and 1 from South Asia (8%). No eligible studies conducted in the Middle East, North Africa, Latin America, or the Caribbean were identified.
- Of the included studies, all focused on individuals identified as being at risk of social exclusion. Only one study also targeted those individuals who are responsible for the inclusiveness (or otherwise) of a social environment.
- Only one study was assessed as being of high quality, with low ratings largely due to poor reporting of masking and the use of less rigorous experimental designs.
- For the meta-analysis, limitations included large heterogeneity across interventions, lack of standardised measures for depression and anxiety, and various time points of assessment across studies.

Key findings: What works, for whom, in what contexts and why?

What works?

- Although not many studies have assessed the impact of social inclusion interventions on youth anxiety and/or depression, those that have been done show promising results and strongly suggest that social inclusion could be an important component of interventions to promote youth mental health.
- Social skills training in small groups was the most common modality used to promote social inclusion. Social skills training was typically integrated with other modalities, including mindfulness and yoga breathing exercises; cognitive and interpersonal therapy; systemic family therapy; and a holistic psychoeducation programme. Social skills training was also integrated into expressive arts-based interventions like song-writing workshops and hip-hop groups. Life skills programmes delivered in schools as part of the curriculum were shown to be effective for promoting social inclusion in two studies.
- In our meta-analysis, pooled standardised mean differences (SMDs) based on random-effects models showed medium-to-large benefits of interventions on improving depression and anxiety symptoms among adolescents (n=8; SMD=-0.62; 95% CI, -1.23 to -0.01, p<.05).

For whom?

The intervention studies reviewed involved a range of sample populations, including economically marginalised groups, individuals with peer social problems, autism spectrum disorder, and disabilities, making it hard to determine for whom these interventions worked best.

In what contexts?

Interventions were delivered in a range of settings and contexts. Social skills training in small groups was the most common modality in these interventions. Interventions were largely delivered using existing platforms such as schools or recreational groups for young people. The research team was not able to detect any effects suggesting that certain settings or contexts of delivery shaped effectiveness. They were also not able to find any studies that investigated how changing the physical environment (through, for instance, using universal design principles in urban planning) might be an effective way to increase access to social and public spaces, as part of an adolescent mental health intervention.

How and why?

- It is clear from the studies identified that a range of modalities have been successfully used to promote adolescent mental health and treat mental health problems by increasing social inclusion. However, the mechanisms by which these interventions achieve their outcomes are poorly understood. However, it appears that increasing young people's access to resources, equipping them to participate in the economy (e.g. through cash transfers), and improving their ability to navigate social environments (e.g. through social skills and life skills training) likely plays a role in improving their mental health through opportunities for economic and social participation.
- However, the necessary and sufficient conditions required to increase social inclusion and reduce depression and/or anxiety are unclear. The mechanisms by which social inclusion interventions achieve their outcomes are poorly understood.

Insights from young people with lived experience

The review findings resonated with the project's youth advisory group, but they wanted to see more work – including participatory research – done with specific groups of individuals at risk of social exclusion. They were particularly interested in seeing future work foreground the voices and social inclusion priorities of young people with disabilities, and young people from refugee backgrounds.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

The research team did not find any evidence of adverse effects. There is some evidence that social inclusion interventions could be an acceptable strategy to prevent and treat adolescent depression and anxiety. The fact that social inclusion interventions were commonly integrated with existing programming and delivered through schools or recreation groups for young people suggest that they may also be scalable.

Recommendations

For practice

While there is only a small body of evidence exploring social inclusion as an active ingredient to prevent or treat youth anxiety and/or depression, the evidence that does exist is promising and suggests that promoting social inclusion could be an effective way of addressing youth mental health.

For future research

- More research is needed to explore whether promoting social inclusion is effective in reducing rates of youth anxiety and depression, and if so, how it works and how exactly social inclusion can be achieved.
- In particular, rigorous studies with less restrictive exclusion criteria (for instance, not excluding people with intellectual disabilities or serious mental health problems, as is currently being done in many studies) and validated measures of social inclusion are needed, to deepen our understanding of the links between youth mental health and social inclusion.

18B. Social inclusion

Focus

Prevention of anxiety and depression

Authors

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Preprint

Schlief M, Stefanidou T, Wright T, Levy G, Pitman A & Lewis G. Promoting inclusivity and acceptance of diverse sexual and gender identities in schools: A Rapid Realist Review of universal interventions to improve mental health. MedRxiv, 2022.
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Lesbian, gay, bisexual, trans, and queer (LGBTQ+) young people are more likely to experience anxiety, depression, self-harm, and suicide than their heterosexual or cisgender peers.

Aim

The research team considered the evidence in relation to the following key questions:

- What universal interventions exist to promote inclusivity, positivity, and acceptance of diverse sexual and gender identities in schools and how, where, and when were they implemented?
- For whom do these interventions work or not work, in which contexts, and why?

Methodology

The research team conducted a Rapid Realist Review. This approach aims to produce a conceptual framework to explain how interventions might work, for whom, in which contexts, and why. The aim is to develop, refine, and test theories about how interventions trigger mechanisms, which interact with contexts, to generate outcomes. They conducted a systematic search of the literature, looking for studies of any design (including quantitative, qualitative, implementation, and intervention studies) published in English, but they also searched for unpublished non-peer reviewed reports posted on websites. To be included, studies had to involve young people who were aged 11 to 18 and attending secondary schools. While the team was primarily interested in universal interventions aimed at all students and teaching staff, they also included interventions aimed solely at students or staff. Of the 5,171 records identified, 407 full-texts were screened, and 54 included in the review (53 peer-reviewed studies and one grey literature article).

The team also worked with eight LGBTQ+ young people (aged 11–18) who had experienced anxiety, depression, self-harm, or suicidal thoughts or attempts. Three meetings were held with these young people so they could shape the direction of the project, interpret the findings, and discuss what they think works in the real world and why. Input was also received from other experts, including two members of the UK government Department for Education (DfE), a school governor, and a teacher.

Limitations included:

- The majority of included studies (*n*=51, 94%) were conducted in high-income countries (Australia, Canada, Italy, Israel, Ireland, Netherlands, New Zealand, Norway, Taiwan, UK, US), with only three studies (6%) conducted in low- and middle-income countries (South Africa, Philippines).
- Only 13 studies (24%) included data on mental health outcomes.
- Consistent with the Rapid Realist Review approach, the team did not assess the methodological quality of individual studies. Instead, they assessed the relevance of each study to the programme theories, which were the main outputs of the investigation.
- There was little evidence on whether the effectiveness of interventions varied according to age, ethnicity, or symptom severity.

Key findings: What works, for whom, in what contexts and why?

What works?

The authors identified five types of universal intervention designed to promote inclusivity and acceptance of diverse sexual and gender identities in secondary schools, and produced a conceptual framework to explain how these interventions might work, for whom, in which contexts, and why:

- Gay–Straight Alliances or similar clubs (e.g. Pride clubs): school clubs attended by LGBTQ+ young people and their allies. These provide safe spaces and lead education and awareness-raising initiatives.
- Inclusive anti-bullying and harassment policies: school-wide policies which state that young people should not be bullied or harassed because of sexual orientation or gender.
- An inclusive curriculum: one that aims to promote diversity and equality for all students. LGBTQ+ inclusive curricula include positive representation of LGBTQ+ people, history, and events and cover topics around sexual orientation and gender identity.
- Workshops including media-based interventions: these can raise awareness about homophobic, biphobic, and transphobic bullying and discrimination. They might involve one-off talks, film screenings, or theatre performances.
- LGBTQ+ ally and staff training: training may include education and awareness-raising on LGBTQ+ issues, ways to intervene when bullying and harassment occurs, and proper use of language and pronouns.
- The interventions listed above could reduce homophobic, biphobic, and transphobic bullying experienced by LGBTQ+ students. They might also encourage heterosexual and cisgender students to intervene when they witness bullying based on sexual orientation or gender.
- These interventions can also improve inclusivity and acceptance. There was evidence that Gay–Straight Alliances or similar clubs, and inclusive anti-bullying and harassment policies, can reduce self-harm and suicidal thoughts and attempts among LGBTQ+ students.

For whom?

- The interventions listed above may be less effective for bisexual and trans students compared with lesbian or gay students, so they may need to be adapted to be effective for these students.
- Evidence suggested that it might also be harder to change the attitudes and behaviour of non-LGBTQ+ boys than girls in the longer term.

In what contexts?

- Gay–Straight Alliances and similar clubs might be more effective when LGBTQ+ teachers attend them, and where the school climate is already positive so that young people are not bullied for attending them.
- Inclusive anti-bullying policies might be more effective when teachers are aware of them so they can implement them, there is education for the bullies, and there are multiple policies in the least safe schools.
- An inclusive curriculum might work best when it includes positive representation of the achievements and contributions of LGBTQ+ role models, teachers are properly trained, and it is implemented from an early age.

How and why?

The findings suggested that the universal interventions identified in this review are likely to improve the mental health of LGBTQ+ young people because they increase inclusivity and acceptance and reduce bullying, harassment, and discrimination. This is likely to happen because non-LGBTQ+ students and teachers become more educated, compassionate, understanding, and accepting.

Insights from young people with lived experience

The LGBTQ+ young people that the research team consulted with described this active ingredient as resonating strongly with them. Young people spoke about the importance of normalisation; they wanted to see sexual and gender minorities represented as equals, to show that it is normal and commonplace for people not to be heterosexual or cisgender. Young people said that inclusive school environments that accepted and promoted diverse sexual and gender identities would likely improve their mental health. They were also particularly supportive of an inclusive curriculum, which would ensure that everyone gets taught about LGBTQ+ events and history. In line with this, they also said that school-based interventions should be universal and include teachers, as well as heterosexual and cisgender students. Young people liked the idea of universal interventions because it allows for all students to be included and helped, without anyone being singled out.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

The interventions identified in this review are universal, and hence, potentially accessible to all young people who attend school. Moreover, the young people that the research team consulted with thought that each of the interventions identified in the review seemed to be accessible and scalable worldwide. The potential issues with safety are described below:

- In a study conducted in the Netherlands, there was some evidence that positive attitudes towards sexual minority and trans students, and willingness to intervene, declined after a peer-led intervention, particularly among male students. This could have been due to the content and nature of the intervention as well as the wider school context.
- When inclusive curricula face a backlash from the wider community, they might lead to increased bullying of sexual minority and trans students.
- When gender equity policies are implemented in schools that are hostile to sexual and gender minorities, these students might experience increases in bullying or isolation.
- If the wider school environment is not supportive, Gay–Straight Alliances or similar clubs could increase bullying because the visibility of sexual minority and trans students is heightened.

Recommendations

For practice

The review findings provide guiding principles to help schools develop and implement universal interventions, which could improve inclusivity and acceptance for LGBTQ+ students and reduce their risk of mental health problems.

Teaching staff should consider the order in which interventions are implemented. For example, inclusive curricula and anti-bullying/harassment policies should be implemented before Gay–Straight Alliances or other Pride clubs are initiated, as this would indicate to the school community that bullying based on sexual or gender identity is not tolerated.

For future research

This review should encourage future research to confirm, refute, or refine the theories developed. In addition, future research should:

- be conducted outside of North America, to explore how these interventions might work in different geographical contexts
- rigorously investigate, using validated outcome measures, the effects of these universal interventions on anxiety and/or depression in youth
- investigate whether the effectiveness of these interventions varies according to sexual orientation, gender, age, ethnicity, or other characteristics.

19. Working alliance

A functional and collaborative relationship with a helper

Focus

Management of anxiety and depression

Authors

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Preprint

Dambi JM, Chauke R, Kaiyo-Utete M, Mills R, Shumba R, Muchemwa S, Musesengwa R, Verhey R, Abas M, Hirsch CR & Chibanda D. The association between working alliance and treatment outcomes in the management of anxiety and depression in young persons aged 14–24 years: A synthesis of a scoping review and stakeholders' consultations. Research Square, 2022. https://doi.org/10.21203/rs.3.rs-1574622/v1

A working (or therapeutic) alliance is a multidimensional construct referring to a mutual and collaborative relationship between a client and therapist. A functional working alliance hinges on shared confidence that therapy will be helpful and concurrence between the client and therapist over the assignment of therapy tasks. The relationship includes mutual trust and reciprocal liking.

Systematic reviews of therapies to treat depression and anxiety, almost exclusively in adults, demonstrate that working alliance is essential across psychotherapies. A functional working alliance, as perceived by both client and therapist, predicts greater uptake of interventions, client engagement, adherence to treatment, and symptoms reduction. Conversely, a ruptured or poor working alliance reduces the effectiveness of efficacious treatments. Despite this, there are critical gaps in our understanding of the importance of a working alliance in low-intensity therapies for young people. For example, the exact mechanisms by which a viable working alliance influences treatment success in young people experiencing anxiety and/or depression is unknown.

Aim

The research team considered the evidence in relation to the following key questions:

- What is the role of the working alliance in the ongoing management of anxiety and/or depression? Does a better working alliance improve the clinical outcomes of young people (aged 14–24) with anxiety and/or depression?
- What different elements of the working alliance influence treatment outcomes? What elements are considered most important to young people (aged 14–24 with anxiety and/or depression) and their therapists?
- What client and/or therapist characteristics are essential in the formation and maintenance of an effective working alliance, capable of influencing treatment outcomes?

Methodology

The research team conducted a scoping review to critically appraise and summarise the existing evidence on the impact of working alliance on anxiety and/or depression outcomes among young people aged 14–24. Studies were included if they involved quantitative experimental designs, reported on working alliance in young people with anxiety and/or depression in any given setting, and were published in English up until August 2021. Searches yielded 274 relevant articles, with 70 full-text articles assessed for eligibility, and 27 articles included in the team's qualitative synthesis. Of these 27 studies, CBT was the most commonly applied treatment modality (*n*=16, 59%), and most therapeutic sessions were conducted on an individual basis (*n*=18, 67%), with only two studies (7%) utilising digital therapy platforms.

Throughout the review process, the research team worked collaboratively with seven young people with lived experience of anxiety and/or depression (aged 18–26, 43% male). The team also conducted stakeholder consultations with clinicians: lay health counsellors (*n*=6), psychologists (*n*=2), occupational therapists (*n*=2), and psychiatrists (*n*=2), and young people with lived experience of anxiety and/or depression (*n*=20). After that, they convened workshops to triangulate findings from the scoping review and the stakeholder consultations to inform the interpretation of findings and develop a mechanistic framework hypothesising pathways by which the working alliance influences treatment outcomes.

Limitations included:

- The research team did not formally assess the risk of bias in the included studies.
- Most of the reviewed studies were conducted in high-income countries (*n*=26, 96%), with many studies conducted in the US (*n*=12, 44%), limiting their applicability across different settings.
- Very few studies were exclusively conducted with young adults aged 14–24 (*n*=3, 11.1%), prohibiting firm conclusions to be drawn regarding what works best for this population.

Key findings: What works, for whom, in what contexts and why?

What works?

Overall, a functional working alliance is associated with therapeutic improvements among young people (aged 14–24) experiencing anxiety and/or depression. It appears that improvements in the working alliance are associated with improvements in interpersonal relationships, self-esteem, positive coping strategies, optimism, adherence to treatment protocols, and emotional regulation. Improvements in negative psychosocial indices and treatment processes, in turn, lead to lower anxiety and depression symptoms.

For whom?

There was insufficient evidence to reach any sort of conclusion on who might benefit most from working alliance.

In what contexts?

- The best treatment outcomes are obtained when a working alliance is established early on in the therapeutic process.
- Based on the evidence reviewed, it appears that a functional working alliance can improve anxiety and/or depression across a range of contexts – for example, in face-to-face and online therapeutic settings, via individual and group therapy, and across various types of psychological therapies such as problem-solving and cognitive behavioural therapies.

How and why?

Due to a lack of evidence, the exact mechanisms underpinning how a working alliance optimises treatment outcomes are unknown. However, it is theorised that improvements in the working alliance are associated with improvements in relationships, self-esteem, optimism, adherence to treatments, and engagement in therapy. These improvements in turn can lead to improvements in symptoms of anxiety and/or depression.

Insights from young people with lived experience

Young people echoed the importance of a positive working alliance and expressed the need to be understood and be part of the therapeutic decision-making process. To develop a meaningful alliance, young people expected counsellors to be able to set boundaries, maintain confidentiality, have excellent communication skills, and be non-judgemental and empathetic. Furthermore, young people with lived experience also expressed that a conducive environment, regular engagements, and collaborative goal setting was critical in forming and maintaining a functional working alliance.

Real-life application

Is it safe, acceptable, accessible, and scalable to young people worldwide?

The effects of a meaningful working alliance appear to produce positive and acceptable outcomes across settings. A functional working alliance can be cultivated and is potentially scalable and accessible across contexts. Unfortunately, ruptures in working alliance seem to negatively affect treatment expectancy and adherence, reducing treatment effectiveness and creating unsafe spaces for both patients and therapists.

Recommendations

For practice

- There should be routine evaluation of the working alliance from the perspectives of both clients and their therapists.
- There is a stern need to explore strategies to promote working alliance across different types of therapies, to optimise the treatment of young people with anxiety and/or depression.

For future research

More research is needed to understand the impact of working alliance on anxiety and/or depression in young people. In particular, there is need for:

- more research with young people and in low-income settings, using adequately powered experimental designs, multiple measures of working alliance, and advanced statistical modelling techniques, to differentiate within and between patient differences
- investigations into the long-term effects of working alliance on treatment outcomes
- a better understanding of the exact mechanisms through which the working alliance influences anxiety and/or depression outcomes in young people.

Concluding remarks

What have we learned and where do we go from here?

Across our two active ingredients commissions, 51 research teams across the world were commissioned to review over 40 active ingredients ranging from the biological (e.g. hippocampal neurogenesis, reduced inflammation in the body, selective serotonin reuptake inhibitors), to the cognitive (e.g. emotion controllability, grief reduction, reduced repetitive negative thinking), behavioural (e.g. behavioural activation, collaborative goal setting, self-disclosure, physical activity), relational (e.g. peer support, communication in families, working alliance, school connectedness), and societal (e.g. social inclusion, urban access to green space).

Our initial goal when we commissioned these active ingredient reviews was to encourage more focus across the mental health science community on why, in addition to if, interventions work, and to stress that understanding 'cause' in relation to mental health includes understanding what causes things to improve, as well as what causes problems to arise in the first place.

These commissioned reports were immensely valuable, in part for the breadth of research they summarised, but also by providing the field with an overview of what is and is not known about what works, for whom, in what contexts, and why.

There are several parallels in terms of our conclusions across the two commissions (see the first report for more detail). For example, efficacy of active ingredients varies across different people and different contexts with no one active ingredient likely to be sufficient or effective for everyone. Similar limitations were also highlighted in many of the individual summaries:

- Most of the existing work has taken place in high-income countries, and it is unclear how applicable the findings are to low- and middle-income countries.
- Some research teams struggled to find studies that focused on young people aged 14–24, which led them to rely on a small number of studies that were eligible for inclusion in their review or to extrapolate findings from other age groups.
- Many studies are underpowered or at risk of bias, limiting the conclusions that can be drawn, specifically around what works, for whom, and in what contexts.
- There is a lack of dismantling trials or similar designs that can tease apart the relative efficacy of different components or active ingredients within trialled interventions.

Looking across the reviews, a clear gap emerged: while there is evidence to show that many interventions are effective, we know much less about the biological, psychological, and social mechanisms of action underpinning how and why these active ingredients work. It also became clear that there is currently not enough research being done across different disciplines and levels of explanation (for example, molecular, cellular, circuits, systems, behaviour, or societal levels) to provide the information we need to identify causal mechanisms of action. Illuminating the relationship between these different aspects may be key. Without the mechanistic understanding of how and why active ingredients work, it is much more difficult to develop new and improved early interventions and to target them to the right people at the right time. The 'looking backwards, moving forward – understanding how interventions for anxiety, depression, and psychosis work' call proposes to address this gap in our understanding. We hope to announce the funded teams in early 2023, and suggest that all interested readers keep an eye on our website: https://wellcome.org/what-we-do/mental-health.

Appendices

Appendix 1: Research team members and affiliations

Please note that the Team Lead for each project has been underlined.

Behaviours and activities

Collaborative goal setting and tracking

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Appendix 2: Measures used to assess active ingredients

The table below provides a brief description of up to three measures currently used to assess each of the 19 active ingredients reviewed by Wellcome-funded researchers in 2021. It has been developed with input from the research teams and is not based on a systematic search of the literature. Inclusion of a measure in the table does not reflect endorsement for use by Wellcome.

Active ingredient	Measures used to assess this active ingredient
Behaviours and activities	
Collaborative goal setting and tracking	A range of different ways of measuring collaborative goal setting and tracking have been developed (Lloyd et al., 2019), however the research team suggest using the: • Goal Based Outcomes tool (GBO; Law, 2011) for all ages. • Goals Form (Cooper, 2015; Cooper & Xu, 2022) for adolescents/young adults. The Goal Based Outcomes tool (GBO; Law, 2011) is widely used to track progress against goal setting in children and young people's mental health and wellbeing settings, and is well received by young people (Feltham et al., 2018; Law & Wolpert, 2014) and professionals (Emanuel et al., 2014). The GBO can be used to compare how far a young person feels they have moved towards reaching a goal they set at the beginning of an intervention, to where they are at the end of an intervention. The GBO consists of a scale from 0–10 to capture the change, with the outcome being the amount of movement along the scale from the start to the end of the intervention. The Goals Form (Cooper, 2015; Cooper & Xu, 2022) is a tool developed to monitor collaboratively agreed goals in psychotherapy with adults. Up to seven goals can be set at the start of therapy, and rated on a scale of 1–7, with progress reviewed ideally at each session. The psychometric properties have been reported on recently (Cooper & Xu, 2022). Cooper M. Goals Form: Guidance on Use, 2015. Retrieved from https://www.researchgate.net/profile/Mick_Cooper. https://doi.org/10.13140/RG.2.1.2576.7767 Cooper M & Xu D. Goals Form: Reliability, validity, and clinical utility of an idiographic goal-focused measure for routine outcome monitoring in psychotherapy. Journal of Clinical Psychology, 2022; 10. https://doi.org/10.1002/jclp.23344 Emanuel R, Catty J, Anscombe E, Cantle A & Muller H. Implementing an aim-based outcome measure in a psychoanalytic child psychotherapy service: Insights, experiences and evidence. Clinical Child Psychology and Psychiatry, 2014; 19(2): 169-183. https://doi.org/10.1177/1359104513485081 Feltham A, Martin K & Walker LHL. Using goals in therapy: The perspective of people with lived experience. In Cooper M & Law D, editors, Working with Goals in Psychotherapy and Counselling. Oxford: Oxford University Press, 2018. pp. 73-85. https://doi.org/10.1093/med-psych/9780198793687.001.0001 Law D. Goals and Goal Based Outcomes (GBOs): Some Useful Information, (2nd ed.) London: CAMHS Press, 2011. https://hduhb.nhs.wales/about-us/governance-arrangements/freedom-of-information/disclosure-log/disclosure-log-appendices/4-camhs-feedback-questionnaires-pdf-803kb/ Law D & Wolpert M. Guide to Using Outcomes and Feedback Tools with Children, Young People and Families: Formally Known as COOP Document. London: CAMHS Press, 2014. Lloyd C, Duncan C & Cooper M. Goal measures for psychotherapy: A systematic review of self-report, idiographic instruments. Clinical Psychology: Science and Practice, 2019; 26(3): e12281. https://doi.org/10.1111/cpsp.12281

Active ingredient	Measures used to assess this active ingredient
Behaviours and activities	
Remote measurement technologies: use of remote technologies to monitor changes in biology, behaviour, and environment relevant to depression	Annabel Walsh and team: From the evidence review, it was clear that smartphones were the preferred approach for the remote measurement of changes in biology, behaviour, and environment relevant to depression in young people. Consultations with young people with lived experience of mental health issues revealed a number of reasons for this. Firstly, smartphones are more ubiquitous than other RMT such as smartwatches and other wearables aimed more specifically at fitness, with most young people already owning a smartphone capable of remote measurement. Smartphones also have more comprehensive functionality being the desired 'one stop shop' for measuring everything, rather than having multiple devices and apps to contend with. While the motivation required for daily engagement with RMT when depressed was a concern, young people felt that both passive sensing and active ecological momentary assessment approaches should be used in combination for a more holistic approach, such that the passive sensing data has context. The data most likely to be relevant in depression were sleep and mobility data from embedded sensors, paradata collected during use of the smartphone and apps, and mood logs from active input by the young person or their parent. Such data would be best used for feedback to the individual for self-management and increased emotional self-awareness, or to the clinician to track symptom improvement/deterioration and how well other treatments are working. For use in relapse prevention, data needs to be collected continuously over much longer periods of time consistent with estimated relapse rates, instead of the current 'snapshot' approach.
Self-disclosure: sharing information with others about personal experiences and characteristics	A range of measures have been developed to assess self-disclosure (Kreiner & Levi-Belz, 2019), but the research team suggest using the: • Distress Disclosure Index (DDI; Kahn & Hessling, 2001) This is a brief 12-item self-report measure, assessing the tendency to disclose personally distressing information. Scoring highly on the DDI is positively associated with social support, self-esteem, and life satisfaction and inversely related to psychological distress, depression, anxiety, and loneliness (Kreiner & Levi-Belz, 2019). The DDI has good psychometric properties with high sensitivity to individual differences in self-disclosure (Kahn et al., 2012) and has been used extensively in youth populations. Kahn JH & Hessling RM. Measuring the tendency to conceal versus disclose psychological distress. Journal of Social and Clinical Psychology, 2001; 20(1): 41–65. https://doi.org/10.1521/jscp.20.1.41.22254 Kahn JH, Hucke BE, Bradley AM, Glinski AJ & Malak BL. The Distress Disclosure Index: A research review and multitrait–multimethod examination. Journal of Counseling Psychology, 2012; 59(1): 134-149. https://doi.org/10.1037/a0025716 Kreiner H & Levi-Belz Y. Self-disclosure here and now: Combining retrospective perceived assessment with dynamic behavioral measures. Frontiers in Psychology, 2019; 10: 558. https://doi.org/10.3389/fpsyg.2019.00558

Active ingredient	Measures used to assess this active ingredient
Beliefs and knowledge	
Cultural connection: connection with one's own culture	The research team suggest using the: • Cultural Connectionedess Scale (CCS; Snowshoe et al., 2015) Over the past decades, few scales have been developed to measure cultural connectedness in relation to mental health and wellbeing (Snowshoe et al., 2017). One scale, called the Cultural Connectedness Scale (Snowshoe et al., 2015), consists of 29 items measuring cultural connection through three components related to cultural identity, traditional practices, and spirituality. Sample items from the CCS include: 'I have a strong sense of belonging to my community or nation', 'I plan on trying to find out more about my culture, such as its history, traditions, and customs', and 'I feel a strong attachment towards my community or nation' (Snowshoe et al., 2017). The CCS was developed using a strength-based approach, and the variables of the scale were co-produced with young people from First Nation communities in Canada. The CCS can be adapted to use in other cultural communities and is a culturally sensitive measure for youth connection to self, family, community, and their environment. Snowshoe A, Crooks CV, Tremblay PF, Craig WM & Hinson RE. Development of a Cultural Connectedness Scale for First Nations youth. Psychological Assessment, 2015; 27(1): 249–259. https://doi.org/10.1037/a0037867 Snowshoe A, Crooks CV, Tremblay PF & Hinson RE. Cultural connectedness and its relation to mental wellness for First Nations youth. Journal of Primary Prevention, 2017; 38(1-2): 67–86. https://doi.org/10.1007/s10935-016-0454-3

Active ingredient	Measures used to assess this active ingredient
Beliefs and knowledge	
Mental health literacy and psychoeducation	Sandesh Dhakal, Felipe Botero-Rodríguez, and team suggest using the: • Mental Health Literacy Questionnaire (Campos et al., 2016; Dias et al., 2018) Unlike many existing mental health literacy measures, this questionnaire covers a range of mental health conditions, and comprehensively assesses multiple constructs (knowledge of mental health problems, erroneous beliefs/stereotypes; help-seeking; self-help strategies) and dimensions in which some constructs vary (e.g. differentiates help-seeking for self from others, 'objective' recognition from 'subjective' perceptions of symptoms). It was developed rigorously with young people's involvement. Items were determined through literature reviews of mental health literacy concepts and existing measures and focus groups with experts and young people, 'think aloud' procedures, and factor analyses across independent youth samples. Two versions aimed at different age groups (12–17 and 18–25; Campos et al., 2016; Dias et al., 2018) were developed separately, with different factor structures across each, thus acknowledging that the concept of mental health literacy may change with maturational age. This questionnaire also has demonstrable psychometrics (Campos et al., 2016): good internal consistency and inter-time reliability, and face, content, and construct validity. It is also well-suited to a range of study designs: population-based studies (being brief), intervention studies (good inter-time reliability), and global health studies (not based on culture-specific vignettes, standardised protocols in place for translation to other languages). Campos L, Dias P, Palha F, Duarte A & Veiga E. Development and psychometric properties of a new questionnaire for assessing mental health literacy in young people. Universitas Psychologica, 2016; 15(2): 61-72. http://dx.doi.org/10.11144/Javeriana.upsy15-2.dppq Dias P, Campos L, Almeida H & Palha F. Mental health literacy in young adults: Adaptation and psychometric properties of the Mental Health Literacy Questionnaire. International Journal of Environmental Research and Public Health, 2018; 15(7): 1318. https://doi.org/10.3390/ijerph15071318 Darya Gaysina and team suggest using the: • Mental Health Literacy Scale (MHLS; O'Connor & Casey, 2015) The MHLS is a robust theory-based measurement instrument that is widely used to assess mental health knowledge and ability. The 35-item questionnaire assesses mental health literacy on six domains: (i) ability to recognise mental disorders; (ii) knowledge of how and where to seek mental health information; (iii) knowledge of causes and risk factors; (iv) knowledge of self-treatment; (v) knowledge of professional help available; (vi) attitudes that promote recognition and appropriate help-seeking. O'Connor M & Casey L. The Mental Health Literacy Scale (MHLS): A new scale-based measure of mental health literacy. Psychiatry Research, 2015; 229(1-2): 511-516. https://doi.org/10.1016/j.psychres.2015.05.064

Active ingredient	Measures used to assess this active ingredient
Beliefs and knowledge	
Sense of purpose	The research team suggest using the: • Revised Sense of Purpose Scale (SOPS-2; Sharma et al., 2018; Sharma & Yukhymenko-Lescroart, 2019) Unlike other sense of purpose measures, the SOPS-2 was developed for use with adolescents and emerging adults (Sharma et al., 2018; Sharma & Yukhymenko-Lescroart, 2019) and aligns with a multidimensional and comprehensive theory of purpose (Damon et al., 2003). It was designed to measure the following three dimensions: 'awareness of purpose' (clarity about one's purpose in life); 'altruistic purpose' (prosocial beyond-the-self purpose); and 'awakening to purpose' (search for purpose and recent changes in purpose). The SOPS-2's altruistic dimension is a particularly unique strength compared to other purpose measures, allowing for prosocial considerations (i.e. contributions to the world beyond the self) in addition to personal goals/aspirations. Adolescents commonly report that having life purpose is related to their desire to help others (Hill et al., 2010). The SOPS-2 also has strong psychometric properties, with acceptable reliability, concurrent validity, and measurement equivalence across genders and culturally and linguistically diverse groups. This includes Hispanic and Asian-American college samples (Sharma et al., 2019), as well as Turkish youth samples (Yavaş and Duran, 2019). Finally, and importantly, the SOPS-2 measure has been designed to assess growth and change in purpose (via the 'awakening to purpose' subscale), and is therefore suitable for assessing the effects of interventions designed to foster sense of purpose. Damon W, Menon J & Bronk C. The development of purpose during adolescence. Applied Development Science, 2003; 7(3): 119-128. https://doi.org/10.1207/S1532480XADS0703_2 Hill PL, Burrow AL, O'Dell AC & Thornton M. Classifying adolescents' conceptions of purpose in life. Journal of Positive Psychology, 2010; 5(6): 466-473. https://doi.org/10.1080/17439760.2010.534488 Sharma G, Yukhymenko-Lescroart M & Kang Z. Sense of Purpose Scale: Development and initial validation. Applied Developmental Science, 2018; 22(3): 188-199. https://doi.org/10.1080/10888691.2016.1262262 Sharma G & Yukhymenko-Lescroart M. Validation of the Revised Sense of Purpose Scale in emerging adults. Journal of Character Education, 2019; 15(2): 39-52. https://www.researchgate.net/publication/337064119_Validation_of_the_Revised_Sense_of_Purpose_Scale_with_Emerging_Adults Yavaş H & Duran NO. Turkish version of the revised Sense of Purpose Scale 2 (SOPS-2): A preliminary study for validity and reliability. Journal of International Scientific Research, 2019; 1-13. https://api.semanticscholar.org/CorpusID:198663216

Active ingredient	Measures used to assess this active ingredient
Beliefs and knowledge	
Social action	To measure agency, the research team suggest using the: • Sense of Community scale for Adolescents (SoC-A; Chiessi et al, 2010) The Sense of Community scale comprises 20 items organised into five different factors: satisfaction of needs and opportunities for involvement; support and emotional connection with peers; support and emotional connection in the community; sense of belonging; and opportunities for influence. The reasons underpinning the team's recommendation: • The five-factor model of the scale provides a comprehensive assessment of the multifaceted construct of agency. • The SoC-A scale has been specifically adapted and validated for use with adolescents, including a shortening of the original version to include only 20 items, making it more acceptable to adolescents. Construct validity and test-retest reliability with adolescent populations have been established for the scale, and the scale has been applied within research studies across many different countries, making it globally relevant. • Most measures of agency, e.g. Sense of Agency Scale (SoAS; Tapal et al, 2017), focus on personal agency, assessing the individual's beliefs about control over one's own body, thoughts and feelings. In contrast, the SoC-A measure focuses on the development of agency through social action. Chiessi M, Cicognani E & Sonn C. Assessing Sense of Community on adolescents: Validating the brief scale of Sense of Community in adolescents (SOC-A). Journal of Community Psychology, 2010; 38(3): 276-292. https://doi.org/10.1002/jcop.20364 Tapal A, Oren E, Dar R & Eitam B. The Sense of Agency Scale: A measure of consciously perceived control over one's mind, body, and the immediate environment. Frontiers in Psychology, 2017; 8: 1552. https://doi.org/10.3389/fpsyg.2017.01552
Spiritual and religious beliefs	The research team suggest using a measure that covers four constructs of spirituality and religiosity, which are 1) engagement in organisational and formal religious and spiritual practices; 2) personal importance of religion (salience); 3) religious coping, including both positive (i.e. looking to God for strength, and support) and negative (i.e. feeling abandoned by or blaming God); 4) spiritual wellbeing (i.e. a sense of life-meaning, belonging, and purpose). One such self-report measure that has been widely used in research studies is the Brief Multidimensional Measure of Religiousness/ Spirituality (BMMRS; Fetzer Institute and National Institute on Aging Working Group, 1999; Piedmont et al., 2006). Fetzer Institute and National Institute on Aging Working Group. Multidimensional Measurement of Religiousness/Spirituality for Use in Health Research. Fetzer Institute: Kalamazoo, 1999. https://fetzer.org/sites/default/files/images/resources/attachment/%5bcurrent-date:tiny%5d/Multidimensional_Measurement_of_Religousness_Spirituality.pdf Piedmont RL, Mapa AT & Williams JE. A factor analysis of the Fetzer/NIA Brief Multidimensional Measure of Religiousness/Spirituality (MMRS). In Piedmont RL, editor, Research in the Social Scientific Study of Religion, vol 17. Leiden: Brill, 2006. pp. 177-196.

Active ingredient	Measures used to assess this active ingredient
Brain/body functions	
Hippocampal neurogenesis: growth of new neurons in the hippocampal region of the brain	Alessandra Borsini and team: While hippocampal neurogenesis has been commonly investigated at a *cellular level* using histological analyses of hippocampi isolated from animals or from a patient's post mortem (Boldrini et al., 2014, 2018), more recently, advancements have been made using neuroimaging tools as a new way to measure this process in living humans. Neuroimaging methods such as BOLD-fMRI, CBV and MRS can be used to relate the putative adult neurogenesis-mediated changes to behaviour (Ho et al., 2013), including for aspects of memory and emotion, known to be altered by adult neurogenesis in animal models of depression. Scans of several different MR-modalities can offer complementary anatomical, physiological and metabolic data on putative adult hippocampal neurogenesis correlates. Repeated scans can be performed on the same individual, allowing to assess the effects of pro- or anti-neurogenic interventions, such as antidepressants, physical activity, diet or stress, on the putative correlates over time. However, a major limitation of in vivo neuroimaging investigations is the difficulty in ascribing observed imaging effects to cellular and molecular changes (Ho et al., 2013). As such, animal studies of parallel design are still required to assess direct measures of adult neurogenesis which can be linked with the neuroimaging outcomes. Boldrini M, Butt TH, Santiago AN, Tamir H, Dwork AJ, Rosoklija GB, Arango V, Hen R & Mann JJ. Benzodiazepines and the potential trophic effect of antidepressants on dentate gyrus cells in mood disorders. International Journal of Neuropsychopharmacology, 2014; 17(12): 1923–1933. https://doi.org/10.1017/S1461145714000844 Boldrini M, Fulmore CA, Tartt AN, Simeon LR, Pavlova I, Poposka V, Rosoklija GB, Stankov A, Arango V, Dwork AJ, Hen R & Mann JJ. Human hippocampal neurogenesis persists throughout aging. Cell Stem Cell, 2018; 22(4): 589–599.e5. https://doi.org/10.1016/j.stem.2018.03.015 Ho NF, Hooker JM, Sahay A, Holt DJ & Roffman JL. In vivo imaging of adult human hippocampal neurogenesis: Progress, pitfalls and promise. Molecular Psychiatry, 2013; 18(4): 404-416. https://doi.org/10.1038/mp.2013.8
Omega-3 supplements	The research team suggest that the recommended primary measure is: • The overall dosage of EPA and DHA measured in mg per day, and the duration of treatment (in days). Omega-3 fish oil capsules usually contain approximately 300 mg–600 mg of a combination of eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA). Some other omega-3 capsules contain a parent molecule, alpha-linolenic acid (ALA), which is inefficiently converted to EPA and DHA before it can be used by the body. With ALA capsules, the 'active' dosage is unknown, because a variable amount of ALA is converted to EPA and DHA (1–10% and 0.5–5% respectively). In most research studies, the dosage administered is around 1000 mg–2000 mg per day and typically consists of a combination of both EPA and DHA. The ratio of EPA to DHA in combined capsules has been suggested to be important to therapeutic outcomes (Guu et al., 2019). Therefore, to allow for accurate measurement, our recommended primary measure is the overall dosage of EPA and DHA, measured in mg per day, as well as the duration of treatment (in days). Guu TW, Mischoulon D, Sarris J, Hibbeln J, McNamara RK, Hamazaki K, Freeman MP, Maes M, Matsuoka YJ, Belmaker RH, Jacka F, Pariante C, Berk M, Marx W & Su KP. International Society for Nutritional Psychiatry research practice guidelines for Omega-3 fatty acids in the treatment of major depressive disorder. Psychotherapy and Psychosomatics, 2019; 88(5): 263-273. https://doi.org/10.1159/000502652

Active ingredient	Measures used to assess this active ingredient
Cognitive and attentional skills	
Emotional controllability: beliefs about the extent to which emotions are controllable	The research team believe a good measure of emotion controllability beliefs must meet the following criteria: • Functions as a practically useful dimensional tool to capture the extent to which individuals believe emotions are controllable • Has strong support for reliability and validity • Is developmentally appropriate for 14 to 24-year-olds • Is sufficiently sensitive to detect change following treatment. Considering these factors, the team suggest using the: • Implicit Theories of Emotions Scale (Tamir et al., 2007). This scale consists of four items: two assess the extent to which emotions can be controlled (e.g. 'Everyone can learn to control their emotions'), and two assess a more fixed view of emotions, (e.g. 'No matter how hard they try, people can't really change the emotions they have'). The scale has been widely used with adolescent samples, has strong support for reliability and discriminant/convergent validity, and intervention studies indicate it is sensitive to clinical change (Smith et al., 2017). Furthermore, it is brief and low cost to administer so can be used at scale in educational and clinical settings. The team also recommend using an adapted version of this scale that targets personal emotions (e.g. 'I can learn to control my emotions'), as this scale taps into a slightly different facet of emotion controllability beliefs (for the self) and could therefore add nuance (De Castella et al., 2013). De Castella K, Goldin P, Jazaieri H, Ziv M, Dweck CS & Gross JJ. Beliefs about emotion: Links to emotion regulation, well-being, and psychological distress. Basic and Applied Social Psychology, 2013; 35(6): 497-505. https://doi.org/10.1080/01973533.2013.840632 Smith EN, Romero C, Donovan B, Herter R, Paunesku D, Cohen GL, Dweck CS & Gross JJ. Emotion theories and adolescent well-being: Results of an online intervention. Emotion, 2018; 18(6): 781-788. https://doi.org/10.1037/emo0000379 Tamir M, John OP, Srivastava S & Gross JJ. Implicit theories of emotion: Affective and social outcomes across a major life transition. Journal of Personality and Social Psychology, 2007; 92(4): 731-744. https://doi.org/10.1037/0022-3514.92.4.731

Active ingredient	Measures used to assess this active ingredient
Cognitive and attentional skills	
Emotional granularity: improved ability to characterise emotional experiences	Darren Dunning and team: When measuring emotion granularity, the choice is between easy-to-administer self-report scales or intensive performance measures administered over days or weeks, with each approach conferring advantages and disadvantages. If selecting a single measure, the research team would recommend using the: • Emotion Differentiation Subscale from the Range and Differentiation of Emotional Experiences Scale (RDEES; Kang & Shaver, 2004) This provides the optimal balance of validity and reliability in adolescents alongside practicality and accessibility across different health settings. The RDEES Emotion Differentiation Subscale is a widely used inventory comprising seven items, each rated on a 5-point Likert scale (1= 'Does not describe me well' to 5= *'Describes me very well'). Items reflect a person's tendency to attend to subtle distinctions between affective states, e.g. 'I tend to draw fine distinctions between similar feelings (e.g. depressed and blue; annoyed and irritated)'* and *'Each emotion has a very distinct and unique meaning to me.'* The Subscale has few practical limitations, has robust psychometric properties, and is sensitive to individual differences in young people (Kang & Shaver, 2004). However, the most widely used method of measuring emotional granularity in adolescent populations is ecological momentary assessment (EMA; Shiffman et al., 2008). This involves prompting individuals multiple times a day – usually via a smartphone or similar portable device – to reflect on and rate the intensity of their current emotions in real time. The EMA method usually requires open-ended responses for at least one week. Results are analysed using intraclass correlation coefficients (ICCs). Individuals lower in emotional granularity use similar terms over time to describe their emotional states. This consistency of response results in larger ICCs relative to those with higher emotional granularity who report more varied and nuanced terms to describe their feeling states. Kang SM & Shaver PR. Individual differences in emotional complexity: Their psychological implications. Journal of Personality, 2004; 72(4): 687-726. https://doi.org/10.1111/j.0022-3506.2004.00277.x Shiffman S, Stone AA & Hufford MR. Ecological momentary assessment. Annual Review of Clinical Psychology, 2008; 4: 1-32. https://doi.org/10.1146/annurev.clinpsy.3.022806.091415

Active ingredient	Measures used to assess this active ingredient
Cognitive and attentional skills	
Grief reduction: use of strategies to target feelings of grief	The research team suggest using the: • Prolonged Grief Disorder scale–Revised (PG-13-R; Prigerson et al., 2021) The 13-item Prolonged Grief Disorder scale–Revised (PG-13-R) has been commonly used in both research and clinical practice, is available for free, and has good reliability and validity across multiple countries, samples, ages, and loss types. It is appropriate to measure grief intensity on a continuum, and if a clinician wishes to assess for prolonged grief disorder, it is also aligned with ICD-11 and DSM-5-TR diagnostic criteria (Prigerson et al., 2021). • The Traumatic Grief Inventory-Self Report Plus (TGI-SR+; Lenferink et al., 2022) The 22-item Traumatic Grief Inventory-Self Report Plus (TGI-SR+) was developed on samples of Dutch adults and demonstrated good internal consistency, temporal stability, convergent validity, and known-groups validity. Like the PG-13-R, it can be used to measure grief intensity on a continuum, and if a clinician wishes to assess for prolonged grief disorder, it is also aligned with ICD-11 and DSM-5-TR diagnostic criteria (Lenferink et al., 2022). Lenferink L, Eisma MC, Smid GE, de Keijser J & Boelen PA. Valid measurement of DSM-5 persistent complex bereavement disorder and DSM-5-TR and ICD-11 prolonged grief disorder: The Traumatic Grief Inventory-Self Report Plus (TGI-SR+). Comprehensive Psychiatry, 2022; 112: 152281. https://doi.org/10.1016/j.comppsych.2021.152281 Prigerson HG, Boelen PA, Xu J, Smith KV & Maciejewski PK. Validation of the new DSM-5-TR criteria for prolonged grief disorder and the PG-13-Revised (PG-13-R) scale. World Psychiatry, 2021; 20(1): 96-106. https://doi.org/10.1002/wps.20823

Active ingredient	Measures used to assess this active ingredient
Human connections	
Communication in families	With the caveat that the research team was unable to complete an exhaustive review of the psychometric properties of these instruments, the team suggest using the: • McMaster Family Assessment Device (FAD; Epstein et al., 1983) The FAD is a 60-item clinically oriented measure of communication in families (as well as multiple other dimensions of family functioning) made up of seven scales that measure problem solving, communication, roles, affective responsiveness, affective involvement, behaviour control, and general functioning. It has been widely used in the literature to examine communication within families of adolescents experiencing common mental health problems such as anxiety and depression, including in randomised controlled trials of psychological treatments for adolescents experiencing these (e.g. Du et al., 2014; https://pubmed.ncbi.nlm.nih.gov/24501730/ Georgiades et al., 2008). A limitation of the FAD is that it does not disaggregate relationships with particular people in families (for example, a young person with their mother, a young person with their father). If measuring particular individual relationships in families is the goal, then the research team recommend the: • Inventory of Parent and Peer Attachment (IPPA; Armsden & Greenberg, 1987) The IPPA is a 75-item measure (25 items per father, mother, and self) capturing the qualities of communication in individual relationships within families, and has been widely used in the literature to examine communication in adolescents' relationships with individual family members. Three broad dimensions are assessed: degree of mutual trust, quality of communication, and extent of anger and alienation. Armsden GC & Greenberg MT. The inventory of parent and peer attachment: Individual differences and their relationship to psychological well-being in adolescence. Journal of Youth and Adolescence, 1987; 16(5): 427-454. https://doi.org/10.1007/BF02202939 Du N, Ran MS, Liang SG, SiTu MJ, Huang Y, Mansfield AK & Keitner G. Comparison of family functioning in families of depressed patients and nonclinical control families in China using the Family Assessment Device and the Family Adaptability and Cohesion Evaluation Scales II. Annals of Clinical Psychiatry, 2014; 26(1): 47-56. https://pubmed.ncbi.nlm.nih.gov/24501730/ Epstein NB, Baldwin LM & Bishop DS. The McMaster Family Assessment Device. Journal of Marital and Family Therapy, 1983; 9(2): 171-180. https://doi.org/10.1111/j.1752-0606.1983.tb01497.x Georgiades K, Boyle MH, Jenkins JM, Sanford M & Lipman E. A multilevel analysis of whole family functioning using the McMaster Family Assessment Device. Journal of Family Psychology, 2008; 22(3): 344-354 https://doi.org/10.1037/0893-3200.22.3.344

Active ingredient	Measures used to assess this active ingredient
Human connections	
Family support	Involvement of parents/caregivers and family is a multifaceted construct and has been described as 'parenting quality' in the literature. The research team suggests the following as the main outcome measure to assess parenting quality: • Parenting Practice Measure (PPM; Ladis et al., 2020) The tool consists of three subscales that measure parental knowledge and affective relationships, parental control, parental communication and involvement. It is a psychometrically strong, comprehensive measure, specifically designed to evaluate the parenting quality for adolescent samples (Ladis et al., 2020). According to the research team, the multifaceted concept of parenting quality has not been explored in any other parenting tool as comprehensively measured using PPM. The scores of the tool provide important insights and help to identify specific problem areas in parenting. The results of the tool can also be used to evaluate the impact of the treatment when working with parents with young adolescents and design more targeted treatment plans to strengthen positive areas of parenting. As the parenting practices vary in different cultures, cross-culture validation of the tool is warranted for use with diverse cultural and ethnic groups. Ladis B, Trucco EM, Huang H, Thomlison B & Fava NM. Psychometric properties of a comprehensive parenting practice measure for parents of adolescents. Child & Adolescent Social Work Journal, 2020; 37(1): 49-72. https://doi.org/10.1007/s10560-019-00627-6

Active ingredient	Measures used to assess this active ingredient
Human connections	
Peer support: support from a peer who has experienced anxiety and/or depression	In a review co-authored by the Team Lead Magenta Simmons (King & Simmons, 2018), it is argued that measurement of peer support should include the core principles of mutuality/reciprocity, relationality and hope, informed by lived experience, and provide guidelines for doing so. Accordingly, the one measure the research team suggest using is the: • Principle based fidelity index for peer support in mental health services (Gillard et al., 2021) This measure: • Captures the core peer-support elements identified above • Has strong psychometric properties • Focuses on the key principles that make peer support a unique active ingredient, including what makes it different from clinician-delivered interventions. For youth peer support, a key consideration is the age of the peer-support worker. A key aim of peer support is to provide reciprocal support that minimises power dynamics. As such, in youth mental health, many programmes consider peers to be young people of a similar age (the research team elaborate on the rationale in Fava et al. (2018)). Although they do not propose to add age of the peer worker as an additional criterion to the fidelity scale, they acknowledge that any insight analysis with a youth focus needs to consider the age of the peer-support worker and how this applies in different countries and cultural settings. Fava N, O'Bree B, Randall R, Kennedy H, Olsen J, Matenson E, Fitzpatrick S & Simmons M. Youth peer work: Building a strong and supported youth peer workforce. In Meagher J, Stratford A, Jackson F, Jayakody E & Fong T, editors, Peer Work in Australia: A New Future for Mental Health. Sydney: Richmond PRA and Mind Australia, 2018. Gillard S, Banach N, Barlow E, Byrne J, Foster R, Goldsmith L, Marks J, McWilliam C, Morshead R, Stepanian K, Turner R, Verey A & White S. Developing and testing a principle-based fidelity index for peer support in mental health services. Social Psychiatry and Psychiatric Epidemiology, 2021; 56(10): 1903-1911. https://doi.org/10.1007/s00127-021-02038-4 King AJ & Simmons MB. A systematic review of the attributes and outcomes of peer work and guidelines for reporting studies of peer interventions. Psychiatric Services, 2018; 69(9): 961-977. https://doi.org/10.1176/appi.ps.201700564

Active ingredient	Measures used to assess this active ingredient
Human connections	
School connectedness: sense of connection to school life	The research team found that *school connectedness* is a multifaceted construct that has been defined and measured differently across studies. Around 10–15 self-report instruments are currently available to assess school connectedness, but the aspects of *school connectedness* that are measured vary (García-Moya et al., 2019; Hodges et al., 2018). Therefore, the research team recommends carefully selecting a measure based on the objectives of the user. The following two reviews are a useful starting point to help with decision making: • Hodges and colleagues (2018) conducted a systematic review of the psychometric quality of school-connectedness measures available for students aged 6 to 14. The review found the School Climate Measure (Zullig et al., 2015) and the 35-item School Engagement Instrument (Appleton et al., 2006) to have the strongest psychometric properties of the measures reviewed, which were primarily developed within the USA. • García-Moya and colleagues (2019) conducted a scoping review on the conceptualisation of school and teacher connectedness in adolescent research. The review included the 18-item Psychological Sense of School Membership scale (PSSM; Goodenow, 1993). The research team notes that the PSSM has been used in multiple studies examining depression and anxiety with secondary and tertiary students (e.g. Holt & Espelage, 2003; Shochet et al., 2006), and validated beyond high-income countries (Alkan, 2016). Alkan N. Psychological Sense of University Membership: An adaptation study of the PSSM Scale for Turkish university students. Journal of Psychology, 2016; 150(4): 431-449. https://doi.org/10.1080/00223980.2015.1087373 Appleton JJ, Christenson SL, Kim D & Reschly A. Measuring cognitive and psychological engagement: Validation of the Student Engagement Instrument. Journal of School Psychology, 2006; 44(5): 427-445. https://doi.org/10.1016/j.jsp.2006.04.002 García-Moya I, Bunn F, Jiménez-Iglesias A, Paniagua C & Brooks FM. The conceptualisation of school and teacher connectedness in adolescent research: A scoping review of literature. Educational Review, 2019; 71(4): 423-444, https://doi.org/10.1080/00131911.2018.1424117 Goodenow C. The psychological sense of school membership among adolescents: Scale development and educational correlates. Psychology in the Schools, 1993; 30(1): 79-90. https://onlinelibrary.wiley.com/doi/10.1002/1520-6807(199301)30:1%3C79::AID-PITS2310300113%3E3.0.CO;2-X Hodges A, Cordier R, Joosten A, Bourke-Taylor H & Speyer R. Evaluating the psychometric quality of school connectedness measures: A systematic review. PloS One, 2018; 13(9): e0203373. https://doi.org/10.1371/journal.pone.0203373 Holt MK & Espelage DL. A cluster analytic investigation of victimization among high school students: Are profiles differentially associated with psychological symptoms and school belonging? Journal of Applied School Psychology, 2003; 19(2): 81-98. https://doi.org/10.1300/J008v19n02_06 Shochet IM, Dadds MR, Ham D & Montague R. School connectedness is an underemphasized parameter in adolescent mental health: Results of a community prediction study. Journal of Clinical Child and Adolescent Psychology, 2006; 35(2): 170-179. https://doi.org/10.1207/s15374424jccp3502_1 Zullig KJ, Collins R, Ghani N, Hunter AA, Patton JM, Huebner ES & Zhang J. Preliminary development of a revised version of the School Climate Measure. Psychological Assessment, 2015; 27(3): 1072-1081. https://doi.org/10.1037/pas0000070

Active ingredient	Measures used to assess this active ingredient
Human connections	
Social inclusion: improved inclusion for those who are minoritised on the basis of their identity (e.g. sexual and gender)	Xanthe Hunt and team suggest using the: • Social and Community Opportunities Profile assessment tool (SCOPE; Coombs et al., 2013) • Social Connectedness Scale (SCS; Lee & Robbins, 1995) • Social Connectedness Scale–Revised (SCS-R; Lee et al., 2001) In selecting the SCOPE, the team have been guided by Coombs et al.'s (2013) summary of social inclusion measures, which gives a critical overview of the different ways social inclusion can be operationalised and measured. The SCOPE measures perceived social opportunities, satisfaction with these opportunities, and subjective wellbeing. It covers social inclusion in a variety of domains (including leisure, education, and family and social relationships), and has both a long (121-item) and short (48-item) version. The SCOPE is also one of the measures of social inclusion which has been used in mental health research. The SCS and SCS-R are also promising options for the measurement of the social dimensions of social inclusion. This 20-item scale is used to assess the extent to which people feel connected to others in their surrounding social area. The scale is available to use, has been validated in different languages, and is relatively short, making it more suitable than other measures for use in resource-diverse settings, and possibly more appropriate for use in resource-constrained settings. Coombs T, Nicholas A & Pirkis J. A review of social inclusion measures. Australian and New Zealand Journal of Psychiatry, 2013; 47(10): 906-919. https://doi.org/10.1177/0004867413491161 Lee RM, Draper M & Lee S. Social connectedness, dysfunctional interpersonal behaviors, and psychological distress: Testing a mediator model. Journal of Counseling Psychology, 2001; 48(3): 310-318. https://doi.org/10.1037/0022-0167.48.3.310 Lee RM & Robbins SB. Measuring belongingness: The Social Connectedness and the Social Assurance scales. Journal of Counseling Psychology, 1995; 42(2): 232-241. https://doi.org/10.1037/0022-0167.42.2.232 Gemma Lewis and team suggest using the: • Enacted Stigma Index (ESI; Veale et al., 2017) The ESI is an accessible 13-item questionnaire completed by adolescents that has been used in several school-based population surveys, with 14 to 18-year olds (Poon et al., 2011; Tan et al., 2021; Veale et al., 2017). The ESI measures a broad range of experiences, including discrimination, verbal harassment, cyberbullying, school bullying, physical abuse, feelings of unsafety at school, and sexual harassment. The ESI measures the experiences of LGBTQ+, heterosexual and cisgender students. It includes concepts taught in schools and is relevant to school curricula and policy. The range of experiences covered in the ESI would allow schools and research studies to identify specific problem areas and tailor interventions. Poon C, Saewyc E & Chen W. Enacted stigma, problem substance use, and protective factors among Asian sexual minority youth in British Columbia. Canadian Journal of Community Mental Health, 2011; 30(2): 47-76. https://doi.org/10.7870/cjcmh-2011-0016 Tan K, Treharne GJ, Ellis SJ, Schmidt JM & Veale JF. Enacted stigma experiences and protective factors are strongly associated with mental health outcomes of transgender people in Aotearoa/New Zealand. International Journal of Transgender Health, 2021; 22(3): 269-280. https://doi.org/10.1080/15532739.2020.1819504 Veale JF, Peter T, Travers R & Saewyc EM. Enacted stigma, mental health, and protective factors among transgender youth in Canada. Transgender Health, 2017; 2(1): 207-216. https://doi.org/10.1089/trgh.2017.0031

Active ingredient	Measures used to assess this active ingredient
Human connections	
Working alliance: a functional and collaborative relationship with a helper	Working alliance (WA) is a multidimensional construct conceptualised as a collaborative relationship between a client and therapist. A positive client–therapist bond, consensus on therapy goals, and agreement on therapeutic tasks are the three core domains of a functional WA (Luong et al., 2020). From the multitude of WA measures available, the research team suggest using the: • Working Alliance Inventory (WAI; Martin et al., 2000) The WAI is multidimensional, measuring all three WA core domains: (a) agreement on the tasks of therapy; (b) agreement on the goals of therapy; (c) development of an affective bond. It is highly valid and reliable, and both the 36- and 12-item versions are equally psychometrically robust (Gutiérrez-Sánchez et al., 2021). Having a shorter version increases the feasibility of WA evaluation in routine clinical care. It is translated and validated into more than 23 languages facilitating cross-cultural comparisons of WA (Working Alliance Inventory website). It is available in multiple forms – i.e. client, therapist, or observer versions, enabling a holistic WA assessment – and is highly versatile – e.g. used to measure WA in physical conditions (Gutiérrez-Sánchez et al., 2021). Lastly, it is crucial to complement WAI ratings with other measurement techniques such as observer checklists and other WA measures (e.g. Helping Alliance Questionnaire, California Psychotherapy Alliance Scale) for comprehensive WA evaluation. Gutiérrez-Sánchez D, Pérez-Cruzado D & Cuesta-Vargas AI. Systematic review of therapeutic alliance measurement instruments in physiotherapy. Physiotherapy Canada, 2021; 73(3): 212-217. https://doi.org/10.3138/ptc-2019-0077 Luong HK, Drummond S & Norton PJ. Elements of the therapeutic relationship in CBT for anxiety disorders: A systematic review. Journal of Anxiety Disorders, 2020; 76: 102322. https://doi.org/10.1016/j.janxdis.2020.102322 Martin DJ, Garske JP & Davis MK. Relation of the therapeutic alliance with outcome and other variables: A meta-analytic review. Journal of Consulting and Clinical Psychology, 2000; 68(3): 438-450. https://doi.org/10.1037/0022-006X.68.3.438 Working Alliance Inventory website. https://wai.profhorvath.com/

Appendix 3: Further reading suggested by the review teams

Behaviours and activities

Collaborative goal setting and tracking

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- Completion of the six-year RADAR-CNS programme generated a significant number of papers related to remote measurement in depression: https://www.radar-cns.org/publications/publications-2022

Self-disclosure

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Beliefs and knowledge

Cultural connection

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Mental health literacy and psychoeducation

Further reading suggested by Sandesh Dhakal, Felipe Botero-Rodríguez, and team:

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Further reading suggested by Darya Gaysina and team:

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Brain/body functions

Hippocampal neurogenesis

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Human connections

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Family support

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Social inclusion

Further reading suggested by Xanthe Hunt and team:

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Further reading suggested by Gemma Lewis and team:

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Working alliance

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