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FOUNDATION

Adolescent mental health

A systematic review on the effectiveness of school-based interventions

July 2021

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About EIF

The Early Intervention Foundation (EIF) is an independent charity established in 2013 to champion and support the use of effective early intervention to improve the lives of children and young people at risk of experiencing poor outcomes.

Effective early intervention works to prevent problems occurring, or to tackle them head-on when they do, before problems get worse. It also helps to foster a whole set of personal strengths and skills that prepare a child for adult life.

EIF is a research charity, focused on promoting and enabling an evidence-based approach to early intervention. Our work focuses on the developmental issues that can arise during a child's life, from birth to the age of 18, including their physical, cognitive, behavioural and social and emotional development. As a result, our work covers a wide range of policy and service areas, including health, education, families and policing.

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The aim of this report is to support policymakers, practitioners and commissioners to make informed choices. We have reviewed data from authoritative sources but this analysis must be seen as a supplement to, rather than a substitute for, professional judgment. The What Works Network is not responsible for, and cannot guarantee the accuracy of, any analysis produced or cited herein.

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Summary

There is increasing concern about the mental health and wellbeing of young people. According to international data, the peak age of onset for any mental disorders is 14.5 years (Solmi et al., 2021). Prevalence data in England shows that approximately one in seven young people (14.4%) aged 11–19 experience at least one mental disorder (NHS Digital, 2018). Emotional disorders, including anxiety and depression, are the most common mental disorders experienced by young people, followed by behavioural disorders. The most recent data suggests that young people's mental health has further deteriorated (NHS Digital, 2020). Covid-19 is likely to have played a role in the latest deterioration due to the unprecedented degree of disruption and uncertainty the pandemic has brought to the lives of young people.

Emotional and behavioural problems, if left unaddressed, often persist into adulthood. Longitudinal research has shown that young people who experience persistent emotional and behavioural problems during adolescence are at greater risk of negative outcomes throughout their adult life, including increased risk of depression and anxiety during adulthood, poorer employment outcomes, and not in education, employment or training (NEET) status (Clarke & Lovewell, 2021).

The growing national and international concern about young people's mental health and wellbeing has led to increasing emphasis being placed upon promotion, prevention and early intervention (Solmi et al., 2021). It is increasingly recognised that treatment approaches alone are not sufficient to address the burden of mental disorders among the adolescent population and to bring about improvements in mental health and wellbeing at a population level (Barry et al., 2019). Intervening early to prevent problems from developing brings several advantages, including intervening before patterns become ingrained and difficult to reverse, reducing the burden on young people and their families, and reducing the costs associated with treating mental disorders (Ormel et al., 2019; Barry et al., 2019; Catalano et al., 2012).

Our mission at the Early Intervention Foundation (EIF) is to ensure that effective early intervention is available and used to improve the lives of children and young people, in particular, those at risk of experiencing poor outcomes. Schools are likely to play a crucial role in supporting many young people's mental health and can also enable intervention with young people displaying early symptoms. The school setting provides an opportunity to reach large numbers of young people simultaneously. Staff spend significant time with young people which provides them with an opportunity to develop a trusting and supportive relationship. School staff are also well placed to notice changes in young people and to intervene early in relation to mental health or behavioural concerns (Barry et al., 2019; Fazel et al. 2014). The delivery of interventions in secondary schools provides real opportunities to enhance a range of outcomes and prevent or reduce emotional and behavioural problems in young people, especially as the prevalence of disorders increases with age across secondary school (NHS Digital, 2018).

It is essential that what is delivered in schools is informed by the evidence base. In this review we examine the latest evidence on the effectiveness of school-based interventions designed to address young people's emotional and behavioural needs.

The report consists of three major parts which provide evidence of the effectiveness of interventions designed to:

- enhance young people's mental health and wellbeing outcomes: this includes social and emotional learning interventions, positive psychology interventions, mindfulness-based interventions, positive youth development interventions, and mental health literacy interventions
- reduce or prevent internalising symptoms/mental health difficulties, including anxiety and depression prevention interventions, and suicide and self-harm prevention interventions
- reduce or prevent externalising symptoms/behavioural difficulties, including aggression and violence prevention interventions, bullying prevention interventions, and sexual violence prevention interventions.

Interventions were categorised according to their core aim and primary outcomes. It is, however, important to acknowledge that there is a certain degree of overlap across these categories and the interventions within these categories.

Drawing on evidence from 34 systematic reviews published since 2010 together with 97 primary studies published over the past three years, this evidence review provides a comprehensive and up-to-date summary of what works, for whom and under what circumstances. The findings from this review will form the basis of EIF's ongoing programme of work to support young people's mental health, including the development of guidance for secondary school staff on supporting young people's emotional and behavioural needs (March 2022).

Key findings

We found that:

- **Universal social and emotional learning (SEL) interventions have good evidence of enhancing young people's social and emotional skills and reducing symptoms of depression and anxiety in the short term.** Other approaches to enhancing young people's mental health and wellbeing have produced inconsistent (mindfulness interventions) or limited evidence of impact (positive youth development interventions). Mental health literacy interventions have been shown to have an impact on young people's mental health knowledge; however, there is less evidence of impact on improving help-seeking behaviour. Limited research has been carried out to date on the long-term impact of any of these interventions.
- **There is good evidence that universal and targeted cognitive behavioural therapy (CBT) interventions are effective in reducing internalising symptoms in young people.** Universal CBT interventions have evidence of improving symptoms of depression and anxiety in the short term. Targeted cognitive behavioural therapy interventions delivered to young people with minimal but detectable signs of depressive symptoms appear to be effective in reducing symptoms of depression in both the short and medium term.
- **There is limited evidence on the effectiveness of school-based interventions designed to prevent suicide and self-harm.**
- **Violence prevention interventions have been shown to have a small but positive effect on aggressive behaviour in the short term.** There is evidence that some of these interventions can also have an impact on other behavioural outcomes including bullying victimisation and pupil wellbeing. Programme effects are greater among students considered at high risk of violent behaviour.

- **Bullying prevention interventions are effective in reducing the frequency of traditional and cyberbullying victimisation and perpetration.** There is also good evidence that these interventions have a long-term effect on traditional bullying perpetration.
- **There is promising evidence on the effectiveness of interventions designed to reduce sexual violence and harassment when delivered to young people at risk of experiencing sexual violence.** The evidence shows that these programmes can reduce sexual violence perpetration and victimisation.
- **The impact of depression and anxiety prevention interventions and violence prevention interventions tends be stronger when they are targeted at young people with elevated but subclinical symptoms.** It is likely that interventions aimed at preventing mental health and behavioural problems are less effective among the general population because there is less scope for change. This would suggest that interventions aimed at intervening early to reduce emotional and behavioural difficulties are best directed towards at-risk populations and individuals.
- **In addition to reducing mental health and behavioural difficulties it is essential to support the development of social, emotional and behavioural competencies at a universal level.** A growing body of evidence indicates that enhancing social, emotional and behavioural skills (including emotional identification, articulation and regulation; communication skills; conflict resolution skills; behavioural self-regulation; empathy and perspective taking) is a key determinant to young people's mental health and wellbeing, and supports them in achieving positive outcomes in school, work and life.
- There are a limited number of interventions which report evidence of improving mental health and behavioural outcomes among diverse groups and an **even smaller number of interventions specifically designed for and evaluated with minority ethnic groups.** Findings from these studies do, however, suggest promising impact on mental health and behavioural outcomes when delivered at both universal and targeted level.
- **Universal interventions can be effectively delivered by teachers; however, there is no evidence that teacher-delivered interventions are effective in addressing the needs of students with symptoms of depression or anxiety.** Our review has found that for this group of young people, CBT interventions delivered by external professionals, such as psychologists, provide the only convincing evidence in terms of improving mental health outcomes.
- **High-quality programme implementation is critical to achieving positive outcomes.** Where monitored, research has shown that positive effects are observed when programmes are implemented with high quality (measured in terms of dosage, adherence, quality of delivery and participant responsiveness). This is in contrast to inconsistent/poor implementation which has been shown to result in diminished or null effects. Research on the sustainability of mental health interventions beyond the efficacy trial is very limited.

Implications for policymakers

Over the past two decades, we have witnessed deteriorating mental health among young people in the UK. Most recently, the significant disruption and uncertainty created by Covid-19 has put more young people at risk of experiencing mental health and behavioural difficulties (Mansfield et al., 2021). Now more than ever, there is an urgent need for high-quality school-based support to address young people's mental health and behavioural needs.

The findings from this review provide important insights into what works to support young people's mental health and behavioural needs, for whom, and under what conditions these interventions work. The evidence in this report should be used in current national policy, including the implementation of the *Transforming Children and Young People's Mental Health* green paper proposals and future policy decisions. There are a number of implications to take into account when designing policy.

- **Incentivise and support the use of programmes and approaches which have established evidence of improving young people's outcomes.** The evidence review provides clear evidence on the effectiveness of some approaches in improving young people's wellbeing, reducing symptoms of depression and anxiety, or reducing aggressive behaviour, bullying perpetration and victimisation. It is vital that evidence-based programmes are prioritised over the vast array of programmes and resources that are available to schools, many of which lack evidence of effectiveness or have evidence of not improving outcomes.
- **Support schools to adopt a whole-school approach.** Programmes are more likely to be effective and result in enduring positive change when they are implemented as part of a multi-tiered whole-school approach to improving young people's mental health and behaviour. A mental health or behavioural intervention should not be a one-off event in the school's yearly calendar. Instead, schools need to be supported in the adoption of a whole-school approach which encompasses: (i) universal and targeted interventions; (ii) the embedding of this work within a supportive school environment which fosters positive relationships, a sense of belonging and purpose; and (iii) extending learning to the home environment and developing strong connections with mental health services to support the most vulnerable young people.
- **Develop teachers' skills and confidence in supporting young people's mental health.** As part of a whole-school approach, there is a need for teacher training to enable all school staff to understand and model these skills and behaviours through their everyday interaction with young people. Teachers frequently report limited confidence in being able to respond to young people's mental health and behavioural needs. The provision of high-quality pre-service teacher training and continuing professional development is necessary to equip teachers with the knowledge and skills to enable them to develop learning experiences that support young people's social, emotional, behavioural and academic competencies.
- **Provide external mental health expertise to schools to support the most vulnerable.** A system of identification is needed to better target the most vulnerable pupils at risk of developing mental health and behavioural problems to ensure that they can receive timely early intervention support. It is essential, therefore, that the necessary interventions and support are available for young people most in need. Our evidence review has found that for young people with symptoms of depression or anxiety, CBT interventions delivered by external professionals are necessary to improve mental health outcomes. There is no evidence that teacher-delivered interventions are effective among students with internalising symptoms. Schools should be provided with the necessary external support to intervene early with those most in need. If appropriately resourced and trained, Mental Health Support Teams could provide a real opportunity to address this issue.
- **Focus on high-quality implementation of interventions.** Implementing evidence-based interventions and support within complex systems like schools requires a supportive implementation system in ensuring successful outcomes. National policymaking must focus on high-quality implementation and providing schools with implementation support, for example in building readiness and commitment for change among all school staff, understanding the needs of the pupil population, developing an action plan, addressing barriers to implementation, and sustainability of evidence-based interventions within schools.

Recommendations for future research

Our review has identified substantial gaps in the evidence base which must be addressed if we are to offer high-quality mental health and behavioural support in secondary schools which has the potential to impact not only short- but long-term mental health, educational and social outcomes. Key research priorities are presented below.

- Despite the fact that we identified 97 primary studies published in the last three years and nine of these were carried out in the UK, only one UK study was designed to strengthen young people's mental health and wellbeing. **We need to invest in the evaluation of mental health and behavioural interventions in the UK, in particular interventions designed to enhance young people's mental health and wellbeing.** As part of this we need to avoid common pitfalls when evaluating interventions to ensure confidence in programme outcomes.[1]
- **Future research needs to examine the long-term impact of school-based mental health and behavioural interventions.** This review repeatedly points to the limited number of studies which examined if benefits are maintained at follow-up. Of the studies that report long-term follow-up, the evidence is mixed: some studies report that effects were maintained; others found that effects had disappeared; and a small number of studies reported that effects had become significant only at follow-up. Future research needs to investigate the additional supports required to maintain positive impact at long-term follow-up.
- Despite consistent evidence on the effectiveness of mental health and behavioural interventions delivered to minority ethnic young people and young people from lower socioeconomic backgrounds, relatively few of these interventions were specifically developed for these at-risk groups. **Future research needs to invest in developing and evaluating interventions which have been specifically designed to meet the needs of minority ethnic young people and young people from a lower socioeconomic background.** As part of this, we need to investigate the degree to which cultural adaptations or the designing of intervention materials that are representative of diverse student populations result in a larger impact on young people's outcomes.
- **Additional research is necessary to understand the effectiveness of mental health and behavioural interventions among other vulnerable groups of young people including, for example, young people at risk of school dropout, LGBTQIA young people, young people with special educational needs and disability (SEND), young people with chronic illnesses, and young people with autism spectrum disorder.** Research should examine whether interventions that currently exist are equally, less or more effective for vulnerable groups. In addition, research should also examine whether interventions can be effective when delivered at the universal level in order to prevent marginalising vulnerable groups.
- **We identified a very limited number of interventions addressing cyberbullying, conduct problems and self-harm.** Future research should invest in developing and evaluating the efficacy of interventions designed to address these important issues which can have a significant impact on young people's long-term mental health and wellbeing.
- Despite the evidence regarding the coexistence of mental health and behavioural problems during adolescence and their combined impact on adult functioning (including mental health, suicidality, low education level, financial difficulties and delinquency), we identified a very limited number of interventions designed to address young people's mental health and behavioural needs. **Future research should examine the efficacy of an integrated prevention model which combines evidence-based mental health and behavioural approaches.**

1 See https://www.eif.org.uk/resource/evaluating-early-intervention-programmes-six-common-pitfalls-and-how-to-avoid-them

Implementation research: priority areas

- Evaluation studies continue to provide limited, if any, data on implementation. Without data on what was implemented (dosage, adherence) and the quality of delivery, **we are unable to determine what led to a programme's success or failure.** In addition, we risk misinterpreting null effects in cases where the intervention was poorly implemented. It is crucial that we address this gap in future research trials.
- As part of evaluation research, there is a need to identify barriers to delivering universal and targeted mental health support within schools (such as resourcing; programme model and its fit within the school context; implementer readiness in terms of skills, knowledge and beliefs; pupil acceptability; stigma associated with receiving targeted interventions, and so on). **Reporting on implementation barriers as part of efficacy trials will advance our understanding of the conditions necessary to support programme outcomes**, which will have implications for future programme development and teacher training.
- **Further clarity on what works for whom is necessary.** While our review provides evidence on the effectiveness of various approaches designed to address young people's mental health and behavioural needs, there is limited evidence on whom these approaches are effective/ineffective with. Future research should investigate which young people (gender, age, risk factors) are more likely to benefit from particular types of interventions (universal, targeted).
- **Research on the sustainability of effective interventions is urgently needed** to progress the field of research beyond our understanding of what works to understanding the supports required to sustain evidence-based interventions over time. Future research should examine barriers and facilitating factors that affect the sustainability of interventions after external funds and other resources end.

Download
To download this report or the appendices, which provide in-depth information on all of the systematic reviews and primary studies that were analysed as part of this systematic review, please visit: https://www.eif.org.uk/report/adolescent-mental-health-a-systematic-review-on-the-effectiveness-of-school-based-interventions

Background

Adolescence is a particularly important phase of life characterised by many physical, mental and social changes that provide opportunities for exploration and growth. Stressors during this period (such as exam pressure, bullying victimisation, body-image issues) can have a significant impact on young people's mental health and behaviour with negative consequences that can remain into adulthood.

Research carried out during the Covid-19 pandemic suggests that while some young people are coping well, others are at increased risk of experiencing poor mental health through a combination of new and additional stresses and pressures at home, reduced access to much-needed services, and limited opportunities for social interaction and support from friends and wider family (Ford et al., 2021). There is some evidence to indicate that the pandemic has had a disproportionate impact on the most vulnerable children and young people, including those whose parents suffer with poor mental health, young carers, children and young people with special needs, children and young people at risk of suffering harm, and those living in poverty and overcrowded housing (Lewis et al., 2021; Viner et al., 2021).

Prevalence data from the Mental Health of Children and Young People (MHCYP) survey suggests that young people's mental health has been deteriorating over the past two decades. In 2017, approximately one in seven young people were identified as having experienced at least one mental disorder (NHS Digital, 2018). The most recent data, which was collected during the first national lockdown (July 2020), suggests that in comparison to previous waves, young people's mental health has deteriorated further. Probable mental health conditions among 11–16-year-olds increased from 12.6% in 2017 to 17.6% in July 2020 (NHS Digital, 2020). Prevalence of probable mental disorders has nearly doubled in Black, Asian and minority ethnic adolescents since 2017. While these increased rates may reflect more accurate reporting – potentially due to increased awareness, reduced stigma and improved screening – they may also represent an increase in prevalence rates, which is of significant concern given what we know about both the immediate and long-term impact of mental health problems experienced during adolescence.

There is growing evidence that young people's mental health is linked to educational success. Emotional problems can undermine academic progress, by eroding cognitive functioning related to learning such as working memory, engagement and persistence, and participation during learning activities. Behavioural problems can limit opportunities for learning to occur in the classroom, and thereby affect academic achievement (Moilanen et al., 2010). Longitudinal research in the UK has found that low levels of socio-emotional development among 11–14-year-olds is associated with a lower likelihood of gaining 5 A*–C GCSEs including maths and English at age 16 (Smith et al., 2019). Additional UK research also presents evidence on the negative impact of behavioural problems on young people's academic achievement (Deighton et al., 2018).

As well as having a negative impact during this key period, young people who experience persistent emotional and behavioural problems during adolescence are at greater risk of negative outcomes throughout their adult life, including increased risk of depression and anxiety during adulthood, poorer employment outcomes and NEET (not in education, employment or training) status (Clarke & Lovewell, 2021). Behavioural problems are also associated with a range of negative physical and social outcomes in adulthood. Our review of the evidence found that while young people with persistent, high-level symptoms appear

to be most at risk, those with subclinical symptoms are also at elevated risk of poorer adult outcomes than their peers (Clarke & Lovewell, 2021). The evidence, therefore, suggests that in addition to the urgent need to prioritise targeted services for those with, or at risk of, persistent emotional or behavioural problems during adolescence, there is a need to invest in the prevention of emotional and behavioural problems – and early intervention support – to reduce vulnerabilities and enhance protective factors.

Schools are seen as an important setting to support young people's mental health and wellbeing and to address emotional and behavioural problems before they become entrenched. The school environment is not only a place of learning, it is an important source of friends, social networks and adult role models, which can have a significant influence on young people's development (Barry et al., 2019). School staff are also in a position to notice changes in young people and to intervene early in relation to mental health or behavioural concerns.

We know that schools want to address young people's mental health and wellbeing. In a survey of over 700 teachers and school leaders conducted for the Early Intervention Foundation by the National Foundation for Educational Research, 85% of respondents reported that mental health was a priority for their schools. We also know that parents support this level of attention. In a survey with over 600 parents conducted for EIF by Ipsos MORI in September 2020, 7 in 10 parents said they wanted schools to do more to support their children's mental health and wellbeing.

In England, schools deliver support for all pupils through personal, social, health and economic (PSHE) education. PSHE covers many areas of study including drug education, financial education, sex and relationship education, and physical and emotional health. In 2017, the government's green paper *Transforming Children and Young People's Mental Health* recommended increasing the role of schools in the provision of mental health services. This has resulted in the provision of funding for training for Designated Senior Leads for Mental Health in every school and college to oversee their approach to mental health and wellbeing. In addition, Mental Health Support Teams, supervised by the NHS are being created to assist schools in providing early intervention support for children and young people with mild to moderate mental health problems.

The delivery of mental health support in schools through Designated Senior Leads and Mental Health Support Teams provides real promise in terms of addressing some of the biggest challenges currently being faced by young people, their families, schools and society as a whole. It is, however, essential that decisions made by policymakers and professionals about what should be delivered in schools are informed by the evidence base. In this systematic review we examine the latest evidence on the effectiveness of universal and targeted mental health and behavioural interventions implemented with young people in secondary schools. We have synthesised the evidence from 34 systematic reviews published since 2010 and 97 primary studies published over the past three years. This review also seeks to address for whom and under what circumstances programmes have been shown to be effective. Understanding factors that moderate programme outcomes is essential to advancing our understanding of how to implement mental health and behavioural interventions in schools.

Structure of the report

In the remainder of the report we provide a detailed overview of our work and findings.

- In the Methodology chapter, we describe our methodology for conducting our systematic search of the literature.
- Part 1 – **Promotion** – presents evidence on the effectiveness of school-based interventions designed to enhance young people's mental health and wellbeing. This includes social and emotional learning, positive psychology interventions, mindfulness-based interventions, positive youth development interventions and mental health literacy interventions.
- Part 2 – **Prevention** – examines the effectiveness of interventions to prevent mental health difficulties including anxiety and depression prevention interventions and suicide and self-harm prevention interventions.
- Part 3 – **Behaviour** – presents evidence on the effectiveness of interventions designed to prevent behavioural problems in young people. We examine aggression and violence prevention interventions, bullying prevention interventions and sexual violence prevention interventions.
- The final chapter summarises our key findings, and presents our recommendations for policymakers and future research.

In-depth appendices

The appendices of this report are available as a separate document.[2] These provide detail on the systematic reviews and primary studies that fulfilled our inclusion criteria and were analysed as part of this systematic review.

Each appendix (on Promotion, Prevention and Behaviour) includes a table of systematic reviews and a table of primary studies.

- The table of systematic reviews provides specific detail on the type of analysis, inclusion criteria, number of studies included, quality assessment rating and key findings.
- The table of primary studies briefly describes each intervention in terms of content, duration, format and facilitator, the study design and sample, quality assessment rating and key findings.

2 Available at: **https://www.eif.org.uk/report/adolescent-mental-health-a-systematic-review-on-the-effectiveness-of-school-based-interventions**

Methodology

Aims

The aims of this systematic review were to:

- examine evidence on the effectiveness of school-based mental health and behavioural interventions implemented with young people aged 12–18 years of age nationally and internationally (*what works*)
- ascertain the characteristics (age, gender, ethnicity, socioeconomic status) of young people who experience the largest impact from school-based mental health interventions (*for whom*)
- determine the conditions under which programmes have been proven to be effective (*under what circumstances*)
- identify gaps in the evidence base and directions for future research.

Methods

This evidence review consists of:

- a systematic review of meta-analyses and narrative reviews published between January 2010 and August 2020
- a systematic review of primary studies published between January 2017 and August 2020.

The rationale for this approach is to bring together the evidence from across the various narrative reviews and meta-analyses of mental health and behavioural interventions. Focusing exclusively on systematic reviews, however, would have meant our review missed out on the latest evidence of what works as well as additional information regarding for whom and under what circumstances effects were observed. For this reason, we conducted a 'top-up search' of primary studies published in the past three years. We contrast the findings from primary studies with findings from the review of the evidence from 2010 to 2020, so we can understand whether gaps identified through the review of reviews persist, whether conclusions hold, and what additional insights we can gain from the most recently published research.

Glossary

Review of reviews

A systematic review of systematic reviews.

Systematic review

A piece of research that involves systematically assessing evidence that relates to a specified topic. A systematic approach avoids confirmation bias as included studies are not selected based on their findings but based on the research question. A systematic review (i) has a specific research question; (ii) has clear inclusion/exclusion criteria for screening; (iii) searches databases systematically, complemented by manual searches to identify relevant papers; (iv) included papers need to be thoroughly quality appraised to assess the robustness of findings; (v) the heterogeneity of primary studies must be considered; and (vi) an appropriate way to synthesise findings must be applied.

Narrative synthesis

A type of systematic review, where findings from primary studies are synthesised narratively; that is, combined using text.

Meta-analysis

A type of systematic review, where findings are synthesised using statistical methods; findings from different primary studies are pooled to understand the effect interventions had on average. This is only sensible if primary studies are sufficiently similar in terms of which interventions are included and which outcomes are measured and how.

Eligibility criteria for primary studies (top-up search)

We included evaluations of interventions that met the following criteria:

Participants: Interventions were delivered to young people aged 12–18 years. Interventions delivered to personnel working with adolescents in secondary schools (for instance gatekeeper training) were included if the evaluation report focused on adolescent outcomes, rather than on the personnel's knowledge or competencies.

Intervention type: Interventions were considered relevant if they were aimed at:

- enhancing young people's mental health, wellbeing or mental health literacy skills
- preventing/reducing mental health difficulties (including depression, anxiety, stress, self-harm or suicide)
- preventing behavioural difficulties (including antisocial behaviour, conduct problems, aggression, violence, bullying).

Interventions could be delivered face-to-face or online. In addition, interventions could be:

- universal (offered to whole school, whole year or whole class) or
- targeted selective (implemented with students considered at risk of developing mental health or behavioural difficulties) or
- targeted indicated (aimed at students with symptoms of poor mental health or aggressive behaviour but below clinical thresholds).

Comparison: Only empirical studies that used quantitative methods were eligible for inclusion. In addition to randomised controlled trials, we included quasi-experimental designs that allow causal inference as well as non-randomised pre/post designs. Studies without a control group were excluded. Studies could include comparator groups that receive no intervention, usual practice, or an active control.

Outcomes: This evidence review included primary studies that assessed the effectiveness of interventions to improve adolescent mental health and behavioural outcomes including:

- Wellbeing outcomes:
  - Subjective wellbeing – measures of happiness, life satisfaction, perceived quality of life, positive emotions, quality of life, mindfulness, relaxation
  - Psychosocial wellbeing – for example, measures of self-esteem, coping skills, emotional regulation, self-efficacy, decision-making, conflict resolution, problem-solving
- Mental health outcomes/Psychological wellbeing: symptoms of depression, anxiety, stress; suicidality and self-harm
- Mental health literacy outcomes: mental health stigma, knowledge and attitudes towards mental health, help-seeking intentions, help-seeking behaviour
- Behavioural outcomes: aggressive behaviour, violent behaviour, antisocial behaviour, peer-to-peer violence, student-to-teacher violence; (cyber)bullying; perpetration or victimisation of the above.

Outcomes could be measured using any appropriate standardised measure.

Setting: The intervention must have been received by young people in a secondary school in a higher-income country. International terminology to describe secondary school level varies, so eligible school settings were included, but were not limited to secondary school, middle school, high school. Studies conducted in primary school or in tertiary educational institutions were excluded.

Eligibility criteria for systematic reviews (review of reviews)

Systematic reviews were eligible for inclusion if they included primary studies that met the inclusion criteria above. In addition, reviews had to meet the following criteria:

- **Participants:** The review searched for adolescent-focused interventions. Reviews that searched for interventions for 'children and adolescents', 'kindergarten to grade 12' or 'adolescents and young adults older than 18 years' were excluded.
- **Interventions:** The review had to report on secondary school-based mental health or behavioural interventions.
- **Methodology:** Reviews were only included if they systematically searched a minimum of two databases. Reviews of reviews were excluded, but their reference lists were screened to identify relevant review papers.

Exclusion criteria

Neither primary studies nor systematic reviews were excluded based on publication status.

Interventions which were excluded included:

- interventions designed to treat emotional or behavioural disorders
- universal and targeted interventions delivered to young people in the community setting
- interventions delivered to family members (such as parenting interventions)
- interventions which used schools for recruitment purposes only
- interventions which were implemented with children younger than 12 years of age or young people older than 18 years of age.

Only papers where the full text was available in English were included. Evaluations published prior to 2017 were excluded due to the overlap with the review of reviews. Systematic reviews published before 2010 were excluded, and so were reviews that did not include at least one relevant primary study that had been published in or after 2010. Evaluations or reviews that did not report mental health or behavioural outcomes were also excluded (such as academic attainment, physical health, risky health behaviour).

Search strategy

To identify relevant papers for this evidence review, we used the search terms identified in table 1. Terms in each column were connected with a Boolean OR; columns were connected with the Boolean AND (meaning that papers where at least one of the terms from each of the columns occurred were identified). Asterisks were used to ensure the search would pick up on papers regardless of British or American English spelling (such as behavior vs behaviour) and on different forms of the term (such as efficacy and efficacious). The systematic search for reviews and primary studies was conducted in August 2020.

TABLE 1
Search terms

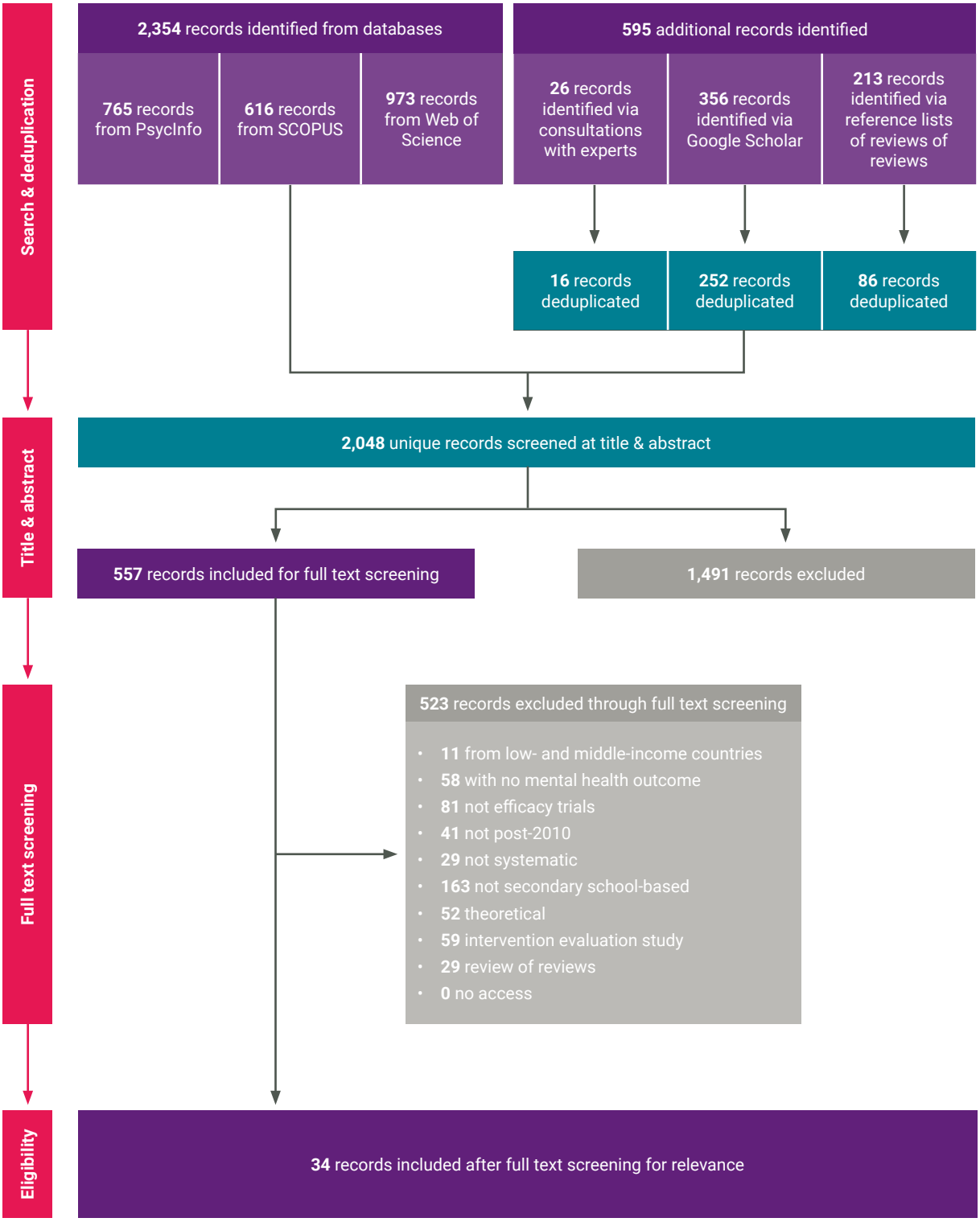
Mental health/behaviour		Early intervention	Setting	Population	Programme	Study	For review of reviews
anxiety	externali*	prevent*	secondary school	adolescen*	intervention	RCT	synthesis
mood	mental health	promot*	middle school	young people	program*	trial	evidence review
depress*	literacy	universal	middle school	youth	online	quasi-experimental	literature review
self-harm	mindful*	indicated	high school	young adult	training	evaluation	scoping
self-injury	character	targeted	school-based	teenager	therapy	study	meta-analysis
suicid*	youth development	at risk	classroom	student*	web	impact	
mental health	bullying	selective	whole school	pupil	internet	effica*	
well-being	cyber bullying	enhance			electronic	effective*	
wellbeing	aggressi*	support*			digital	implement*	
resilien*	violen*	improv*					
social	antisocial						
emotional	prosocial						
positive	conduct						
psychology	behavio*						
internali*							

Identification and selection of systematic reviews

To identify relevant systematic reviews, we searched three databases (PsycInfo, SCOPUS, Web of Science), consulted with experts, and conducted complementary manual searches on Google Scholar. We also screened the reference lists of reviews of reviews that were identified through the searches to identify additional systematic reviews. We identified 2,048 unique records. Search results were uploaded to Zotero for de-duplication and subsequently screened at title and abstract (n=2,048) and full-text level (n=557).

A total of 34 records met all inclusion criteria and are reported on in this evidence review. Figure 1 presents the identification and selection of systematic reviews. A PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flowchart is available upon request.

FIGURE 1
Flowchart for review of reviews



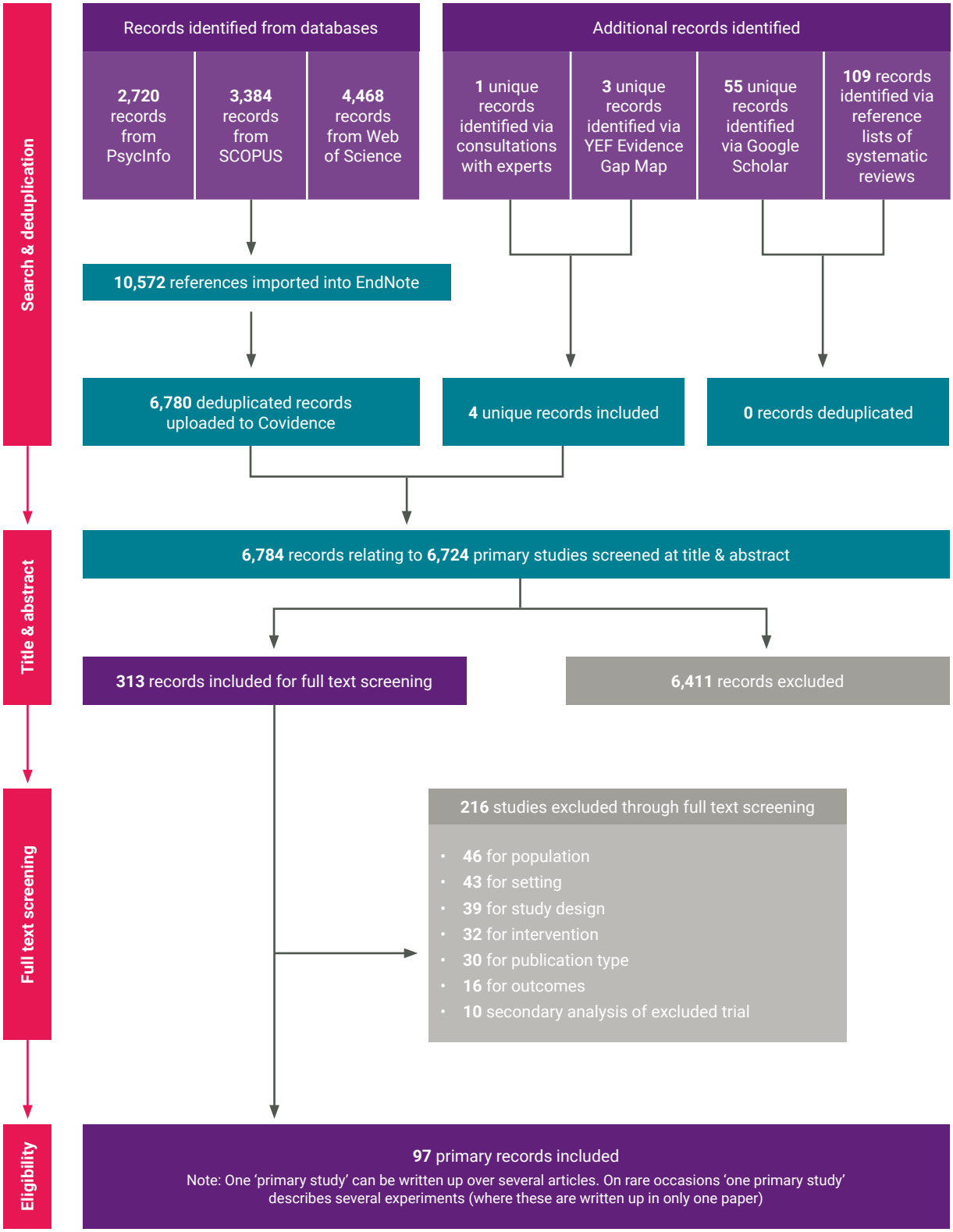
Identification and selection of primary studies

To identify relevant primary studies, we searched three databases (PsycInfo, SCOPUS, Web of Science), reviewed the reference lists of included systematic reviews, screened the YEF Evidence and Gaps Map, and conducted complementary manual searches on Google Scholar.

We identified a total of 6,784 unique records, which we uploaded to Covidence for title and abstract screening. There were 6,724 unique primary studies. At title and abstract level, 6,411 studies were excluded. Of the remaining 313 studies, 216 were excluded during full text screening. The remaining 97 studies were included. Figure 2 presents the identification and selection of primary studies. A PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flowchart is available upon request.

FIGURE 2

Flowchart for primary studies



Data extraction

Data was extracted by four researchers using separate Excel spreadsheets for the systematic reviews and for the primary studies.

Data extraction from the systematic reviews focused on:

- bibliographic information
- main aim of the research
- methods (PICOS, search window)
- results: summary of included primary studies
- conclusions: reporting of effects, adverse events, theoretical implications, implementation results or barriers/facilitators.

Data extraction from the primary studies focused on:

- bibliographic information
- main aim
- methods
- participants
- intervention
- outcome measures
- results.

Quality appraisal

The quality assessment tools that were used as part of this research were chosen based on recommendation from the Cochrane Collaboration regarding the review of public health interventions (Armstrong et al., 2007; Jackson & Waters, 2005). Systematic reviews that fulfilled the criteria for this evidence review underwent an assessment of their methodological quality using the *Quality Assessment Tool for Review Articles* (Health Evidence, 2005). Reviews were assessed in terms of:

- having a clear research question
- reporting appropriate inclusion criteria
- using a comprehensive search strategy
- covering at least a decade of primary research
- describing the level of evidence of included studies
- reporting appropriate robust quality assessments of included studies
- transparency of quality assessment
- assessment of heterogeneity to determine appropriateness of combining results
- weighting using appropriate methods based on the synthesis method
- appropriate interpretation of results.

Based on these 10 criteria, each review paper received a strong (total score 8–10), moderate (total score 5–7) or weak (total score 4 or less) assessment rating. Review papers were rated independently by two reviewers and any discrepancies were discussed until consensus was reached.

The methodological quality of primary studies was assessed using the *Quality Assessment Tool for Quantitative Studies* (EPHPP, 1998). Studies were assessed for:

- selection bias
- study design
- confounders
- blinding
- data collection methods
- dropouts.

Based on the ratings of the six criteria, each study received an overall quality rating of strong, moderate or weak. All studies were independently reviewed by two researchers. Any ratings that differed across the reviewers were discussed with the team until consensus was reached.

Data analysis

This review provides a narrative synthesis of the findings from the systematic reviews and primary studies.

Where this report mentions **significant effects**, this refers to the intervention group experiencing a significantly larger effect than the control group in the desirable direction. Significant effects can be improvements in positive outcomes (for instance wellbeing, resilience) or reductions in symptoms (such as depression, anxiety). Where treatment groups experienced significantly worse outcomes than the control group, we refer to this as 'adverse' outcomes. Regardless of the significance level applied within individual studies, in this report effects were described as significant, where p was less than or equal to 0.05.

We interpret **effect sizes** in line with Cohen's rule of thumb which sets thresholds for small effects at .2, moderate effects at .5, and large effect at .8 (Cohen, 2013). Cohen stresses the importance to apply these thresholds carefully and states that the terms 'small', 'medium' and 'large' are relative, not only to each other, but to the area of behavioural science or even more particularly to the specific content and research method being employed in any given investigation.

In order to more accurately appraise the different effect sizes reported across the included sources, we have adopted the 'very small' threshold at .1 introduced by Sawilowsky (2009). Lipsey and Wilson (1993) showed that the vast majority of meaningful effect sizes across psychological, educational and behavioural interventions fall within Cohen's small range. Therefore, we have introduced thresholds midway through the small and moderate intervals, and discuss 'small' and 'small-to-moderate' as well as 'moderate' and 'moderate-to-large' effects. This enables us to present a more accurate picture of the differential impact that intervention evaluations and meta-analyses have detected.

TABLE 2
Interpreting effect sizes of psychological, educational and behavioural interventions accurately

d < .1	.1 < d <.2	.2 < d < .35	.35 < d < .5	.5 < d < .65	.65 < d < .8	.8 < d
Negligible	Very small	Small	Small-to-moderate	Moderate	Moderate-to-large	Large

Collating findings and reporting on the nature of the evidence

In this report, when we are discussing evidence of effectiveness in relation to reviewed approaches, **'good evidence'** is established by a meta-analysis with a strong quality assessment rating that includes at least five primary studies. Alternatively, 'good evidence' is established by a narrative synthesis with a quality assessment rating of nine or above. In both cases, evidence is only described as 'good' if recent primary studies are in line with review findings. Where there is good evidence that an intervention approach (for instance cognitive behavioural therapy) is generally successful, this does not mean that each intervention within this space has good evidence; however, it does say that there are fewer concerns about a programme's theory of change.

'Promising evidence' in our review is established by a meta-analysis or by several narrative syntheses that do not meet the above criteria, but are of moderate or strong quality. Moreover, in order for this review to describe evidence as 'promising', recent primary studies need to echo review findings. Where there is promising evidence, further research is needed to better understand under what circumstances interventions usually replicate effects and whether interventions are transferable to other contexts. Larger trials that enable sub-group and moderator analyses are necessary to better understand for whom interventions are effective, and under what circumstances.

'Emerging evidence' is established by narrative synthesis only, whether this was conducted as part of the top-up search or whether this was extracted from the reviewed literature. Where there is emerging evidence, generalisability of results is limited. While some interventions of a particular type have had encouraging results, more research is required to understand the effectiveness of an approach. Rigorous, medium-sized trials are required to better understand the potential of an approach.

Mixed or **inconsistent evidence** is present where there are contradictory review findings, where recent primary studies do not echo review findings, or where significant effects are not consistently reported across individual studies.

Limited evidence describes the absence of strong research.

Presentation of results

The results section of this evidence review is presented according to three categories:

- interventions to promote mental health and wellbeing
- interventions to prevent or reduce mental health difficulties (including symptoms of depression/stress/anxiety, self-harm, suicidality)
- interventions to prevent or reduce behavioural problems, such as aggression, conduct problems or bullying.

Each of the following three results chapters presents the evidence on universal interventions, followed by targeted selective and targeted indicated. Findings in relation to 'for whom' and 'under what circumstances' interventions have been shown to be effective are subsequently presented. Within each results chapter we showcase a number of interventions identified through our search of primary studies (presented as 'Intervention spotlights'). These interventions have been selected because their approach and findings were thought to be particularly promising or relevant to the UK context.

Table 3 provides an overview of the 34 systematic reviews and 97 primary studies which inform the results chapters.

TABLE 3

Overview of systematic reviews and primary studies included in each results chapter

Systematic reviews

Promoting positive mental health and wellbeing N=11 systematic reviews	Preventing poor mental health N=12 systematic reviews	Preventing maladaptive behaviour N=11 systematic reviews
Baños et al., 2017	Calear et al., 2016	Alford & Derzon, 2013
Chis & Rusu, 2019	Carnevale, 2013	Castillo-Eito et al., 2020
Cilar et al., 2020	Feiss et al., 2019	Cox et al., 2016
Curran & Wexler, 2017	Gee et al., 2020	De Koker et al., 2014
Grant, 2013	Harlow et al., 2014	De La Rue et al., 2017
Kuosmanen et al., 2019	Klimes-Dougan et al., 2013	Gavine et al., 2016
McKeering & Hwang, 2019	O'Dea et al., 2015	Leen et al., 2013
Patafio et al., 2021	Scott, 2016	Lundgren & Amin, 2015
Seedaket et al., 2020	Shelemy et al., 2020	McElwain et al., 2017
Tejada-Gallardo et al., 2020	Ssegonja et al., 2019	Ng et al., 2020
van de Sande et al., 2019	van Loon et al., 2020	Reed et al., 2016
	Wei et al., 2015	

Primary studies

Promoting positive mental health and wellbeing N=46 trials		Preventing poor mental health N=23 trials	Preventing maladaptive behaviour N=28 trials
Ahmad et al., 2020	Kelley et al., 2021	Barry et al., 2017	Acosta et al., 2020
Allara et al., 2019	Knight et al., 2019	Brière et al., 2019	Banyard, 2019
Allen et al., 2020	Lam & Seiden, 2020	Brown et al., 2019	Benítez-Sillero, 2020
Andrés-Rodríguez et al., 2017	Larsen et al., 2019	Burckhardt, 2018	Bonell et al., 2017, 2018, 2020
Åvitsland et al., 2020	Link et al., 2020	Burckhardt et al., 2017,	Calvete et al., 2019a, 2019b
Beaudry et al., 2019 Swartz et al., 2017 Townsend et al., 2019	Lombas et al., 2019	García-Escalera, 2020	Carrascosa et al., 2019
Campos et al., 2018	Lubman et al., 2020	Garmy et al., 2019	Castillo-Gualda et al., 2018
Carissoli & Villani, 2019	Moore et al., 2019a, 2019b	Harrison & Wang, 2020	Cross et al., 2018
Coelho & Sousa, 2017	Muratori et al., 2020	Haugland et al., 2017, 2020	DeGue et al., 2020 Niolon et al., 2019 Vivolo-Kantor et al., 2019
Coelho et al., 2017	Pannebakker et al., 2019	Kozina, 2020	Densley et al., 2017
DeLuca et al., 2020	Roberts et al., 2019	Makover, 2019 Blossom et al., 2020	Goyer et al., 2019 (2 trials)
Dowling et al., 2019 Dowling & Barry, 2020	Rodríguez-Ledo et al., 2018	Ohira, 2019	Greco et al., 2019
Duthely et al., 2017	Saxena et al., 2020	Pearce et al., 2017	Ingram et al., 2019
Felver et al., 2019	Schoeps et al., 2018	Perry et al., 2017	Martinez & Zhao, 2018
Flynn et al., 2018	Sinyor et al., 2020	Putwain et al., 2018, 2020	McQuillin & McDaniel, 2020
Frank et al., 2017	Stapleton et al., 2018	Sælid & Nordahl, 2016	Midgett et al., 2017
Freire et al., 2018	Takahashi et al., 2020	Schleider et al., 2019	Morgan-Lopez et al., 2020
Fung et al., 2019	Tokolahi et al., 2018	Teesson et al., 2020	Muñoz-Fernández et al., 2019
Hart et al., 2018, 2020	Truskauskaitė-Kunevičienė et al., 2020	Terry et al., 2020	Obsuth et al., 2017
Howard et al., 2018	Umaña-Taylor et al., 2018a, 2018b	Torcasso et al., 2017	Peskin et al., 2019
Johnson et al., 2017	Veltro et al., 2020	Weeks et al., 2017	Reidy et al., 2017
Johnson & Wade, 2019	Volanen et al., 2020	Young et al., 2019 Benas et al., 2019	Sánchez-Jiménez et al., 2018
Kang et al., 2018	Wahl et al., 2019		Sargent et al., 2017
			Smokowski et al. 2018
			Suh, 2019
			Van Ryzin & Roseth, 2018
			Wójcik & Hełka, 2019

Promotion

Interventions to enhance mental health and wellbeing

Overview

In this chapter, we examine evidence on the effectiveness of school-based interventions designed to promote young people's mental health and wellbeing, the majority of which are delivered universally. Enhancing young people's mental health and wellbeing is fundamental to their overall development and supports the achievement of positive life outcomes including educational attainment, employment and health (Durlak et al., 2011; Guerra & Bradshaw, 2008; OECD, 2015). There are a variety of approaches and terms used to describe the work carried out in schools aimed at supporting young people's mental health and wellbeing, including 'character education', 'social and emotional learning', 'mental health literacy', 'strengths-based education', 'mindfulness-based interventions'. Through our search of the literature, we identified the following five main approaches.

Social and emotional learning (SEL) interventions: which includes curriculum-based and whole-school programmes with an explicit focus on the development of pupils' social and emotional skills, including emotional knowledge and expression, emotional regulation, communication skills, relationship skills, conflict resolution skills, and responsible decision-making. These skills are generally taught through a developmentally appropriate curriculum.

Positive psychology interventions: focus on strengthening young people's positive emotions, relationships and character strengths in addition to fostering skills for happiness and wellbeing. Similar to SEL, these interventions are generally delivered through a classroom curriculum.

Mindfulness-based interventions: originally derived from eastern traditions and Buddhist psychology, these interventions require participants to focus their awareness on the present moment. Mindfulness practice is sometimes integrated with other elements including physical movement such as yoga practice. Sessions include both formal and informal practices in breath awareness, mindful attention, awareness of body sensation, and awareness of thoughts and feelings.

Positive Youth Development interventions: cover an array of approaches, including personal mentoring, engaging youth in sports, recreations activities and youth leadership programmes. While these interventions may contain didactic elements very similar to SEL instruction, they usually include youth-led activities. Programmes are often designed around youth-led projects that allow young people to develop their self-esteem, sense of purpose, decision-making, leadership skills and positive interactions with others.

Mental health literacy interventions: provide psychoeducation in relation to mental health aimed at increasing young people's understanding of how to obtain and maintain positive mental health, decreasing stigma in relation to mental disorders, and enhancing help-seeking knowledge, attitudes and behaviours.

We have identified 12 systematic reviews examining the effectiveness of interventions designed to enhance young people's mental health and wellbeing. The reviews varied in their focus with some examining the impact of a particular approach – for instance mindfulness interventions (McKeering & Hwang, 2019) – while other reviews had a broader focus examining impact of interventions designed to promote young people's mental health and wellbeing – such as Kuosmanen et al. (2019).

Through our search of primary studies, we identified 46 studies published over the past three years. Studies evaluated the impact of a range of approaches including:

- social and emotional learning (N=13)
- positive psychology interventions (N=4)
- mindfulness-based interventions (N=12)
- positive youth development interventions (N=5)
- mental health literacy interventions (N=10)
- other approaches (N=2).

Programme facilitators across these interventions include trained teachers and to a lesser degree, external professionals (such as psychologists). The majority of studies were carried out in Europe (N=17) or North America/Canada (N=15). One study was carried out in the UK (Kelley et al., 2021). The main outcomes examined as part of these trials were 'psychosocial wellbeing' (social and emotional skills including coping skills, emotional regulation, self-control), 'psychological wellbeing' (depression and anxiety symptoms) and 'subjective wellbeing' (for instance, quality of life). A relatively small number of studies examined impact on behaviour outcomes and academic achievement.

Key points: Mental health promotion and wellbeing interventions

What works?

Most mental health promotion interventions are delivered universally in the form of a classroom curriculum. Evidence of the impact of mental health promotion interventions varies across approaches, with findings being most consistent for SEL interventions.

- There is good evidence that **SEL interventions** can have a small to moderate impact on young people's social and emotional skills and symptoms of depression and anxiety in the short term. There is limited evidence from a number of primary studies of mixed quality regarding the long-term (ranging 3–20 months) impact of SEL interventions on young people's social and emotional skills, symptoms of depression and behaviour.
- There is emerging evidence from a limited number of studies that **positive psychology interventions** can have a small impact in enhancing young people's psychological wellbeing (satisfaction with life) and in reducing symptoms of depression and anxiety in the long term.
- While **meditation and mindfulness-based interventions** have grown in popularity over the last few years, evidence of effectiveness in improving mental health and wellbeing outcomes is limited and where impact was found, often methodological concerns were identified. Interventions appear to be most effective in enhancing young people's cognitive capacity, such as attention.
- While **positive youth development interventions** cover an array of approaches implemented in secondary schools, there is very limited evidence that these interventions have an impact on young people's mental health and wellbeing.
- There is good evidence that **mental health literacy interventions** can have a positive impact on young people's mental health knowledge. There is, however, limited evidence that these interventions can have an impact on stigma, attitudes towards mental health, and help-seeking behaviour. Further research is required to understand what additional supports are needed to enhance help-seeking behaviour, in particular for those at heightened risk of developing poor mental health.

For whom and under what circumstances?

- Moderator analyses conducted on a limited number of studies revealed that intervention effects were larger among youth with more severe symptoms of poor mental health and perceived stress compared with students with lower severity at baseline.
- Interventions that adopt a structured approach to the explicit teaching of skills had a more consistent positive impact on pupils' outcomes. These interventions in general adopt the **SAFE** principles (**S**equenced set activities which develop skills chronologically, **A**ctive forms of learning, **F**ocused time to develop skills and **E**xplicit targeting of a core set of skills). Interventions which were more likely to adopt SAFE principles included SEL interventions.
- Quality of implementation matters. Where monitored, research has shown that positive effects are observed when programmes are implemented with a high degree of quality (measured in terms of dosage, adherence, quality of delivery and participant responsiveness). These findings are consistent with several reviews which have demonstrated a relationship between implementation quality and programme outcomes.

- Classroom teachers were shown to be effective programme facilitators. The delivery of universal interventions by classroom teachers has a number of advantages, including embedding practices within the context of the wider curriculum and providing young people with continuous, consistent opportunities to practise these skills 'in real time'.

Take-home messages

- There is good evidence from our review that universal social and emotional learning (SEL) interventions can have a significant impact on the development of social and emotional skills and in the reduction of symptoms of depression and anxiety in young people. Supporting young people in the development of skills such as emotional identification, coping skills, communication skills, resilience and self-efficacy are essential for the increasingly complex and rapidly changing world in which we live. Good social and emotional skills can act as a protective factor, not only for mental health problems but also a wider range of negative educational, social and health outcomes.
- There is strong evidence demonstrating a relationship between high-quality programme implementation and improved outcomes in young people. Simply adopting an evidence-based programme is not a guarantee to ensuring enhanced mental health and wellbeing outcomes in young people. To realise the potential of school-based mental health promotion interventions, schools need to be supported in the delivery of evidence-based interventions with high quality, which also includes addressing barriers to implementation.
- To deliver mental health promotion programmes to a high standard, teachers and schools require high-quality training, monitoring and support structures. There is a need to invest in appropriate training and ongoing support to ensure teachers are equipped with the knowledge and skills necessary o ensure effective implementation of evidence-based interventions.

Research recommendations

- There is a need to invest in long-term evaluation studies. The majority of studies we reviewed did not include long-term follow-up data. Without follow-up data being consistently collected across studies, it is not possible to determine whether short-term improvements in young people's mental health are maintained in the long term.
- Given the heterogeneity of results across mindfulness-based interventions, there is a need for more robust research to determine programme efficacy and with whom and under what conditions these programmes are most effective.
- While mental health literacy interventions have good evidence of improving young people's knowledge, further research is required to understand what is needed to support help-seeking behaviours, in particular for those at heightened risk of developing poor mental health.
- Measuring implementation and its impact on programme outcomes is a significant gap in the current evidence base. In order to understand the evidence underpinning school interventions, it is essential that we monitor and report implementation findings including programme dosage, adherence, quality of delivery, participant responsiveness and experienced barriers to implementation. This will assist us in understanding programme outcomes, will reduce the risk of misinterpreting insignificant findings, and will advance our understanding of the conditions necessary for a programme to succeed.

Quality of research

Three of 11 reviews we identified were meta-analyses of interventions designed to promote young people's mental health and were of strong/moderate quality (table 4). The remaining reviews were narrative syntheses of the literature and of mixed quality. Five of the narrative syntheses were of moderate quality while two were weak and one was strong. Our analysis of the evidence focused on reviews which received a strong or moderate quality rating (N=9).

TABLE 4

Quality assessment rating of mental health promotion systematic reviews

Author	Type of evidence review	Quality assessment rating
Banos et al., 2017	Narrative synthesis	Moderate
Chis & Rusu., 2019	Narrative synthesis	Weak
Cilar et al., 2020	Narrative synthesis	Moderate
Curran & Wexler, 2017	Narrative synthesis	Weak
Grant, 2012	Meta-analysis	Moderate
Kuosmanen, Clarke & Barry, 2019	Narrative synthesis	Moderate
McKeering & Hwang, 2019	Narrative synthesis	Strong
Patafio et al., 2021	Narrative synthesis	Moderate
Seedaket et al., 2020	Narrative synthesis	Moderate
Tejada-Gallardo et al., 2020	Meta-Analysis	Moderate
van de Sande et al., 2019	Meta-Analysis	Strong

The quality of the 46 studies we identified through our top-up search was quite mixed which is in line with what was reported across the systematic reviews. Around a third of studies were of high (N=14), moderate (N=17) and weak (N=15) quality, respectively. It is difficult to draw strong conclusions from weak-quality studies. As a result, our analysis focuses on studies which received a moderate or strong quality assessment rating.

Download

To download this report or the appendices, which provide in-depth information on all of the systematic reviews and primary studies that were analysed as part of this systematic review, please visit: https://www.eif.org.uk/report/adolescent-mental-health-a-systematic-review-on-the-effectiveness-of-school-based-interventions

What works?

Universal interventions

We identified five main approaches to supporting young people's mental health and wellbeing, including social and emotional learning, positive psychology interventions, mindfulness-based interventions, positive youth development interventions and mental health literacy interventions. The strength of the evidence varies across these approaches with findings most consistent for social and emotional learning interventions.

Social and emotional learning interventions (SEL)

SEL-based interventions are curriculum-based and whole-school programmes with an explicit focus on the development of pupils' social and emotional skills. The majority of SEL interventions target one or more of the five core skills identified by the Collaborative for Academic, Social and Emotional Learning (CASEL). These five skills include:

- *self-management* – regulating one's emotions; managing stress; self-control; self-motivation; setting and achieving goals
- *relationship skills* – building relationships with diverse individuals and groups; communicating clearly; working cooperatively; resolving conflicts; seeking help
- *responsible decision-making* – considering the wellbeing of self and others; recognising one's responsibility to behave ethically; basing decisions on safety, social and ethical considerations; evaluating realistic consequences of various actions; making constructive, safe choices for self, relationship and school
- *self-awareness* – labelling one's feelings; relating feelings and thoughts to behaviour; accurate self-assessment of strengths and challenges; self-efficacy; optimism
- *social awareness* – perspective taking; empathy; respecting diversity; understanding social and ethical norms of behaviour; recognising family, school and community supports.

Most interventions are based on social learning theory (Bandura & McClelland, 1977) and cognitive behavioural model (Beck, 1979). Classroom-based SEL interventions in general consist of between 10 and 21 sessions delivered over a school year, and lessons tend to last between 45 and 90 minutes.

A meta-analysis which examined the impact of 32 secondary school SEL interventions reported **significant improvements across all five SEL competencies** (van de Sande et al., 2019). Effect sizes were largest for social awareness (medium E.S.=0.59), followed by self-awareness (small-to-medium E.S.=0.42), self-management (small-to-medium E.S.=0.39), decision-making (small-to-medium E.S.=0.34) and relationship skills (small E.S.=0.24). **SEL interventions were also shown to have a significant small effect on depression (E.S.=0.31), anxiety (E.S.=0.27), aggression (E.S.=0.33) and a small-to-medium effect on substance use (E.S.=0.39).**

Consistent with the findings from this meta-analysis, other systematic reviews reported that SEL interventions improve young people's social-emotional skills, as well as psychological wellbeing (depression, anxiety), behaviour and academic performance (Chis & Rusu, 2019; Cilar et al., 2020; Kuosmanen et al., 2019). Another meta-analysis, of moderate quality, examined the impact of middle school interventions designed to support young people's social skills, reduce aggressive behaviour and improve academic achievement (Grant, 2013). Results indicated a very small but significant intervention effect (d=.18). This estimate is less reliable, however, as effects on social skills, behaviour and academic achievement were all combined into an aggregate measure of effect.

The evidence from the primary studies that we identified mirrors key findings from the systematic reviews with the majority of studies reporting positive findings including improved emotion or self-regulation (Coelho & Sousa, 2017; Knight et al., 2019), improved social awareness (Coelho et al., 2017; Coelho & Sousa, 2017), increased comfort with classmates or reduced social isolation (Allen et al., 2020; Coelho et al., 2017), improved prosocial behaviour (Muratori et al., 2020), improved empathy (Knight et al., 2019) and improved resilience (Knight et al., 2019).

There is consistent evidence from across the primary studies that SEL interventions also improve psychological wellbeing with evidence of reduced depressive symptoms (Allen et al., 2020; Pannebakker et al., 2019), anxiety (Coelho et al., 2017) or overall internalising symptoms (Muratori et al., 2020). One evaluation found effects on depression at four months follow-up which had not been detectable post-intervention (Allen et al., 2020).

There is emerging evidence from the primary studies that SEL programmes can have a positive impact on behaviour. Three studies, including one weak evaluation, reported positive impact on behavioural outcomes including prosocial behaviour (Muratori et al., 2020), problematic behaviour (Pannebakker et al., 2019), and cyberbullying victimisation and perpetration (Schoeps et al., 2018). There is very limited evidence from the primary studies on impact on academic outcomes with only one SEL study reporting impact at follow-up (Allen et al., 2020).

There is limited evidence from recent primary studies regarding the long-term impact of SEL interventions on young people's mental health and wellbeing. The number of studies that report 3–20 months follow-up effects is small, and findings are inconsistent; three of the five studies that report on long-term effects are of weak quality, the other two are of moderate quality. Both moderate studies found follow-up effects that were not significant post-intervention (Allen et al., 2020; Pannebakker et al., 2019). One weak-quality study reported effects were maintained at seven months follow-up (Coelho & Sousa, 2017); the other two studies reported mixed results (Carissoli & Villani, 2019; Schoeps et al., 2018).

Overall, the results from moderate and high-quality studies highlight the positive impact of SEL intervention in the development of young people's social and emotional skills and in the reduction of symptoms of depression and anxiety in the short term. Further research is required to understand the relationship between social and emotional skills and broader mental health and behavioural outcomes including depression and anxiety symptoms, in particular at long-term follow-up (Domitrovich et al., 2017; Durlak et al., 2011; van de Sande et al., 2019). A meta-analysis of primary and secondary school-based SEL interventions found that an increase in social and emotional skills at post-intervention predicted the positive effect found across emotional distress, behaviour problems and academic performance at long-term follow-up, ranging from 6 months to 18 years post-intervention (Taylor et al., 2017). Further insight into this relationship for adolescent interventions could help to ensure interventions target the appropriate skills with sufficient intensity to achieve long-term impact across mental health and wellbeing outcomes. Consistently measuring follow-up effects and monitoring change across all wellbeing domains is crucial to strengthen our understanding of which programmes can achieve sustainable effects.

» *See intervention spotlight: The Dutch Skills for Life Programme (S4L)*

Positive psychology interventions

Positive psychology interventions (PPIs) are psychological interventions that are aimed at strengthening positive emotions, thoughts and behaviours through activities that can be easily implemented into daily routines (Schotanus-Dijkstra et al., 2015). Key practices include increasing positive emotions, building character strengths and promoting optimal experiences.

Intervention spotlight

The Dutch Skills for Life Programme (S4L)

Pannebakker et al., 2019

What is the programme?

The Skills for Life (S4L) programme is a universal programme that adopts a social and emotional learning approach to supporting young people's mental health and wellbeing. The S4L programme is derived from rational emotive behavioural therapy (REBT) and social learning theory, and consists of 26 modules taught over two academic years. The first four lessons of the programme are designed to familiarise students with the programme's underlying principles, including raising students' awareness of their own thoughts, feelings and behaviour; the option of alternative lines of thoughts; and correcting faulty, irrational reasoning. The lessons also address general skills such as interpersonal problem-solving skills, emotion regulation skills and critical thinking. The remainder of the lessons in the first year focus on their ability to deal with specific problem situations applied to six themes: substance abuse, gambling, conflicts, gossip, bullying and sexuality. Each session ends with a 'behavioural commitment for the week'. During the second year of the programme, the lessons address three themes: dealing with emotional problems and suicidal tendencies; dealing with aggression; and presenting yourself.

How is it delivered?

The programme is delivered by teachers who receive three days of training, including general and curriculum-specific pedagogic instructions and self-reflection assignments. Teachers use an instruction manual and students received a workbook. The S4L curriculum comprises 17 weekly classes of one hour in the first year and nine weekly classes during the second year. Throughout all lessons, a combination of methods are employed, including information transfer, instruction, discussion, modelling, behavioural rehearsal, feedback, role-plays, video presentations, social reinforcement and extended practice.

Programme outcomes: Improvements in mental health

The programme has been evaluated in the Netherlands. A randomised controlled trial with a sample of 1,505 students from 26 schools found significant long-term (20-month follow-up) improvements in students' self-efficacy, depressive symptoms and teacher-reported problem behaviour. Importantly, the programme was shown to be effective in improving self-efficacy among lower educational students. No impact was detected among higher educational students.[1] Teacher reported problem behaviour and depressive symptoms also significantly decreased between baseline and 20-month follow-up among lower educational students, compared to corresponding control students, but not among the higher educational students.

Shows promise: Positive long-term effects

The S4L programme shows promise for improving mental health, self-efficacy and problem behaviour in the long term (20 months). While the vast majority of SEL interventions have demonstrated impact in the short term, the results from this study add to the emerging literature on the long-term impact of social and emotional skills-based interventions on young people's mental health and wellbeing.

Shows promise: Particularly effective for at-risk students

Importantly, these long-term effects appear to be stronger among students with lower educational levels; a group that is more at risk of developing mental health and behavioural difficulties. S4L, delivered as a universal programme, therefore may be an effective way to improve outcomes for all young people, in particular those at greater risk of poor outcomes.

1 Lower educational students: Students following an educational curriculum for vocational training. Higher educational students: Students following an educational curriculum designed for university preparation

We identified one meta-analysis which examined the impact of a relatively small number of positive psychology interventions (N=9) (Tejada-Gallardo et al., 2020). Results from this study indicated these interventions had a **small significant effect on subjective wellbeing**, including satisfaction with life positive affect (E.S.=0.24) and a small but non-significant effect on **students' psychological wellbeing**, including self-efficacy, positive relationships and purpose in life (E.S.=.31). Follow-up results did not show interventions had any significant effect on subjective or psychological wellbeing. (Note results presented here are excluding low-quality studies).

The meta-analysis also synthesised the effects interventions had on depression and anxiety. The overall effect on depression symptoms at post-intervention was small (E.S.=0.28). The effect on anxiety on the other hand was non-significant. At follow-up, the effect on depression was maintained, and became significant for anxiety symptoms (E.S.=0.21). These findings are in line with a narrative synthesis which reported that positive psychology interventions led to increased happiness and a reduction in depressive symptoms among youth (Cilar et al., 2020).

We identified three primary studies evaluating the impact of positive psychology interventions. Two of these demonstrated **positive effects on subjective wellbeing**, namely life satisfaction (Freire et al., 2018; Lombas et al., 2019) and self-esteem (Freire et al., 2018). The third was a weak evaluation and found no effects on subjective or psychosocial wellbeing (Truskauskaitė-Kunevičienė et al., 2020). None of these studies reported on psychological wellbeing or behavioural outcomes.

Collectively, these results provide promising but limited evidence that positive psychology interventions improve subjective wellbeing including life satisfaction in the short term, and can reduce depressive symptoms and anxiety in the long term. It is argued that these interventions might work especially well for students at risk of developing mental health problems given their potential to reduce depression and anxiety symptoms (Cilar et al., 2020). Additional research examining both short- and long-term impact among at-risk adolescents is needed to test this hypothesis and better understand how to maximise the potential of positive psychology interventions to improve outcomes for adolescents.

Meditation or mindfulness-based interventions

The implementation of mindfulness-based interventions in schools has become increasingly popular in the last few years and accompanying research on its efficacy is growing. Mindfulness is defined as the psychological capacity to stay willingly present with one's experiences with a non-judging or accepting attitude (Kabat-Zinn, 2005). These interventions usually combine didactic and experiential learning through the provision of lessons about mindfulness as well as elements of practising mindfulness. Practical activities can involve formalised body scan meditations or informal mindful activities (conscious eating, walking or listening) (McKeering & Hwang, 2019). As part of this approach, we also examined the impact of meditation and yoga interventions.

We identified a strong narrative review which reported on 11 studies examining the effectiveness of mindfulness-based interventions for young adolescents (McKeering & Hwang, 2019). Some studies reported positive findings, including a reduction in suicidal ideation and affective disturbance, and increases in self-reported optimism and positive affect. Several studies, however, identified no impact and one study reported adverse effects with higher anxiety levels among boys after participating in the intervention (Johnson et al., 2016, in McKeering & Hwang, 2019).

The same pattern of mixed evidence is echoed by the latest findings we identified through the search of primary studies. Intervention approaches varied significantly, with some focusing on mindfulness practice exclusively (Johnson et al., 2017; Johnson & Wade, 2019),

while others included yoga practice (Saxena et al., 2020), meditation techniques (Duthely et al., 2017; Kang et al., 2018) and positive psychology (Lombas et al., 2019). Across the 11 studies, there is limited evidence on most outcomes, and where impact was found, often methodological concerns were identified.

Regarding impact on **psychosocial wellbeing**, one study reported improvements in resilience (Volanen et al., 2020); however, the remaining five studies found either no effects, or effects only on subscales of the measurement tools (Lam & Seiden, 2020; Lombas et al., 2019; Takahashi et al., 2020).

Two out of three studies, one of which was of weak quality, reported a positive impact on **subjective wellbeing**. Findings relate to improved life satisfaction and emotional wellbeing (Kang et al., 2018; Lombas et al., 2019).

Psychological wellbeing including impact on symptoms of depression, stress and rumination was measured across six studies. One study reported an impact on stress (Lombas et al., 2019). None of the studies reported an impact on depression or anxiety symptoms.

In terms of behaviour, three studies measured behaviour outcomes with only one reporting a reduction in aggressive behaviour (Lombas et al., 2019).

There is some evidence to suggest **a positive impact on cognitive skills** with two studies reporting improvements in young people's inattention (Saxena et al., 2020; Takahashi et al., 2020) and one study reporting improvements in academic motivation (Lombas et al., 2019). These findings are in line with previous reviews which have reported the positive impact of mindfulness training on increasing children and young people's cognitive capacity of attending and learning (Zenner et al., 2014).

Although there is some evidence that mindfulness-based interventions can enhance young people's outcomes, there is just as much evidence of such interventions having no impact. The mindfulness intervention .b (dot-b), which has been evaluated several times has demonstrated impact on selected outcomes across rigorous trials (as our Guidebook entry for the programme reflects[3]), while other studies (Johnson et al., 2017) found no significant intervention effects.

It is important to note that there is considerable heterogeneity both in terms of the studies (measures, students, quality) and the interventions themselves (dosage, programme facilitator). Furthermore, there is limited information on quality of implementation and how well a programme was accepted in a particular school context which we know can impact on programme outcomes. In their review of mindfulness-based interventions, McKeering and Hwang (2019) suggest that student motivation was an issue in some studies and appears to be a key ingredient for success. Further research, using more robust research methods with long follow-up measures is required. As part of this, implementation research is necessary to understand programme acceptability and outcomes. In addition, more research is needed to identify the optimal participant age, programme content, duration and facilitator to effectively deliver mindfulness to adolescents.

Positive youth development interventions

Positive youth development (PYD) interventions cover an array of approaches, including personal mentoring, engaging youth in sports, recreational activities and youth leadership programmes. While methods differ, these programmes share similar aims of increasing self-esteem, sense of purpose, decision-making, leadership skills and positive interactions with others.

3 See https://guidebook.eif.org.uk/programme/b

One weak narrative synthesis examined the impact of positive youth development interventions which were categorised as curriculum-based approaches, leadership development and student-based mentorship programmes (Curran & Wexler, 2017). Results from this review which included both qualitative and quantitative studies suggests that these types of interventions can have an impact in enhancing a range of social and emotional skills, including communication skills, critical thinking, leadership, self-esteem and broader feelings of school-connectedness. The evidence to date, however, is very limited.

In our search for recently published primary studies, we identified four evaluations of universal PYD programmes, all of which were of moderate or strong quality. One intervention used multi-modal psychoeducation and had no effect on social acceptance or aggressive behaviour and had an adverse effect on self-reported wellbeing (Allara et al., 2019). Two interventions combined positive youth development with physical activities (Åvitsland et al., 2020; Moore et al., 2019). There is limited evidence from these studies with only one intervention, a martial arts programme, reporting improvements in young people's psychosocial wellbeing, namely resilience and self-efficacy (Moore et al., 2019). Another whole school intervention reported no impact on wellbeing outcomes (Larsen et al., 2019).

Overall, these results indicate that there is currently very limited evidence on the impact of positive youth development intervention on young people's mental health and wellbeing.

Mental health literacy

The construct of mental health literacy, arising from health literacy, has evolved over the years. Originally it was conceptualised as knowledge and beliefs about mental disorders which aid recognition, prevention or management of symptoms of poor mental health. More recently, mental health literacy has been defined as understanding how to obtain and maintain positive mental health; understanding mental disorders and their treatments; decreasing stigma related to mental disorders and enhancing help-seeking efficacy (knowing when and where to seek help and developing competencies designed to improve one's mental health care and self-management capabilities (Kutcher et al., 2016). It is argued that poor mental health literacy can result in delayed help seeking, which can in turn have a negative impact on prognosis and recovery (Jorm, 2012). Mental health awareness on the other hand has been shown to increase the likelihood of young people feeling equipped to seek support for mental health problems (Rickwood et al., 2007).

Mental health literacy interventions usually use psychoeducation as a means to impart information about mental health and available support for young people. Interventions are commonly delivered over short time frames (1–3) sessions (Patafio et al., 2021).

We identified two narrative reviews of mental health literacy promotion programmes, both of which were of moderate quality (Patafio et al., 2021; Seedaket et al., 2020). In addition, through our search of primary studies published between 2017 and 2020, we identified 11 studies, the majority of which received a strong/moderate quality assessment rating (N=6).

In examining the impact of these interventions on young people's mental health literacy, outcomes generally include knowledge, attitudes or help-seeking behaviour. Results are **most consistent for improvements in mental health knowledge**.

In their review of school-based mental health literacy interventions, Patafio and colleagues (2021) reported that 86% (of 92 studies) demonstrated positive impact on mental health knowledge. Regarding impact on attitudes and stigma, 22% (of 98 studies) which measured attitudes showed mixed results and 14% found null or negative effects. Only seven studies reported on help-seeking behaviours, two of which showed positive effects.

The results from the primary studies we identified echo these findings. Evaluations suggest that mental health literacy inter¬ven¬tions most consistently improved students' awareness and knowledge of mental health (Campos et al., 2018; Howard et al., 2018; Swartz et al., 2017; Townsend et al., 2019; Wahl et al., 2019), as well as their comfort in talking about mental health (including suicidality) (Hart et al., 2018, 2020), self-reported ability to recognise signs of mental health crisis (Hart et al., 2018, 2020) and students' ability to administer mental health 'first-aid' (Campos et al., 2018).

Findings in relation to attitudes and stigma are more mixed with several studies reporting short-term improvements (Andrés-Rodríguez et al., 2017; DeLuca et al., 2020; Hart et al., 2018, 2020) but, equally, other studies found no significant improvement in stigma (Ahmad et al., 2020; Howard et al., 2018; Link et al., 2020; Swartz et al., 2017). Only three of the 11 studies (Howard et al., 2018; Link et al., 2020; Lubman et al., 2020) reported some impact in relation to help-seeking intentions.

Collectively, these results suggest that mental health literacy interventions are not sufficient in supporting behavioural change. Further research is required to understand what additional supports are needed to enhance help-seeking behaviour, in particular for those at heightened risk of developing mental health problems. We did not identify any targeted selective or targeted indicated mental health literacy interventions. Given selective and indicated samples are likely to have symptoms of depression and anxiety, there is a need for research examining the potential of mental health literacy for at-risk young people. Incorporating longer-term follow-up periods would be beneficial as the timeframe needs to be appropriate for participants to experience an event or outcome of interest. In addition, research is required to examine the types of mental health literacy messages required for different groups of young people depending on need and how these messages should be delivered – for instance using social media or online resources.

Other approaches

We identified two additional studies on interventions which were quite dissimilar to the approaches discussed above in terms of theoretical underpinning and content. One study was of weak quality providing inconclusive evidence of the programme's ('Emotional Freedoms Technique') impact on mental health and wellbeing outcomes (Stapleton et al., 2018) Another study which was a high-quality study had particularly noteworthy findings (Umaña-Taylor, Douglass, et al., 2018; Umaña-Taylor, Kornienko, et al., 2018). This study examined the impact of the universal psychoeducational intervention the 'Identity Project', which aims to increase student's psychosocial wellbeing by engaging them in ethnic–racial identity exploration. The programme is designed to be relevant for all youth including youth from minority and majority ethnic backgrounds. It is based on the notion that allowing students to explore their own ethnic–racial identity will provide a clearer sense of inner identity, of who they are and who they can become. Results from a randomised controlled trial in the US revealed significant improvements in young people's self-esteem, ethnic–racial identity, depressive symptoms and academic achievement in Maths, English, Science and Social Studies.

›› *See intervention spotlight: The Identity Project: Promoting Adolescents' Ethnic–Racial Identity Exploration and Resolution)*

Targeted selective interventions

Mental health difficulties are more common among certain groups of young people including, for example, those living in the most deprived neighbourhoods or those having experienced certain types of adversity in their lives. It is essential that the mental health needs of these at-risk groups of young people are appropriately supported. Targeted selective interventions – that is, interventions adapted to the needs and realities of groups

Intervention spotlight

The Identity Project: Promoting Adolescents' Ethnic–Racial Identity Exploration and Resolution

Umaña-Taylor, Douglass, Updegraff, & Marsiglia, 2018 &
Umaña-Taylor, Kornienko, Bayless & Updegraff, 2018

What is the programme?

The Identity Project is a universal programme for secondary-school students that aims to increase psychosocial wellbeing. The programme is based on the notion that allowing students to explore their own ethnic–racial identity and understand how this part of their identity forms part of their sense of self, will provide a clearer sense of inner identity of who they are and who they can become. In the programme, two processes are key to ethnic–racial identity: 1) exploration of their ethnicity and race and 2) their sense of resolution about the personal meaning(s) associated with this aspect of their identity. The theory underpinning the programme suggests greater exploration and resolution (that is, increased identity cohesion) is essential for developing a secure sense of self and identity cohesion that promotes positive psychosocial functioning. Each session covers a new topic, helping students to build knowledge as they explore different aspects of their ethnic–racial identity each week and form their own ethnic–racial identity cohesion. Topics covered include: unpacking identity, within- and between-group differences, stories of the past, family history, symbols and traditions, ethnic–racial identity as a journey, and storyboarding identity journeys. The programme adopts a psychoeducational approach to increase student's understanding and awareness of their own ethnic–racial heritage(s), historical discrimination and racism in history, group differences, and identifying with an ethnic group. The content aims to provide students with the capability and opportunity to explore and discuss their own backgrounds. Importantly, activities and sessions are designed to be relevant regardless of the ethnic composition of a classroom. For instance, examples in the lessons are generated by student participants' experiences and backgrounds rather than predetermined in the curriculum.

How is it delivered?

The programme is an eight-week curriculum with one session (55 minutes) per week. Sessions are delivered to classes as a group as part of their regular school routine. Two researchers lead the intervention programme, delivering each of the sessions face to face.

Programme outcomes: Improvements in mental health and academic outcomes

A randomised controlled trial of the Identity Project was carried out in the US with a sample of 218 pupils from eight public high schools (mean age 15 years). At one-year follow-up, students reported significant improvements in global identity cohesion, depressive symptoms, self-esteem and academic grades (English, Maths, Science and Social Studies). It is important to note these improvements were directly attributed to increases in students' identity exploration and resolution, demonstrating the intervention worked as expected.

Shows promise: Can be implemented among students from all ethnic backgrounds, with potentially greater effects among students from minority ethnic backgrounds

The Identity Project is designed to be delivered universally, rather than targeting young people identified as being at higher risk of poor mental health outcomes. Furthermore, it is designed for young people from both ethnic–racial minority and majority backgrounds. Evidence from the studies show the programme was effective at improving racial identity exploration and racial identity resolution among all students, but that students from minority ethnic backgrounds (in this case Black or African American, Latino, Asian American, American Indian or Native American or 'other') had higher scores than their White peers. As a result of increased exploration and resolution, significant improvements in students' depressive symptoms, self-esteem and grades were found one year following the intervention.

Shows promise: As a tool to address racial and health inequalities

There are recognised racial and ethnic inequalities in young people's mental health outcomes in the UK with students from minority ethnic and marginalised backgrounds fairing worse than their peers. Universal mental health promotion programmes that are particularly beneficial for students from marginalised ethnicities provide tools to address this inequality. For the Identity Project specifically, the programme further benefits from adopting a universal approach by encouraging all students from all ethnic–racial backgrounds to increase their awareness of their own ethnic identity, which may help to raise awareness of wider sociocultural issues of diversity, equality and inclusion.

of young people identified at particular risk of developing mental health difficulties – have the potential to enhance young people's mental health and address problems before they become engrained and difficult to reverse. To date, however, targeted selective mental health interventions are under-researched. We did not identify any systematic reviews examining the effectiveness of mental health promotion interventions designed for at-risk groups of young people. Two reviews that focused on universal provision identified a limited number of targeted selective interventions and pointed to the methodological limitations of these studies, resulting in no meaningful conclusions being drawn from these studies (Chis & Rusu, 2019; Curran & Wexler, 2017).

Most recent evidence from the primary study search does not show that this research gap has been filled. Indeed, none of the interventions we identified were designed for specific sub-groups of the population; however, four universal interventions that were designed for the general population were trialled with diverse groups or in socioeconomically deprived areas. A fifth intervention was trialled with a group of students at risk of school failure or related poor outcomes. All five evaluations demonstrated positive effects on at least one outcome.

A universal SEL intervention, MindOut (see intervention spotlight), was trialled with disadvantaged schools in Ireland (that is, 70% of the students are classified as educationally disadvantaged by the Irish Department of Education and Skills) and showed promising effects on psychosocial wellbeing (emotional regulation, coping skills, social support coping) and symptoms of depression at post-intervention (Dowling et al., 2019). As part of their research, Dowling and colleagues (2020) examined the impact of implementation quality on programme outcomes. Results revealed that some positive effects of the programme were only observed where the programme was implemented with high quality, as measured by dosage, adherence, quality of delivery and participant responsiveness. The findings from this study are important given the limited number of studies which examine the degree to which implementation affects programme outcomes and demonstrates the importance of ensuring strategies are in place to support high-quality implementation in order for positive outcomes to be achieved.

Three mindfulness interventions that were designed as universal interventions were trialled at schools in deprived areas and with particularly diverse populations in the US. One intervention that was trialled in a high-poverty catchment area had promising effects on academic outcomes (Frank et al., 2017). Another study reported improvements in young people's gratitude, life satisfaction and school satisfaction (Duthely et al., 2017). The third mindfulness intervention delivered to an ethnically diverse sample reported improvements in resilience but had no effect on behavioural problems and school grades (Felver et al., 2019).

The Personal Leadership Programme (PLP) (Roberts et al., 2019) was trialled with a select sample involving young people in Australia who were at risk of school failure or related poor outcomes. The study reported improvements in positive emotions and student engagement. As the study is of weak quality, we can only draw limited conclusions on this basis.

These studies point to the potential of mental health promotion interventions, such as SEL programmes, when delivered to groups of students identified at heightened risk of developing mental health difficulties including socioeconomically deprived young people, minority ethnic students, or students at-risk of poor academic outcomes. It is, however, important to note that none of the interventions were specifically designed for an underserved or at-risk group. Additional research is needed to better understand whether specific adaptations would make it easier for underserved population groups to engage with the intervention content, and ultimately experience greater improvements.

›› *See intervention spotlight: The MindOut Programme*

Intervention spotlight

The MindOut Programme

Dowling et al., 2019, 2020

What is the programme?

The MindOut Programme is a universal[1] social emotional learning (SEL) programme designed for older adolescents (15–18 years) in secondary school. The programme aims to promote young people's social and emotional wellbeing and is implemented in Ireland through the Social, Personal and Health Education (SPHE) curriculum. The programme is based on CASEL's[2] five core competencies for social and emotional learning: self-awareness, self-management, social awareness, relationship management and responsible decision-making. Students engage in a number of skill-building activities, such as identifying and managing emotions, coping with challenges, overcoming negative thinking, communication, and empathy and relationship skills. The programme also promotes a whole-school approach by providing staff with a menu of strategies for promoting social and emotional development at a wider-school level. For example, practice-at-home activities, teacher reflection, whole-school activities, and tips for staff for engaging students, parents and the community.

How is it delivered?

The MindOut programme consists of 13 weekly sessions which are intended to be delivered by trained teachers. A teaching manual is provided, with structured activities and resource materials. Interactive teaching strategies are employed throughout the programme, including collaborative learning, structured games, scenarios and videos.

Programme outcomes: Improvements in social and emotional skills

A cluster randomised controlled trial (RCT) was carried out with a sample of 675 students from 32 disadvantaged schools in Ireland. Results from this study revealed significant improvements in students' social and emotional skills at post-intervention, including: reduced suppressing of emotions, reduced avoidance coping, increased social support coping, and a reduction in self-reported stress and symptoms of depression. Importantly, high levels of implementation quality — a composite score derived from student and teacher reports of dosage, adherence, quality of delivery and participant responsiveness — were associated with significantly lower levels of avoidance coping, reduced expressive suppression, higher levels of social support coping, lower levels of stress and depression, and more positive attitudes towards school compared to low levels of implementation quality. Additionally, at 12-month follow-up, compared to control schools, high-implementation schools demonstrated significantly lower avoidance coping.

Shows promise: Positive effects on disadvantaged adolescents

The MindOut programme shows promise for improving mental health and wellbeing outcomes among disadvantaged adolescents and older adolescents. The results from this study suggest that social and emotional learning interventions can be successfully embedded within a school curriculum.

Shows promise: Importance of implementation quality

This study highlights the importance of high-quality implementation in producing programme outcomes, and underscores the need to (i) evaluate programme implementation as a means to understanding programme outcomes and (ii) support teachers in the delivery of the programme with high quality.

1 The programme appears under our targeted selective section as it was implemented and evaluated with disadvantaged schools in Ireland, that is, 70% of students in these schools are classified as educationally disadvantaged by the Irish Department of Education and Skills.

2 Collaborative for Academic, Social, and Emotional Learning.

Targeted indicated interventions

Most mental health promotion and wellbeing interventions are universal. Hence, it is no surprise that we did not identify any reviews which reported on the effectiveness of mental health promotion interventions designed for adolescents with elevated baseline depressive or anxiety symptoms.

Nevertheless, we have identified two targeted indicated promotion interventions which were designed for young people with elevated but subclinical symptoms of poor mental health. Both evaluations were of high quality. The New Zealand positive youth development intervention Kia Piki te Hauora: Uplifting our Health and Wellbeing reported mixed results (Tokolahi et al., 2018). This intervention had no effect on subjective wellbeing or symptoms of poor mental health; however, it did marginally improve child-rated academic participation.

A high-quality study evaluating the Learning to Breathe mindfulness intervention reported improved outcomes among minority ethnic youth with elevated depressive symptoms (including young people who identify as Asian American – 42.8% of the sample; Latino – 42.8% of the sample; young people born outside the US – 17.9% of the sample). Results revealed improved psychosocial wellbeing (emotional regulation), reduced stress and externalising behaviour. Effects were medium and maintained at 3 months follow-up (Fung et al., 2019). Evaluations of an adapted version of Learning to Breathe (6 sessions as opposed to 12) implemented as a universal intervention have revealed mixed findings with improvements reported in young people's internalising symptoms and executive functions (Lam & Seiden, 2020), but no improvements in stress or negative thinking (Lam & Seiden, 2020). A further evaluation with an ethnically diverse at-risk student sample revealed improvements in psychosocial resilience but no change in behavioural problems or academic outcomes (Felver et al., 2019).

Limited evidence of the effectiveness of targeted indicated mental health promotion interventions suggests that cognitive behavioural therapy interventions, as discussed in results chapter 2, may be more suitable than mental health promotion programmes to prevent poor mental health in young people with elevated symptoms of depression or anxiety.

Virtual and digital delivery of mental health promotion interventions

A number of narrative reviews reported on the effectiveness of online mental health promotion interventions (Cilar et al., 2020; Kuosmanen et al., 2019). Results from these reviews indicate there is some evidence that digital SEL interventions (such as SPARX and MoodGYM) can have a positive impact on psychological wellbeing (depression and anxiety symptoms) (Kuosmanen et al., 2019); however, positive psychology interventions delivered through digital means have shown less positive results in improving mental health and reducing risk-taking behaviours (Baños et al., 2017).

In our search for recently published primary studies, we identified one SEL programme which incorporates digital elements. The universally delivered EmotivaMente programme reported significant short- and long-term (3 months) effects on psychosocial wellbeing (Carissoli & Villani, 2019).

Our 2020 evidence review *Covid-19 and early intervention: Evidence, challenges and risks relating to virtual and digital delivery*[4] showed that digital interventions do not usually outperform face-to-face provision, however, under certain circumstances, comparable effect sizes can be achieved. This insight, in combination with a potentially very large reach at a low unit cost, makes virtual provision an important area of research.

4 See https://www.eif.org.uk/report/covid-19-and-early-intervention-evidence-challenges-and-risks-relating-to-virtual-and-digital-delivery

For whom?

There is, in general a lack of evidence across the systematic reviews and primary studies in relation to with whom these interventions are most effective. Some differences according to gender and ethnicity were identified in our primary studies, although these findings need to be interpreted with caution given the limited number of studies that have reported on this.

Gender

Some primary studies of mental health promotion interventions have reported stronger effects among girls than boys (Coelho et al., 2017; Freire et al., 2018; Volanen et al., 2020). Researchers have proposed a number of explanations for these findings including girls presenting with higher baseline scores of mental health problems. Where young people have higher baseline scores, there is potentially more scope for the intervention to have a detectable impact. Other researchers contend that boys and girls have different developmental timing and characteristics and may come to a programme at different stages of development and readiness and, therefore, respond differently to the intervention (Layous & Lyubomirsky, 2014). Currently, there are too few studies which have examined gender difference to be able to draw strong conclusions. Future research should consider the role of gender to better understand the mechanisms underlying the effectiveness of interventions.

Ethnicity

Several of the primary studies we identified were carried out with ethnically diverse samples (for instance Åvitsland et al., 2020; Duthely et al., 2017; Felver et al., 2019; Fung et al., 2019); however, none of the interventions were designed specifically for minority ethnic groups. It is unclear from these studies whether ethnicity moderated programme outcomes. All interventions that were evaluated with diverse samples had positive effects – the researchers, however, did not analyse whether the effects were the same for all ethnic groups, whether effect sizes varied by ethnic group, or whether effects were only significant for some but not for others. To better understand whether certain approaches (such as SEL, mindfulness) perform better for particular ethnic groups, researchers should examine and report on ethnicity as part of their moderator analysis.

Risk status

Across approaches there is some evidence to suggest that universal mental health promotion interventions are particularly beneficial for students at risk of poorer mental health outcomes. Three primary studies reported that intervention effects were considerably larger among at-risk students than the general student population (Åvitsland et al., 2020; Coelho & Sousa, 2017; Takahashi et al., 2020). These findings suggest that universal mental health promotion interventions can result in significant improvements in the mental health and wellbeing of all pupils, in particular those most at risk of developing emotional and behavioural difficulties. This is hugely encouraging given the universal nature of these interventions in that students do not need to be singled out for an intervention.

Under what circumstances?

Implementation quality

A number of studies observed positive effects, including long-term effects, only when the intervention was delivered with high fidelity (see for example Dowling et al., 2019; Volanen et al., 2020). One study in Ireland which examined the impact of a SEL intervention in disadvantaged schools in Ireland reported positive effects were only observed when the programme was implemented with high quality (measured according to dosage, adherence, quality of delivery and participant responsiveness). Programme effects included reduced suppression of emotions, reduced avoidance coping, increased social support, reduced stress and depressive symptoms (Dowling & Barry, 2020).

These findings are consistent with a number of reviews which have demonstrated the relationship between implementation quality and programme outcomes (DuBois et al., 2002; Durlak et al., 2011; Durlak & DuPre, 2008) and demonstrate the importance of measuring implementation as part of evaluation studies. Furthermore, the findings highlight the importance of supporting high-quality implementation of programmes. As argued by Dowling and colleagues (2020), despite a programme being theoretically sound, this does not guarantee positive outcomes, the programme must be implemented with fidelity and high quality. In order to do this, schools need to be supported in the delivery of evidence-based programmes with quality through the provision of teacher training and ongoing implementation support.

Structured curriculum

Evidence from systematic reviews and primary studies suggests that SEL interventions can have a small–medium effect in enhancing young people's social and emotional skills and in reducing depression and anxiety symptoms (Allen et al., 2020; Cilar et al., 2020; Coelho et al., 2017; Dowling et al., 2019; Kuosmanen et al., 2019; Pannebakker et al., 2019). A common characteristic across these effective interventions is their structured approach to explicitly teaching social and emotional skills. Pupils are actively engaged in the learning and practice of these skills through a sequenced set of lessons. It is likely that the explicit focus on skill development is central to enhancement of young people's mental health and wellbeing. In their meta-analysis of SEL interventions in both primary and secondary schools, Durlak and colleagues (2011) identified four core practices (**SAFE** practices) which moderated programme outcomes including **S**equenced activities, **A**ctive forms of learning, **F**ocused on developing one or more skills, **E**xplicit about targeting social and emotional skills. It is important that these practices are incorporated into the development of future SEL interventions. The application of these practices to other approaches, such as positive youth development interventions, is worthy of investigation.

Programme facilitator

Another important finding is that class teachers can successfully implement universal mental health promotion interventions (Curran & Wexler, 2017; Kuosmanen et al., 2019; McKeering & Hwang, 2019; van de Sande et al., 2019). Programme outcomes across the various approaches were not impacted by the programme facilitator. Evidence from the primary studies reinforces this finding. The successful delivery of universal mental health promotion interventions by teachers is important in terms of embedding these interventions within routine educational practice and teachers being able to reinforce skills development through everyday interaction with pupils both within the classroom and beyond. Evidence suggests that for targeted indicated mental health interventions, however, external staff (such as psychologists) are better placed to effectively deliver these programmes to at-risk pupils (see chapter 2).

Training, support and quality

Teacher training appears to be essential to the high-quality delivery of mental health promotion interventions with the majority of studies reporting on the training and support provided to programme facilitators. High-quality training includes:

- materials such as a standardised manual and lesson plans
- a standard, replicable training format and a team of qualified trainers
- initial training on the programme's theory, design, activities and expected outcomes
- a coherent systematic approach grounded in research-based practices (Barry et al., 2019).

In the case of mindfulness-based interventions, McKeering and Hwang (2019) suggest that intervention-specific training may not be sufficient to ensure intervention success. The authors contend that extensive and ongoing practice in mindfulness is required by the facilitator in order to best support the delivery of a mindfulness-based intervention. However, this systematic review found that two of the reviewed interventions which were delivered by an external practitioner with 10 years' mindfulness experience, were ineffective. These results suggest that practitioner experience alone does not ensure efficacy. A review of qualitative data concluded that the teachers' ability to embody mindfulness, support from parents and school administrators, as well as a relaxing physical environment and students' willingness to learn are conducive to the interventions having the desired effects, while time pressure, crowded curriculum content, and students' disengagement with the programme were identified as important barriers.

Study location

One of the systematic reviews reported that the majority of the evidence in relation to mental health promotion interventions emerges from outside Europe (Kuosmanen et al., 2019). While this appears still to be the case, around 40% of the primary studies published in the past three years were conducted in Europe, with the remaining trials carried out in North America, Australia or Asia. This suggests an upward trend in research on the effectiveness of school-based interventions in Europe.

We identified one evaluation of a mental health promotion intervention recently carried out in the UK (Kelley et al., 2021). We are also aware of a number of mental health literacy and mental health promotion and trials that are currently underway, including:

- Education for Wellbeing programme: this consists of two large randomised controlled trials testing five different interventions to support young people's mental health and wellbeing:
  - AWARE – trial compares Youth Aware of Mental Health (see intervention spotlight in Suicide Prevention in part 2), the Mental Health and High School Curriculum Guide (the Guide) and usual practice (Hayes et al., 2019).
  - INSPIRE – trial compares mindfulness, relaxation, strategies for safety and wellbeing and usual practice (Hayes et al., 2019).
- MYRIAD – trial examines the efficacy of a mindfulness-based intervention to prevent depression and build resilience in young people across 76 schools in the UK (Kuyken et al., 2017).

The results from these studies will strengthen our understanding of what works in the UK context, with whom and under what circumstances.

Prevention

Interventions to prevent mental health difficulties

Overview

In this chapter, we examine evidence on the effectiveness of school-based mental health interventions that are designed to prevent or reduce mental health difficulties including depression, anxiety, stress, self-harm and suicidality. While promotion and prevention interventions overlap in terms of their goals and core components, they differ in relation to their target outcomes. Promotion interventions aim to enhance positive mental health and wellbeing outcomes. Prevention interventions on the other hand are primarily aimed at reducing or preventing symptoms of anxiety, depression and stress in young people.

Prevalence data shows that 11% of those aged 11 to 19 years in England had an emotional disorder (anxiety disorder, depressive disorder, mania or bipolar disorder) in 2017; these disorders were more common among girls than boys, and also more common among older than younger adolescents. More than one in five (22.4%) of 17–19-year-old females had an emotional disorder, while 1 in 10 (10.9%) of 11–16-year-old girls had a diagnosable emotional disorder (NHS Digital, 2018).

Depression and anxiety during adolescence are associated with decreased psychosocial functioning, poor academic performance and an increased risk of substance abuse, other mental health problems, and suicide (Birmaher et al., 1996). Because depression and anxiety symptoms rise dramatically during adolescence, it is imperative to implement programmes aimed at intervening early to prevent further escalation of these symptoms. It is argued that prevention interventions are more suited to adolescents compared to children because young people are better able to understand the concepts that are being taught due to their improved reasoning (Stice et al., 2009).

Prevention interventions focus on different populations with different risks of developing depression or anxiety. Universal prevention programmes are delivered to all young people, regardless of their level of risk. Second, selective prevention programmes target populations with risk factors which are known to be related to the onset of depression and anxiety. Third, indicated prevention programmes are designed for adolescents who have elevated symptoms of depression or anxiety, but their symptoms do not qualify for a clinical diagnosis. These interventions are often delivered in small-group or one-to-one format and are designed for pupils with mild to moderate needs.

The vast majority of prevention interventions are based on cognitive behavioural therapy (CBT). CBT supports participants to regulate emotions, identify negative thoughts and unhelpful behaviours, establish helpful patterns of thought and behaviour, and develop personal coping strategies that target solving current problems. In addition to drawing on CBT, universal interventions designed to prevent mental health difficulties often include SEL elements, where students learn social and emotional skills such as emotional identification, communication skills, emotional regulation, and so forth. Moreover, several interventions, in particular those that target stress, draw on mindfulness and controlled breathing principles. Other approaches at the indicated level include counselling and psychotherapy.

Another set of prevention interventions are designed to prevent self-harm, suicidal ideation and suicide attempts. These interventions mostly consist of: (i) psychoeducation which is designed to increase students' knowledge about suicide and help-seeking; (ii) gatekeeper training for teachers, counsellors and mental health professionals in schools to increase their knowledge and skills to identify warning signs and refer students to mental health services; and (iii) screening or motivational interviewing to increase help-seeking and reduce suicidal behaviour.

We identified a total of 12 systematic reviews that focused on school-based interventions aimed at preventing mental health difficulties in young people. Eight of these reviews examined the impact of interventions aimed at reducing symptoms of depression, anxiety or stress. Four reviews focused on preventing suicidality.

Our search of primary studies identified 22 anxiety and depression prevention intervention studies and one evaluation of a suicide prevention intervention.

Key points

Anxiety and depression prevention: what works?

- There is evidence that universal anxiety and depression prevention interventions can work to improve symptoms of depression and anxiety in the short term (with the strongest evidence for depression). From the studies that have examined long term impact, there is limited evidence that impact is sustained over time.
- There is very little research on the impact of programmes which are targeted at young people on the basis of demographic risk factors; however, studies which were identified showed promising results.
- There is good evidence that cognitive behavioural therapy (CBT) interventions, when delivered to young people with subclinical symptoms by external professionals, are effective in reducing symptoms of depression in both the short and medium term.
- There is currently insufficient evidence on the impact of interventions when delivered virtually because the quality of these studies is on the whole weak.

For whom and under what circumstances?

- There is good evidence that universal interventions can be effective when delivered by school staff. Research from multiple studies show that high-quality, robust teacher training and ongoing support is associated with programme effectiveness. This suggests the need for adequate time and support to enable teachers to become familiar with intervention concepts and materials.
- There is consistent evidence that interventions delivered to young people with emerging symptoms of poor mental health are only effective when delivered by an external professional, such as a psychologist.
- Both the duration of individual sessions and the number of sessions across universal prevention intervention have been shown to influence programme outcomes. Lower intensity universal interventions appear to have less of an impact.

Suicide prevention: what works?

- There is limited evidence on the effectiveness of school-based interventions designed to prevent suicide and self-harm. Studies of psychoeducation and gatekeeper training are, in general, of weak quality.
- The Youth Aware of Mental Health (YAM) psychoeducation intervention has produced promising results in relation to reductions in the number of suicide attempts and severe suicidal ideation in a large European trial. This programme is currently being trialled in secondary schools in England (Hayes et al., 2019). Results from this trial will determine the effectiveness of such an approach in the UK context.

Take-home messages

- Universal and targeted school-based prevention interventions can play a significant role in the reduction of depression and anxiety symptoms in young people. Universal prevention programmes can help prevent future incidences of clinical cases by teaching all students effective strategies to manage difficult situations before a crisis occurs. Targeted interventions are effective in addressing the needs of a significant proportion of students who may be falling under the clinical radar.
- As the prevalence of anxiety and depression is increasing among adolescents, there is a need to invest in effective strategies that can be implemented and sustained at scale. While the delivery of interventions for young people with emerging symptoms of poor mental health by external professionals presents a significant challenge in terms of cost and sustainability, it is essential that decisions about the types of programmes schools should invest in is guided by the evidence base. The current evidence highlights the need to invest in mental health professionals embedded within schools to deliver targeted indicated interventions for at-risk pupils.
- To maximise the return on investment in universal prevention interventions, it is essential that universal programmes are accompanied with high-quality teacher training and the provision of ongoing support to teachers to ensure high-quality implementation and sustainability.

Research recommendations

- There is a need to understand the impact of a stepped care model within schools with the provision of universal prevention interventions for all students combined with targeted individualised support for students with elevated symptoms.

- Further research is required to understand the types of additional support required to ensure the long-term impact of school-based prevention interventions. It is likely that a one-size-fits-all approach may not be the best way to maximise the long-term effect of prevention interventions and that there may be value in developing booster strategies that are matched with young people's specific needs.
- In examining the impact of universal interventions, it is currently not clear whether the improved outcomes are for a subset of students or across a larger group of students. Future research examining with whom these interventions are most effective would assist decision-making in relation to intervention approaches and the target audience. Evaluations should report whether students at risk of academic failure or school exclusion, those from lower socioeconomic backgrounds, those who speak English as an additional language, LGBTQI+ young people, minority ethnic students, or students with elevated baseline symptoms experience the same kind of impact as the general population.
- With rates of self-harm and attempted suicide in young people having increased from 5.3% in 2000 to 13.7% in 2014 among 11–16-year-olds, there is an urgent need for robust high-quality studies examining the impact of school-based suicide and self-harm prevention interventions. Future research examining whether depression and anxiety prevention intervention can reduce suicidality in the long term is also warranted.

Download
To download this report or the appendices, which provide in-depth information on all of the systematic reviews and primary studies that were analysed as part of this systematic review, please visit: https://www.eif.org.uk/report/adolescent-mental-health-a-systematic-review-on-the-effectiveness-of-school-based-interventions

Anxiety and depression prevention

Five meta-analyses and three narrative syntheses were identified as part of our review of reviews. While inclusion criteria varied slightly across the identified reviews, their common focus was examining the impact of universal or targeted interventions aimed at reducing symptoms of depression, anxiety or stress.

Half of the 22 interventions designed to prevent depression, anxiety or stress identified in our search for primary studies were delivered universally. The majority of trials took place in European countries (N=6); five interventions were trialled in the UK, five in the US, four in Australia and two trials were carried out in Asia.

The most common approach adopted by the prevention interventions we identified was cognitive behavioural therapy (CBT). This was either used as a standalone approach (N=10), in combination with digital elements (N=5), or as part of a whole-school approach (N=1). Five interventions used psychotherapy, including one intervention that used dialectical behaviour therapy (DBT). One intervention used acceptance and commitment therapy, a form of mindfulness that incorporates self-acceptance.

Quality of research

Six of the reviews we identified were meta-analyses and two were narrative syntheses (table 5). Various methodological concerns were identified across the review papers. Key findings in relation to what works have been drawn from the five strong meta-analyses and the two moderate reviews. The quality of the studies we identified through our top-up search were quite mixed, which is in line with what was reported in the systematic reviews we identified. Seven studies received a strong quality assessment rating, five studies received a moderate quality assessment rating, and 10 were of weak quality. It is difficult to draw strong conclusions from weak-quality studies, as a result our analysis focuses on studies which received a moderate or strong quality assessment rating.

TABLE 5

Quality assessment ratings of systematic reviews of interventions to prevent anxiety, depression and stress in young people

Author	Type of evidence review	Quality assessment rating
Carnevale et al., 2013	Narrative synthesis	Moderate
Feiss et al., 2019	Meta-analysis	Strong
Gee et al., 2020	Meta-analysis	Strong
O'Dea et al., 2015	Narrative synthesis	Weak
Scott, 2015	Meta-analysis	Strong
Shelemy et al., 2020	Meta-analysis	Strong
Ssegonja et al., 2019	Meta-analysis	Moderate
Van Loon et al., 2020	Meta-analysis	Strong

What works?

Universal interventions

Across the systematic reviews, findings were **very consistent in relation to preventing depression through universal interventions**. Interventions generally had a small effect on depression at post-intervention (Scott, 2016; Shelemy et al., 2020). Universal interventions also have evidence of reducing anxiety symptoms, with small effect sizes (Shelemy et al., 2020). A meta-analysis of both universal and targeted depression and anxiety prevention programmes (Feiss et al., 2019) found interventions had a moderate effect on depression and a large effect on anxiety; however, heterogeneity was very high, illustrating that true effect sizes vary across individual programmes.

Evidence of long-term effects is limited. One meta-analysis (Scott, 2016) found marginal improvements of medium-term depressive symptoms (after 7–12 months) across 18 studies, but no significant effect across five studies after more than 12 months. In line with this, another meta-analysis (Shelemy et al., 2020) found no significant effect on depression at follow-up, and a third one found no significant follow-up effects on either depressive symptoms based on 17 studies nor on anxiety symptoms, based on six studies (Feiss et al., 2019).

There is some evidence to suggest school-based interventions can have an impact on young people's stress levels. One meta-analysis reported that intervention effects on PTSD were larger than on depression or anxiety (Shelemy et al., 2020). Another meta-analysis which included 54 primary studies examining impact on stress reported interventions on average had a moderate effect (van Loon et al., 2020). However, the authors point out that heterogeneity was high, meaning the effect sizes vary significantly across the reviewed interventions. A third meta-analysis which included four primary studies on the subject found no significant effect on stress reduction but also identified high heterogeneity (Feiss et al., 2019).

Results from the four strong or moderate quality primary studies we identified are mixed (García-Escalera, 2020; Ohira et al., 2019; Schleider et al., 2019; Teesson et al., 2020). One intervention reported improvements in young people's depressive symptoms including a reduction in symptoms that would indicate a referral to a mental health professional (Schleider et al., 2019). Another intervention evaluation observed improvements in students' anxiety symptoms (Teesson et al., 2020). Two interventions which found no impact on depression or anxiety were of relatively short duration (consisting of eight or fewer lessons) (García-Escalera, 2020; Ohira et al., 2019).

A common finding across the evidence reviews and primary studies was the lack of evidence in relation to long-term follow-up. Of four studies that report follow-up findings, one high-quality study found significant effects at 3 months follow-up (García-Escalera, 2020), and another found effects at 12 and even 30 months follow-up (Teesson et al., 2020). Two low-quality studies on the other hand found no significant effects at 12 months (Garmy et al., 2019) or 18 months (Perry et al., 2017). It is possible that the application of skills and strategies to real-world practice is difficult. Some studies have suggested the use of additional maintenance strategies such as booster sessions as a way of supporting students to integrate changes in their life (Ssegonja et al., 2019). Future research should examine if booster sessions or other maintenance strategies can have an impact on long-term findings and how and when these strategies should be embedded within the school system.

Targeted selective interventions

No systematic reviews reported on the effectiveness of targeted selective interventions implemented with young people identified at-risk on the basis of broad demographic risks. This is likely because of the dearth of research in this area as indicated by the number of interventions identified through our search of primary interventions.

We identified two targeted selective interventions. The DISCOVER 'How to handle stress' one-day workshop was delivered to a diverse sample of young people in deprived areas of London. The intervention was designed to reduce stress, depression and anxiety symptoms (Brown et al., 2019). Results from this study, which received a strong quality assessment rating showed significant improvements in depressive symptoms (d=0.27), anxiety symptoms (d=0.25), quality of life (d=0.36), mental wellbeing (d=0.46) and emotional symptoms (d=-0.28).

The second intervention, Footprints, employed motivational interviewing, modular cognitive behavioural therapy (CBT) and the enhancement of protective factors, and was delivered to students at risk of poor mental health outcomes. This intervention is a good example of a multi-component programme designed to address mental health, behavioural and academic needs of at-risk young people. Students participated in small-group CBT sessions and also individual motivational interviewing sessions aimed at helping them achieve an academic or behavioural goal identified by the student. Results from a small feasibility and preliminary effectiveness study which was of weak quality revealed significant improvements in young people's emotional symptoms (d=0.41), self-efficacy (d=0.86), behaviour (d=0.41), maths grades (d=0.53) and academic motivation (d=0.82) (Terry et al., 2020). Given the particularly promising preliminary findings from this study, further testing of integrated interventions which combine evidence-based approaches to address young people's mental health, behavioural and academic needs is warranted.

Despite the advancements in school mental health, there is a **lack of established evidence on the effectiveness of targeted interventions for underserved or at-risk population groups**.

›› *See intervention spotlight: The DISCOVER 'How to handle stress' Workshop programme*

Targeted indicated interventions

At the targeted indicated level, there is evidence of the effectiveness of school-based interventions in improving depression and anxiety under certain circumstances. Systematic review findings show that these prevention interventions can have a moderate effect on anxiety symptoms (Feiss et al., 2019; Gee et al., 2020) as well as a small to moderate effect on depression (Gee et al., 2020; Scott, 2016; Ssegonja et al., 2019) in the short term.

In terms of long-term outcomes, Gee and colleagues (2020) reported reductions in depression were maintained at short-term follow (<6 months). In their review of CBT-only interventions, Ssegonja and colleagues (2019) reported a gradual decrease in effects identified between post-intervention and six months. Thereafter, intervention effectiveness increased between six and 12 months before decreasing again at 12 months follow-up. The results from these meta-analyses suggest that delivering CBT in schools to pupils at risk of developing mental health problems is a very promising approach to preventing or postponing the onset of depressive disorders for up to 12 months after receiving the intervention. Additional research comparing the long-term effects of adaptations with and without booster sessions is needed to better understand how effects can be maintained and positive results consolidated.

Intervention spotlight

The DISCOVER 'How to handle stress' Workshop programme

Brown et al., 2019

What is the programme?

The DISCOVER 'How to handle stress' Workshop is a cognitive behavioural therapy programme designed for pupils aged 16–19 years. It is a targeted selective group intervention for students who have been identified as at risk of poorer mental health and academic outcomes (minority ethnic pupils, young people from low socioeconomic background). The intervention aims to reduce stress, depression and anxiety by focusing on methods for coping with common personal and academic stresses, such as social anxiety and worry, dealing with coursework, dealing with family expectations and exam anxiety. The workshop focuses on teaching students cognitive behavioural therapy (CBT) principles and methods, including fear exposure, thought challenging, mindfulness, problem-solving, sleep hygiene and time management. Video vignettes are used to demonstrate the impact of stress on young people's thoughts and behaviours, and to illustrate other students using the techniques with success. Students use a workbook to set personal goals, which are reviewed at the telephone follow-up.

How is it delivered?

The programme is delivered by external professionals. In the case of the UK trial, two clinical psychologists and one assistant psychologist (graduate; no clinical training) co-facilitated the intervention face to face across 10 secondary schools in London. A one-day workshop is delivered to a group of up to 15 students. One week after the group workshop, students have a telephone follow-up with one of the facilitators (20–30 minutes) to discuss progress and support their new CBT skill use. Students were offered up to two additional telephone check-ins as and when needed within 12 weeks of the workshop.

Programme outcomes: Improvements in mental health outcomes, including symptoms of depression and anxiety

In a randomised controlled trial of 155 students from 10 secondary schools in the UK, the DISCOVER programme showed notable promise for overall improvements in student's mental health and wellbeing compared to students in a wait-list control. Students reported significantly fewer symptoms of depression and anxiety at three months post-intervention. Students also reported significant improvements in quality of life, mental wellbeing and emotional symptoms in the same timeframe.

Shows promise: Effective among at-risk and 'hard to reach' students

While the DISCOVER workshop was not specifically designed as a targeted selective intervention, it was trialled and delivered to a cohort of students at risk. Schools within the London boroughs of Lambeth and Southwark rank among some of the most deprived areas in the UK. In addition, the schools served a high proportion of students from Black and minority ethnic backgrounds. Among secondary school students, around 85% of pupils in Lambeth and 76% of pupils in Southwark are from Black and minority ethnic groups (ONS, 2015).

The intervention successfully recruited students with increased risk for poorer mental health outcomes (i.e. Black minority ethic, female), and was also able to reach students who were in need of mental health support. Over two-thirds of students who took part in the intervention had never accessed formal psychological support. This is important to consider when we acknowledge that more than one in four students recruited (27.3%) scored above a clinical cut-off for depression at baseline and almost one in two students (48.7%) scored above the threshold for concern on anxiety measures. While most students (70%) self-referred to take part, 28.6% of students needed encouragement from a teacher to self-refer. This self-referral model with the support of teacher encouragement provides a promising approach in the context of students who may be considered traditionally 'hard to reach' in mental health prevention interventions.

Seven primary studies received a strong or moderate quality rating and reinforce key findings emerging from the evidence reviews (Blossom et al., 2020; Brière et al., 2019; Brown et al., 2019; Harrison & Wang, 2020; Haugland, 2020; Makover et al., 2019; Pearce et al., 2017; Sælid & Nordahl, 2017; Young et al., 2019). These interventions were delivered to students with elevated but subclinical levels of anxiety or depression. **Significant short-term reductions in depressive symptoms (small–medium effect sizes) were consistently reported across CBT interventions** (Blossom et al., 2020; Brière et al., 2019; Haugland, 2020; Makover et al., 2019). One study observed sustained improvements in depressive symptoms at 12 months follow-up (Haugland, 2020).

Findings regarding improving students' anxiety symptoms were positive, although slightly less consistent than impact on depressive symptoms. Two CBT-based interventions showed small but significant improvements in students' anxiety symptoms, with results sustained between 3 and 12 months (Haugland, 2020; Makover et al., 2019). The Blues Programme (Brière et al., 2019) which was designed for students with elevated depression levels, did not improve students' anxiety levels over time. Two weak studies carried out in the UK which evaluated an indicated CBT intervention aimed at addressing exam pressure and stress reported significant improvements in students' anxiety symptoms (Putwain & Pescod, 2018; Putwain & von der Embse, 2020). However, another small-group CBT intervention delivered in the UK, which also received a weak quality assessment rating, failed to show positive impact on anxiety or wellbeing (Weeks et al., 2017).

Similar to findings emerging from our review of systematic reviews, interventions which adopt other approaches than CBT to addressing mental health symptoms, including psychotherapy and counselling appear to have mixed evidence. Two interventions (counselling and rational emotive behaviour therapy) reported improvements in students' depressive symptoms and psychological distress (Pearce et al., 2017; Saelid & Nordahl, 2017). Two studies examining the effectiveness of counselling and interpersonal psychotherapy reported no impact on mental health outcomes (Harrison & Wang, 2020; Young et al., 2019).

›› *See intervention spotlight: The Blues Programme*

Virtual and digital delivery of mental health interventions is of growing interest particularly given current circumstances with Covid-19 and schools being closed for extended periods. Our recent rapid review of virtual and digital interventions found that virtual interventions can achieve similar effects as face-to-face interventions under certain circumstances, but rarely outperform these (Martin et al., 2020).[5] Nevertheless, due to the potentially vast reach at a low unit cost, virtually delivered interventions are an emerging practice that needs further exploration to ensure young people can be supported both effectively and cost-efficiently.

Results from a narrative review of online interventions to prevent poor mental health provide emerging evidence regarding the effectiveness of online cognitive behavioural therapy interventions for reducing symptoms of anxiety and depression in young people (O'Dea et al., 2015). Four out of five randomised controlled trials within that review demonstrated positive effects; however, the overall quality of this narrative synthesis is weak and further evidence is warranted.

Four of the prevention interventions we identified in our search for primary studies contained a digital component. Two of these interventions combined face-to-face delivery with a digital component (Putwain & Pescod, 2018; Putwain & von der Embse, 2020; Teesson et al., 2020). Another two interventions were delivered digitally, one intervention using a fantasy game (SPARX-R; Perry et al., 2017) and another using a self-guided single computerised session (Growing Minds; Schleider et al., 2019). While the quality of these studies ranged from moderate to weak, their results are encouraging with evidence of significant improvements

5 See https://www.eif.org.uk/report/covid-19-and-early-intervention-evidence-challenges-and-risks-relating-to-virtual-and-digital-delivery

Intervention spotlight

The Blues Programme

Brière et al., 2019

What is the programme?

The Blues Programme is a group-based targeted indicated cognitive behavioural therapy programme for pupils aged 13–19 years who experience depressive symptoms. It aims to support adolescents to identify negative thoughts, change their thinking patterns, increase their involvement in pleasant activities, and enhance their coping flexibility. It is a manualised intervention and focuses on two core concepts: 1) changing thinking, which involves noticing and changing negative thinking patterns; 2) changing doing, which involves increasing participation in pleasant activities and behavioural coping. Each group session involves talking therapy, group discussion, and sharing lived experiences from the group. Students are provided with homework exercises which are designed to reinforce the learning from the group sessions.

How is it delivered?

Group-based CBT sessions (one hour long) are delivered to groups of five to nine students, one session per week over the course of six weeks. Each group is facilitated by trained psychoeducators (Master's-level clinicians) and psychologists. The intervention is delivered to students with elevated but sub-clinical levels of depression who were identified through screening.

Programme outcomes: Improvements in depression and psychosocial wellbeing for students at risk

In a randomised controlled trial of 74 students from three schools in Canada, the Blues Programme showed notable promise for overall improvements in students' wellbeing. Students reported significant improvements in depressive symptoms, although these improvements were not maintained at the six-month follow-up. However, after taking part in the intervention, students had a significantly reduced risk of developing a diagnosis of major depressive disorder (MDD) at six-month follow-up compared to students in the control condition with elevated symptoms who received only an information leaflet on depression. This shows promise for the intervention in being able to prevent the worsening of symptoms of poor mental health over time. Results from this study also revealed a significant increase in how often students reported engaging in pleasant activities following the intervention (although the increased frequency was not maintained at the six-month follow-up). Furthermore, students who took part in the intervention reported they had significantly improved interactions with their parents through decreased conflict (rather than increased positive interactions). The skills students learn in the school setting may, therefore, be transferred to situations outside the school environment, helping to improve wellbeing across other aspects of their life.

Shows promise: As being low-cost and effectively implemented in school settings by external professionals

Evidence for the Blues Programme has been evaluated as part of the EIF Guidebook.[1] The programme received a level 4+ rating meaning there is evidence of effectiveness from at least two rigorous evaluations, such as randomised controlled trials or quasi-experimental trials. The Blues Programme has also been rated with a cost rating of 1, meaning it is low cost to set up and deliver.

In the current study the intervention was delivered by school professionals (school counsellors and a psychologist) specialising in mental health support – that is, not teaching staff. They were able to deliver the intervention with relatively minimal support (a one-day training session) and with high adherence to the intervention manual. The notable improvements in depression and psychosocial wellbeing among students at risk in this study highlights the real potential for targeted mental health interventions when they are delivered by professionals who are external to the core teaching staff. Overall, the intervention shows promise for being an effective, low-cost, targeted intervention that can prevent the worsening of mental health among students who most need support.

1 See: **https://guidebook.eif.org.uk/programme/blues-programme**

in symptoms of depression (Perry et al., 2017; Schleider et al., 2019) and anxiety (Putwain & Pescod, 2018; Putwain & von der Embse, 2020; Teesson et al., 2020).

Digital interventions offer a range of potential advantages to supporting adolescent mental health including extending reach of an intervention, removing logistical barriers, and lowering the unit cost of delivery (Lehtimaki et al., 2021). To date, very little work has been done to understand how face-to-face adolescent mental health interventions can be adapted for virtual delivery or whether digital interventions are more effective when specifically designed for remote delivery. There is some evidence that participant face-to-face and or web-based support is an important feature in terms of programme completion and outcomes (Clarke et al., 2015; Lehtimaki et al., 2021). Given the role of online technology in young people's lives, it is likely we will see more digitally delivered mental health interventions over the coming years. Further work is required to strengthen the quality of research underpinning these studies and to understand conditions necessary to ensure programme outcomes.

›› *See intervention spotlight: SPARX-R*

What works for whom?

At-risk students

There is evidence that **CBT interventions show greater impact among students identified at risk of developing mental health problems** (Feiss et al., 2019; Scott, 2016). These findings are in line with other reviews which have found larger effect sizes across targeted depression prevention intervention compared to universal delivery (Werner-Seidler et al., 2017). Offering school-based indicated interventions to young people with elevated mental health symptoms has the potential to significantly expand mental health provision for this group of young people who are faced with numerous barriers in relation to help-seeking. Such barriers include limited capacity of specialist mental health services and reluctance to seek help from mental health professionals, and concerns around stigma which is particularly salient for socially disadvantaged and minority ethnic young people (Brown et al., 2019; Cauce et al., 2002; Michelson & Day, 2014).

There is some preliminary evidence from primary studies regarding the effectiveness of interventions implemented with young people from minority ethnic groups in the UK. The DISCOVER programme showed small and small-to-moderate effect sizes in reducing depressive symptoms and improving quality of life and overall wellbeing among at-risk young people, the majority of whom were from minority ethnic backgrounds (Brown et al., 2019).

Under what circumstances?

Programme facilitator

Across the reviews and primary studies, we can see that the majority of prevention interventions are delivered by either school staff or external professionals including psychologists and counsellors. A strong meta-analysis of teacher-delivered anxiety and depression prevention interventions found universal interventions had a very small effect on depression and anxiety; teacher-delivered selective or indicated interventions, on the other hand, had no effect (Shelemy et al., 2020). Another strong meta-analysis found that externally delivered indicated interventions were effective, while internally facilitated interventions had no effect (Gee et al., 2020).

It is likely that school staff do not currently have the level of knowledge and expertise required to deliver indicated interventions effectively, and that external professionals are better qualified to support the needs of more at-risk pupils. A dependence on external

Intervention spotlight

SPARX-R

Perry et al., 2017

What is the programme?

The SPARX-R programme is a universal digital cognitive behavioural therapy (CBT) programme designed for students in the upper end of secondary school. It aims to prevent depression using cognitive behavioural skills where students navigate a computerised fantasy world that has been overrun by GNATs (gloomy, negative, automatic thoughts) with the mission of restoring balance to the world. Topics in the modules covered: finding hope, being active, dealing with strong emotions, overcoming problems, and recognising and challenging unhelpful thoughts. The final module explores how all of the skills can be brought together. Key skills covered in the programme include relaxation, activity scheduling and behavioural activation, emotion regulation, interpersonal skills, problem-solving, cognitive restructuring and distress tolerance. The programme is designed to be completed before a major stressor (that is, final year exams).

How is it delivered?

SPARX-R is delivered on computers via the internet. Students navigate a digital fantasy world individually during class time, where a teacher provides supervision. The programme has seven modules (completed as levels) which each take between 20–30 minutes to complete. The programme is delivered over five to seven weeks.

Programme outcomes: Improvements in depressive symptoms among a universal sample of students

A randomised controlled trial of 540 students from 10 secondary schools in Australia revealed promising results with a significant reduction in students' depression levels prior to final school exams when compared to students in the control group that received another virtual programme (lifeSTYLE). Significant improvements (reduction) in depression symptoms were also noted at six-month follow-up. Although effects were small, they reflected clinically significant improvements, showing promise for the intervention in producing meaningful change in students' mental health. Results showed that effects were maintained where students only completed four out of the seven modules, but not if they completed fewer than four. Improvements in depressive symptoms were not maintained to 18 months, and there were no improvements in anxiety, suicidality or academic grades.

Shows promise: As an online universal intervention that can be delivered as a first step in a multi-tiered approach

SPARX-R is a mental health prevention intervention that is delivered online as a digital game where students are self-guided in programme completion. The intervention can be delivered without direct facilitation, meaning it requires fewer resources (such as teacher training, face-to-face contact time, curriculum timetabling). This provides a promising approach for preventing mental health problems with the potential to be implemented at scale. In addition, the intervention produced significant reductions in depressive symptoms under universal administration showing promise as a 'first-step' universal intervention that is part of a multi-tiered approach. Improvements are particularly promising considering the intervention resulted in clinically meaningful reductions in depressive symptoms among students facing the real-world stressor of final year exams.

professionals to deliver all prevention interventions presents a significant challenge in relation to costs and sustainability of school-based interventions, particularly given major capacity issues across the child and adolescent mental health workforce.

Results from a number of reviews and primary studies which examined the impact of universal interventions provide good evidence in relation to teacher-delivered interventions and their impact on depression and anxiety outcomes (Carnevale, 2013; Feiss et al., 2019; Garmy et al., 2019; Shelemy et al., 2020; Teesson et al., 2020). These results suggest that when provided with the appropriate training and supervision, teachers can effectively deliver *universal* mental health prevention interventions. This is an important finding given the extensive contact school staff have with students beyond the lifetime of an intervention, providing them with opportunities to integrate core skills and teaching within the wider curriculum and school environment. Further research into the training and supervision/support necessary to enable teachers to deliver high-quality prevention interventions is required.

Training, support and quality

The training provided to teachers has been identified as an important moderator in intervention effectiveness. One meta-analysis reported that where teacher training lasted less than two days, interventions had no effects on depression or anxiety, but where the training lasted two or more days, studies found significant improvements (Shelemy et al., 2020). This review also found that regular supervision for teachers was related to intervention efficacy for depression outcomes. These results build on a body of research which highlights the importance of high-quality teacher training and the provision of ongoing support. Shelemy and colleagues (2020) suggest that the level of teacher engagement may be crucial to intervention outcomes. Teacher engagement can be supported through increased supervision, the provision of adequate time for teachers to become familiar with intervention concepts and approaches and selecting an intervention that meets the needs of pupils and school staff.

Individual vs group format for indicated interventions

There is some evidence to suggest that the delivery of indicated interventions in group or individual format is an important consideration in relation to the outcome being targeted. Results from one meta-analysis revealed that for depression prevention interventions, individual interventions may have a larger effect on depression symptoms than group interventions (Shelemy et al., 2020). In contrast to this finding, individual interventions did not have a significant effect on anxiety symptoms whereas group interventions had a medium effect. While the authors underscore the need to interpret these findings with some caution as a result of the small number of trials included in this subgroup analysis, they hypothesise that group delivery may be suited to young people with anxiety symptoms because of the opportunities provided for normalisation, peer modelling, reinforcement and exposure to social situations. Young people with depressive symptoms may benefit more from one-to-one support and an approach that is more tailored to their individual needs.

Results from our primary studies also highlight the potential of combining individual and group format in prevention programming. The Footprints Programme integrates three empirically supported approaches (motivational interviewing, modular CBT and the enhancement of protective factors) and takes a novel approach in that these three components were presented in both group-based sessions and also individual motivational interviewing sessions. Students have the flexibility to apply relevant components of the group sessions to their individualised goal and change plans (Terry et al., 2020). Results from this study provide preliminary evidence on the efficacy of an integrated approach which utilises a combination of individual and group formats. However, further research is required to determine whether a flexible, more tailored approach consistently addresses an individual's needs and increases the impact of targeted indicated interventions.

Dose

The impact of dose on programme outcomes has been examined across a number of meta-analyses and results seem to indicate that dosage matters in the context of universal interventions. Shelemy and colleagues (2020) found that improved outcomes for prevention interventions (94% of which were universal) were associated with interventions with 8 to 16 sessions of 45–90-minute duration. Interventions with more than 16 sessions were not effective. Feiss and colleagues (2019), on the other hand, reported that universal anxiety reduction programmes with 'higher doses' were more effective, but it is unclear how the authors define higher dose. Results from our primary studies appears to support Shelemy's findings. Two universal studies which consisted of fewer than eight sessions showed no significant impact across depression and anxiety symptoms (Burckhardt et al., 2018; Ohira et al., 2019). Both studies suggest the low intensity and short duration may explain the outcomes observed.

Suicide prevention interventions

Four narrative syntheses on preventing suicidality were identified as part of our review of reviews. Inclusion criteria varied substantially across the four systematic reviews. The reviews reported on suicidal behaviour including **self-harm, suicidal ideation, attempt or completion**. One review examined effects on help-seeking attitudes (Klimes-Dougan et al., 2013).

Only one primary study on suicide prevention met our inclusion criteria. This paper reports on the effects of a combination of psychoeducation and universal screening on help-seeking and suicidality among 9th graders in a US-American high school (Torcasso & Hilt, 2017).

Quality and quantity of research

Various methodological concerns were identified across the four systematic reviews we identified, two of which were of weak and two of moderate quality. All four reviews were published in or prior to 2015 and were narrative syntheses. As the systematic reviews are not only dated but also of moderate to weak methodological quality, the conclusions we can draw here in relation to preventing suicidality through school-based interventions are limited.

The primary study we identified was of weak quality (Torcasso & Hilt, 2017).

TABLE 6
Quality assessment ratings of systematic reviews of suicide or self-harm prevention interventions

Author	Type of evidence review	Quality assessment rating
Calear et al., 2015	Narrative synthesis	Moderate
Harlow et al., 2012	Narrative synthesis	Weak
Klimes-Dougan et al., 2013	Narrative synthesis	Weak
Wei et al., 2015	Narrative synthesis	Moderate

What works?

Universal interventions

Psychoeducational interventions are designed to increase participants' understanding of how to obtain and maintain positive mental health; typically targeting stigma, young people's understanding of mental health problems, and attitudes, intentions or actual behaviours towards help-seeking.

Psychoeducation has limited evidence of reducing suicidality. Wei and colleagues (2015) found 'inconclusive' and 'insufficient' evidence on the effectiveness of psychoeducation for reducing suicidal behaviour. Calear and colleagues (2015) reported that psychoeducation reduced suicide attempts, but not ideation. Psychoeducation to prevent suicidality has proven feasible in selected studies; however, additional research is needed to understand how content must be packaged to consistently achieve positive effects.

A weak study conducted in the US of an intervention that combines screening and psychoeducation provides preliminary evidence of positive programme effects (Torcasso & Hilt, 2017). Mental health service utilisation increased, and suicide ideation and attempts decreased.

Gatekeeper training is another approach used to prevent suicide and self-harm. It is designed to teach lay and professional 'gatekeepers' the warning signs of mental health crisis and how to respond. Gatekeepers can include anyone who is strategically positioned to recognise and refer someone at risk of suicide (such as teachers, other school staff). Evidence across systematic reviews indicate that gatekeeper training currently has no evidence of effectiveness. Wei and colleagues (2015) rate an evaluation of gatekeeper training as 'ineffective' as the study in question was rigorous but showed no effects. Indeed, Klimes-Dougan and colleagues (2013) report that gatekeeper training demonstrated adverse effects on help-seeking.

Targeted indicated interventions

Motivational interviewing was identified as a targeted indicated approach to suicide prevention. Motivational interviewing is described as an empathic, supportive, yet directive, counselling style that provides conditions under which change can occur (Rollnick & Miller, 1995).

Motivational interviewing as a school-based targeted indicated intervention has inconclusive evidence of effectiveness. Calear and colleagues (2015) identified a small number of trials where motivational interviewing was offered in combination with different forms of support. One study showed no effects, another had effects on suicide ideation but not on attempts, and a third study showed effects on suicide ideation only in the trial arm where parents as well as school counsellors were involved.

Additional research is needed to understand for whom and under what circumstances motivational interviewing in schools can reduce or prevent suicidal behaviour.

Intensive psychotherapy

Calear and colleagues (2015) identified one evaluation of intensive psychotherapy for depressed adolescents with suicidal risk. This intervention was shown to reduce suicide ideation (Tang et al., 2009). While this preliminary evidence is encouraging, further research exploring the potential of school-based intensive psychotherapy to prevent suicidality, and the conditions under which it is effective is needed, in particular in the light of limited evidence supporting the effectiveness of school-based psychotherapy in reducing depression, anxiety or stress.

Latest developments

One study, Saving and Empowering Young Lives in Europe (SEYLE), which did not meet our inclusion criteria (published in 2015) is noteworthy. In this large European trial, three suicide prevention interventions were compared with a control condition. The study involved 11,110 adolescents from 168 schools in 10 European Union countries. Schools were randomised to a gatekeeper training module targeting teachers and other school personnel, a psychoeducational intervention (Youth Aware of Mental Health) or screening with referral of at-risk pupils (Wasserman et al., 2015). The gatekeeper intervention had no impact on suicide ideation and attempts, and neither did the screening programme. The psychoeducational intervention, Youth Aware of Mental Health (YAM), on the other hand, reduced both the number of suicide attempts and severe suicidal ideation. This programme is aimed at young people aged 13–17 years and consists of five one-hour classroom sessions to support youth-led dialogue about mental health. YAM is currently being evaluated as part of a large UK trial called AWARE (Hayes et al., 2019).

›› *See intervention spotlight: Youth Aware of Mental Health Programme (YAM) as part of the Saving and Empowering Young Lives in Europe trial (SEYLE)*

What works for whom, and under what circumstances?

There is very little evidence from across the systematic reviews and primary studies regarding what works for whom and under what circumstances. In line with the findings reported above, a narrative review of suicide prevention interventions highlighted the lack of evidence and provided a series of recommendations to address the design, content and delivery of school-based suicide and self-harm prevention interventions, including the following (Surgenor et al., 2016).

- Programmes should be implemented as part of a longer-term strategy.
- Decision-makers should take the context into consideration when selecting the programme.
- Programmes should be facilitated by external staff because there is some evidence that students are more reluctant to accept and to engage in teacher-delivered suicide prevention interventions. Practical and safeguarding issues do, however, need to be taken into account.
- Implementation facilitators should familiarise themselves with the setting before the programme starts.
- The design and delivery of programmes should be flexible.
- Programme content and delivery should be varied, interactive and engaging.
- Learning outcomes of psychoeducational programmes should be clearly defined.
- Programmes should be comprehensive, given the complexity and interaction of factors that may lead to suicidal behaviours, and prevention programmes should move beyond prioritising and addressing single issues.
- Risk factors should be recognised but not overemphasised. Overemphasising some risk factors may result in overlooking others, or in under-identifying those who are at risk of making impulsive suicidal attempts.
- Programme outputs and effects should be consistently monitored even outside formalised trials to understand whether any impact achieved is sustainable.

Intervention spotlight

Youth Aware of Mental Health Programme (YAM) as part of the Saving and Empowering Young Lives in Europe trial (SEYLE)

Wasserman et al., 2015

What is the programme?

The Youth Aware of Mental Health (YAM) Programme is a mental health awareness and suicide prevention intervention designed to increase adolescents' knowledge of mental health and healthy behaviours. It is a universal prevention programme aimed at 14–16-year-olds. The programme works on the assumption that increasing adolescents' knowledge and awareness of mental health facilitates communication about mental health concerns, but without raising unrealistic expectations about the availability of professional mental health care. The programme combines cognitive learning (through lectures about mental health) and emotional learning (through role-play sessions) with a 'hands-on' approach to sensitive topics by leaving space and time for in-depth discussion in small groups. Role-play sessions allow students to learn about mental health and develop problem-solving skills that enable them to approach distress and identify circumstances where they can apply their skills. This includes learning opportunities to identify when and how escalation of mental health problems occur, and exploring the impact of poor mental health and suicide on those directly and indirectly involved. A didactic booklet is given to students at the end of the programme covering topics of mental health awareness: self-help, stress and crisis, depression and suicidal thoughts, helping a troubled friend, and contacts for help and advice.

How is it delivered?

The four-week interactive programme is delivered through a combination of lectures and role-play sessions. Each session includes an opening lecture, three role-play sessions, and a closing lecture with a discussion session, each lasting between 45–60 minutes. Sessions are delivered in small groups with 10–15 students each. The programme is delivered by external professionals who are child psychologists and psychiatrists, as well as a team of instructors dedicated to the delivery of sessions — particularly the role-play sessions which are labour-intensive. The programme specifically does not include regular school staff to reduce concerns about stigma and being judged.

Programme outcomes: Improvements in suicide attempts and suicidal ideation long term

YAM was evaluated as part of the SEYLE trial across 12 European countries involving 12,395 pupils from 179 schools. Results from this study showed no significant differences between intervention and control conditions at three-month follow-up. However, at 12-month follow-up, adolescents allocated to YAM had significantly reduced likelihood of attempting suicide and having severe suicidal ideations. Adolescents who took part in YAM had 55% lower chance of suicide attempt incidents and 50% reduced chance of severe suicidal ideation compared to students in the control group. This translated to considerable reductions in the absolute number of suicide attempts and occurrence of ideation. In YAM, 14 students (0.70%) reported suicide attempts (vs 34 [1.51%] control group), and 15 students (0.75%) reported severe suicidal ideation (vs 31 [1.37%] control group).

Shows promise: For cultural adaptability, acceptability and adolescent engagement

YAM has been implemented across 12 European countries and was adapted to fit the local languages of the participating sites. The intervention shows promise as an adaptable programme that can be tailored to suit the needs of the local population and remain effective. An evaluation of the acceptability of the programme[1] revealed the interactive approach helped to engage students, and coordinators reported that students preferred it to the standard classroom set-up. Interviews with awareness coordinators also showed discussions of mental health problems are still uncommon and stigmatised, so the role-play component of the programme was much appreciated. The programme shows promise for being able to offer a forum for students to be able to discuss mental health without judgement and develop experiential knowledge of approaching sensitive topics of depression and suicidality. The intervention is currently being evaluated in the UK context.[2]

Shows promise: For cost-effective reductions in suicide attempts

A cost-effective analysis[3] of the programme showed that of the three interventions trialled in SEYLE (YAM; Question, Persuade & Refer gatekeeper programme; ProfScreen programme for identifying students at risk), YAM was most cost-effective to implement. To reduce the risk of attempted suicide by 1%, YAM cost €34.83, and to reduce the risk of severe suicide ideation by 1% YAM cost €45.42. YAM also showed a cost per quality-adjusted life year (QALY) of €47,017 for incident of suicide attempt and €48,216 for severe suicidal ideation, both of which are substantial.

1 Wasserman et al. (2012). Suicide prevention for youth-a mental health awareness program: lessons learned from the Saving and Empowering Young Lives in Europe (SEYLE) intervention study. *BMC Public Health, 12*(1), 1–12.

2 Hayes et al. (2019). School-based intervention study examining approaches for well-being and mental health literacy of pupils in Year 9 in England: study protocol for a multischool, parallel group cluster randomised controlled trial (AWARE). *BMJ Open, 9*(8), e029044.

3 Ahern et al. (2018). A cost-effectiveness analysis of school-based suicide prevention programmes. *European Child & Adolescent Psychiatry, 27*(10), 1295–1304.

Behaviour

Interventions to prevent behavioural difficulties

Overview

In this chapter, we examine evidence on the effectiveness of school-based interventions designed to reduce behavioural difficulties. Behavioural disorders are the most common disorder type among 11–16-year-old boys in England (NHS Digital, 2018).

Young people who exhibit persistently high levels of externalising behaviour are at increased risk of poor adult outcomes across mental health, education, physical health and social outcomes, including depression, anxiety, school dropout, not in education, employment or training status, substance abuse, early parenthood, and drug-related and violent crime, including violence against women and children (Clarke & Lovewell, 2021). Research has shown that developmental pathways to serious violence often begin with young people engaging in aggressive and antisocial behaviour. This highlights the importance of intervening early to address behavioural problems and promote prosocial behaviour (Dahlberg & Potter, 2001).

The majority of behavioural interventions address young people's knowledge, attitudes and skills to minimise the effects of known risk factors and enhance protective factors as a means to preventing or reducing engagement in violent or aggressive behaviour. In our review of the evidence, we identified four main types of interventions.

Aggression and violence prevention programmes: Target knowledge, skills and attitudes to minimise the effects of known risk factors and enhance protective factors as a means to preventing or reducing engagement in violent or aggressive behaviour. Prosocial skills, including anger management, empathy, problem-solving, communication and decision-

making skills are frequently addressed. Some interventions aim to promote school-wide norms for non-violence.

Bullying prevention interventions: Include both curriculum and whole-school interventions designed to promote antibullying attitudes and behaviour, and to promote prosocial conflict-resolution skills. Most of these interventions draw on the social cognitive principles of behaviour change with a focus on changing attitudes, altering group norms, and increasing self-efficacy (Vreeman & Carroll, 2007).

Sexual violence prevention interventions: Seek to increase knowledge of what constitutes sexual violence, promote attitudes that are not supportive of sexual violence, and build skills to effectively prevent or reduce incidents of sexual violence or harassment. These interventions are delivered through group education and activities, relationship skills building, peer mentor training and bystander approaches (Lundgren & Amin, 2015).

Conduct problems and school discipline interventions: A variety of different intervention modalities are employed across behavioural interventions including classroom-based curricula, digital activities, physical activity, teacher training in restorative practices. Several programmes adopt a whole-school approach to addressing young people's behaviour needs incorporating universal and targeted provision in combination with strategies implemented at the whole-school level through the ethos and environment.

Key points: Preventing aggression, bullying or violence

What works?

- There is evidence that **violence prevention interventions** have a small but positive effect on aggressive behaviour in the short term. There is also evidence that these interventions can have a wider impact on other behavioural outcomes including bullying victimisation and pupil wellbeing.
- **Bullying prevention interventions** have been shown to be effective in reducing the frequency of bullying (both traditional and cyberbullying) victimisation and perpetration. Broader impacts on pupil wellbeing have been observed across several studies. The latest evidence suggests that whole-school interventions are particularly effective in reducing bullying behaviour. While there is some evidence that interventions can have a long-term positive effect on traditional bullying perpetration, evidence of long-term effects on cyberbullying is very limited.
- **Universal sexual violence prevention interventions** have been shown to have a small but positive effect in improving knowledge and attitudes about sexual violence but have minimal impact on perpetration and victimisation. There is promising evidence on the effectiveness of sexual violence prevention interventions when delivered to **young people at risk of experiencing sexual harassment and violence**. The evidence shows these programmes can reduce perpetration and victimisation, in particular if interventions are embedded in a wider, whole-school approach.
- There are insufficient studies to determine the impact of interventions aimed at reducing conduct problems and disciplinary referrals in school.

For whom and under what circumstances?

- The vast majority of behaviour interventions we examined (83%) were implemented with young adolescents (12–15 years). This highlights the lack of school-based interventions addressing the behavioural needs of older adolescents.
- Programme effects for violence prevention interventions have been shown to be greater among students who are considered at high risk of violent behaviour. This might, in part, be due to aggressive behaviour being relatively rare in the general adolescent population where there is less scope for change.

Take-home messages

- A focus on social and emotional skill development and behavioural practice techniques appears to be a core component of effective violence and bullying prevention interventions. These findings highlight the importance of explicitly teaching these skills to prevent the onset of behaviour problems and reduce the likelihood that young people at greater risk will engage in aggressive or bullying behaviour.
- Whole-school interventions which embrace change across the school environment as well as the curriculum have been identified as among the most effective means to prevent and respond to behaviour problems. These interventions have been shown to be more likely to result in enduring positive outcomes. The complex nature of these interventions requires clarity around the operationalisation of what is to be implemented and how it should be implemented in order to achieve optimum results. Long-term evaluations are necessary to ensure components of the whole-school approach are sufficiently embedded within the school system to result in positive change.

Research recommendations

- There is in general a lack of research examining the long-term impact of behavioural interventions, with the majority of follow-up studies ceasing after six months or less. This has been repeatedly highlighted as an issue over the past 15 years. **There is a real need to invest in long-term evaluations to determine if the resources and costs required to implement and sustain these behaviour interventions are a sound investment.**
- We did not identify any primary studies examining the impact of cyberbullying prevention interventions. Given the rise in cyberbullying and the negative impact it can have on young people's mental health, **future research in the UK should invest in evaluation of interventions designed to address both traditional and cyberbullying**.
- Conduct problems and disciplinary referrals and exclusions have been identified as a significant issue faced by many schools in the UK; however, research on effective interventions designed to reduce conduct problems is lacking. **There is an urgent need to invest in further research examining how best to address the needs of students at risk of exclusion as a result of behavioural problems.**

Quality of research

We identified 11 systematic reviews that focused on interventions designed to prevent behavioural problems in young people (table 7). Four of these reviews examined the impact of aggression or violence prevention interventions; two reviews focused on the effects on bullying prevention interventions; and five reviews examined the impact of sexual violence prevention interventions. The quality of the reviews was mixed: three meta-analyses were of strong quality; one meta-analysis and four narrative syntheses were of moderate quality; and another two narrative syntheses as well as one meta-analysis were of weak quality.

TABLE 7

Quality assessment ratings of systematic reviews of behaviour interventions

Reviews on preventing maladaptive behaviours	Type of evidence review	Quality assessment rating
Alford & Derzon, 2013	Meta-analysis	Weak
Castillo-Eito et al., 2020	Meta-analysis	Strong
Cox et al., 2016	Narrative synthesis	Moderate
De Koker et al., 2014	Narrative synthesis	Moderate
De La Rue et al., 2017	Meta-analysis	Strong
Gavine et al., 2016	Narrative synthesis	Moderate
Leen et al., 2013	Narrative synthesis	Weak
Lundgren & Amin, 2015	Narrative synthesis	Moderate
McElwain et al., 2017	Meta-analysis	Moderate
Ng et al., 2020	Meta-analysis	Strong
Reed et al., 2016	Narrative synthesis	Weak

Through our search of primary studies published since 2017, we identified 28 evaluations of interventions aimed at preventing problems including antisocial or aggressive behaviour, bullying, misconduct, sexual violence or harassment. The quality of the studies was mixed, with 16 studies appraised as strong or moderate and 12 studies as weak. As it is difficult to draw strong conclusions from weak-quality studies, our analysis focuses on studies which received a moderate or strong quality assessment rating.

Download

To download this report or the appendices, which provide in-depth information on all of the systematic reviews and primary studies that were analysed as part of this systematic review, please visit: https://www.eif.org.uk/report/adolescent-mental-health-a-systematic-review-on-the-effectiveness-of-school-based-interventions

What works?

Universal interventions

Aggression/violence prevention

There is evidence from the systematic reviews that school-based violence and antisocial behaviour prevention interventions have a small but positive effect on aggressive behaviour, including physical and non-physical aggression, victimisation and antisocial behaviour (Alford & Derzon, 2013; Castillo-Eito et al., 2020), and a very small but significant effect on antisocial and violence behaviour (Cox et al., 2016). While long-term positive effects on attitudes towards violence were reported occasionally, no long-term impact on violent behaviour or victimisation were found (Gavine et al., 2016).

In trying to identify effective components of aggression prevention interventions, Castillo-Eito and colleagues (2020) found that universal interventions which included *behavioural practice* (that is, prompting the 'practice or rehearsal of the performance of the behaviour') and *problem-solving* techniques (prompting participants to analyse factors influencing the behaviour and generate or select strategies that include overcoming barriers or increasing facilitators) were more effective than interventions without these techniques. The authors noted, however, that all of the studies which used these techniques included them in combination with at least three other behaviour change techniques and more research is needed to determine their impact, both on their own and in combination with other techniques.

In our examination of primary studies examining the impact of aggression prevention interventions, two of the four studies of moderate or high quality provide evidence of reducing aggressive behaviour in young people (Bonell et al., 2018; Castillo-Gualda et al., 2018). The other two studies evaluated whole-school approaches and found no impact on aggression or violence; however, broader impacts on bullying victimisation (Morgan-Lopez et al., 2020; Smokowski et al., 2018), quality of life and wellbeing (Smokowski et al., 2018) were reported.

Both of the interventions which reported programme effects on victimisation contained a social and emotional learning (SEL) component and were implemented over a long period of time (Bonell et al., 2018; Castillo-Gualda et al., 2018). One of these interventions with particularly notable findings is the UK-developed Learning Together programme (Bonell et al., 2018). This programme adopts a whole-school approach to reducing bullying and aggressive behaviour. The programme operates at three levels: classroom SEL curriculum; school ethos and environment; and restorative practice aimed at preventing or resolving conflicts. Results from a large cluster randomised control trial in England provide evidence of a small significant long-term effect (36 months follow-up) on bullying and cyberbullying perpetration, student observation of aggression by other students, and students' own perpetration of aggressive behaviour in or outside school. Several secondary outcomes were detected including improved psychological functioning, wellbeing and quality of life, reductions in police contact, smoking, and alcohol and drug use. Impact on broader education outcomes was also detected including reduced participation in school disciplinary procedures and truancy (Bonell et al., 2018). Interestingly, effects were mostly detected at 36 months and not at 24 months which reflects the time needed for components of the intervention to integrate into mainstream school structures and processes. This study adds to a body of evidence on the impact of whole-school approaches to reduce bullying behaviour. The results also demonstrate that it is possible to achieve improvements in aggressive behaviour and broader social and educational outcomes using a coordinated whole-school approach which focuses on environmental change in combination with supporting skill development. This study also underscores the need to invest in longer follow-up periods, particularly in the context of whole-school interventions, in order to ensure approaches are sufficiently embedded within the school system to result in positive change at both an individual and school level.

We identified two additional whole-school interventions which were aimed at reducing aggressive and bullying behaviour (Morgan-Lopez et al., 2020; Smokowski et al., 2018). One of these interventions provided targeted mental health support to young people at risk of violence perpetration as part of a whole-school approach to addressing young people's mental health and behaviour (Morgan-Lopez et al., 2020). A randomised controlled trial was used to compare the effectiveness of mental health support with differing intensity. The expanded school-based mental health support programme, where funding was available to provide psychotherapy to young people at risk of violence perpetration who were ineligible or otherwise unable to afford services in an alternative study arm, resulted in significant improvements in bullying victimisation compared to standard school-based mental health support. The results from this study suggest there are benefits to be gained from addressing young people's mental health needs as part of efforts to reduce bullying and aggression at a school level.

›› *See intervention spotlight: Learning Together*

Bullying prevention

Bullying behaviour is defined by three core characteristics including intentional harm, behaviour repetition and power imbalance (Olweus, 1993). Cyberbullying shares overlapping characteristics with traditional bullying, but it involves the use of electronic communication devices, with text messages and calls, social media, and instant messaging being identified as the most frequent platforms of cyberbullying (Kowalski et al., 2014; Smith, 2009).

We identified one meta-analysis of bullying and cyberbullying prevention interventions implemented with adolescents (Ng et al., 2020) as well as one narrative synthesis of cyberbullying interventions (Reed et al., 2016). Results from the strong meta-analysis indicate that school-based interventions can have a small but positive effect in reducing the frequency of traditional and cyberbullying victimisation and perpetration. There is limited evidence whether interventions have any long-term positive effects. Across only three studies with follow-ups ranging from 5 weeks to 1.5 years, standardised mean differences show, interventions had a very small effect on bullying victimisation frequency, and a small effect on bullying perpetration frequency (Ng et al., 2020). Across two studies, long-term effects on cyberbullying were either negligible (victimisation) or non-significant (perpetration). These results are generally in line with previous evidence reviews of school-based bullying prevention interventions, which report similar short-term findings for traditional and cyber-bullying prevention interventions (Cantone et al., 2015; Gaffney et al., 2019; Ttofi et al., 2011).

We identified nine primary studies evaluating the impact of bullying prevention interventions in secondary school, six of which were of strong/moderate quality. Programmes varied greatly in their approach to preventing bullying behaviour and their impact on bullying. Two studies with the most promising findings examined the impact of whole-school interventions aimed at addressing bullying behaviour. As outlined in the previous section, the UK-developed Learning Together whole-school intervention reported significant improvements in bullying and cyberbullying perpetration at 36 months follow-up (Bonell et al., 2018). The second whole-school intervention, Friendly Schools (Cross et al., 2018), aims to support young people's transition to secondary school and reduce bullying using a multi-level intervention addressing classroom curriculum, school policies and procedures, the social and physical environment, pastoral care approaches, and school-home community links. Results from a large randomised controlled trial in Australia revealed small but significant improvements in bullying perpetration, victimisation, depression, anxiety, stress, feelings of loneliness, and perceptions of school safety at the end of students' first year in secondary school. These results were only observed after the first year of implementation and not after the second year. The findings from this study are, however, important given the negative outcomes associated with poor

» Intervention spotlight

Learning Together

Bonnell et al., 2018, 2020

What is the programme?

The Learning Together programme, developed and evaluated in the UK, adopts a whole-school approach to reducing aggression and bullying in young people. The programme adopts three approaches to addressing behaviour problems in school. First, a whole-school approach aims to modify school polices and systems rather than merely classroom-based lessons. Second, teacher training in restorative practice aims to prevent or resolve conflicts between staff and students to prevent further harm. Third, social and emotional skills-based lessons teach young people the skills needed to manage their emotions and relationships.

How is it delivered?

In the first year, all school staff are trained, over half a day, in restorative practices. Approximately 5–10 key staff per school are selected to receive in-depth training to deliver restorative conferencing that deals with more serious incidents. Schools are provided with a manual to guide action group meetings – comprising at least six staff and six students and led by a member of the school's senior leadership team – to coordinate the whole-school approach and revise relevant school policies relating to discipline. The action group meets at least six times per school year (approximately once every half term). Schools are also provided with materials to guide the delivery of a social and emotional skills curriculum for students in years 8–10 (age 12–15 years), who receive 5–10 hours of teaching per term. Module topics include establishing respectful relationships, managing emotions, understanding and building trusting relationships, exploring others' needs, avoiding conflict, and maintaining and repairing relationships. The programme is implemented continuously for three years and intends to replace existing non-restorative disciplinary school policies and practices where restorative approaches are deemed by the action group to be more appropriate.

Programme outcomes: Improvements in aggression, bullying and wellbeing outcomes

The results of the evaluation of the Learning Together programme, a cluster randomised controlled trial (RCT) with a sample of 6,667 students from 40 schools in England, showed significant long-term improvements (36 months) in aggression perpetration (in or outside of school), bullying victimisation, cyberbullying perpetration, quality of life, wellbeing, psychological difficulties, participation in school disciplinary procedures and school truancy. Notably, the majority of significant effects were observed at 36-month follow-up but not at 24 months.

Shows promise: Whole-school approach, long-term positive impact, UK trial

This UK programme was implemented on an ongoing basis, at the whole-school level, and found sustained, long-term (36 months) positive effects. Intervention effects were found in the whole sample and in schools with higher baseline aggression and bullying which demonstrates the programme's utility in curtailing existing behavioural problems, and preventing new, aggression and bullying. Notably, effects were not found at 24 months but were found at 36 months; these results suggest the likely time needed for intervention components to be translated into organisational change. The findings provide strong evidence that the Learning Together programme is a cost-effective programme (an additional £47–58 per student in the intervention group) and, despite varied fidelity, can improve multiple health outcomes by focusing on transforming the school environment rather than individual behaviour change.

Evidence for the Learning Together programme has also been evaluated as part of the EIF Guidebook.[1] Overall, the programme received a level 3 rating, meaning there is evidence of short-term positive impact on child outcomes from at least one rigorous evaluation. The Learning Together programme has also been rated with a cost rating of 1, meaning it is low-cost to set up and deliver.

1 See: **https://guidebook.eif.org.uk/programme/learning-together**

secondary school transitions, including mental health and behavioural difficulties, which can have an impact on future learning and overall wellbeing (Akos, 2002; Barber & Olsen, 2004; Blackwell et al., 2007). A moderate-quality evaluation found that a restorative practices intervention which involves training all school staff in restorative practices did not have an impact on bullying, restorative practices or school climate (Acosta et al., 2019).

Two high-quality evaluations evaluated positive youth development interventions and both reported positive results. A karate-based intervention improved resilience and self-efficacy (Greco et al., 2019), and the classroom-based Cooperative Learning Approach improved psychosocial wellbeing and reduced emotional problems (Van Ryzin & Roseth, 2018).

We identified one weak narrative synthesis which examined the impact of two cyber-bullying prevention interventions (Reed et al., 2016). The authors concluded that there is limited research on effective intervention strategies to address cyberbullying to prevent depression. While some studies have explored the application of traditional antibullying programmes for cyberbullying, few specifically target cyberbullying and monitor depressive symptoms. Although the narrative synthesis had a very narrow focus as it only included primary studies where participants displayed depressive symptoms and experienced cyberbullying, our broader search confirms the dearth of research in relation to cyberbullying. While we did not identify any interventions specifically designed to address cyberbullying in schools, a number of evaluations examined the impact of other traditional bullying prevention interventions on cyberbullying victimisation and perpetration. Two of five moderate or strong studies (Bonell et al., 2018; DeGue et al., 2020; Vivolo-Kantor et al., 2019) as well as two weak studies (Benítez-Sillero et al., 2020; Carrascosa et al., 2019) reported reductions in cyberbullying. Three studies found no impact on cyberbullying (Acosta et al., 2019; Calvete, Fernández-Gonzalez, et al., 2019; Calvete, Orue, et al., 2019; Ingram et al., 2019). This inconclusive evidence is a concern given the negative impact of cyberbullying on adolescents including a decrease in academic achievement, increasing isolation, feelings of alienation and increased risk of suicidal ideation and attempts (Hinduja & Patchin, 2007; Marczak & Coyne, 2010; Ybarra et al., 2007). Cyberbullying is on the rise, and we know that adolescents engage regularly in online activities regardless of the risk of cyberbullying. Rigorously designed studies examining the effectiveness of interventions that address cyberbullying in combination with traditional bullying are urgently required.

Sexual violence prevention

In recent months, there has been a significant amount of reporting on the level of sexual harassment and violence in secondary schools in the UK with young people describing a 'rape culture' in schools including groping, coercion, slut shaming and rape. Sexual violence, which includes verbal aggression, relational aggression (controlling behaviours, jealousy), physical aggression/violence, sexual harassment, sexual aggression or coercion has a significant impact on young people across mental health, behaviour and educational outcomes (De La Rue et al., 2017). There are two major approaches to preventing sexual harassment and violence including youth-focused relationship education, and sexual violence prevention interventions. These approaches are designed to address factors such as tolerance of sexual violence, healthy relationships, sexism, fostering gender-equitable norms, non-violent conflict resolution and help-seeking behaviour.

We identified two meta-analyses (De La Rue et al., 2017; McElwain et al., 2017) of interventions designed to support healthy relationships and prevent or reduce sexual violence (referred to in the reviews as relationship violence). Results from these studies indicate that interventions have a small but positive effect in improving knowledge of what constitutes relationship violence (E.S.=.22) and a very small effect on attitudes about relationship-violence (E.S.=.14) (De La Rue et al., 2017). At follow-up, these effects were maintained.

There is emerging evidence of beneficial post-intervention effects on improving behaviour. At post-intervention, studies reported a very small effect on conflict tactics (E.S.=.18), a small effect on sexual violence victimisation (E.S.=.21), but no significant effect on sexual violence perpetration (De La Rue et al., 2017). There is limited evidence, however, that results are maintained in the long term; the effect on perpetration across studies became significant, but the effects on victimisation and conflict tactics became non-significant). There is limited evidence in relation to long-term effects (De La Rue et al., 2017).

A moderate narrative synthesis found that interventions tended to be more effective when school-based interventions were delivered across multiple settings and focused on key people in adolescents' environment (De Koker et al., 2014).

We identified four universal interventions from our search of primary studies which were designed to promote healthy relationships and address unhealthy relationship behaviour. These interventions used social and emotional skills-building curricula in combination with other strategies such as supplementary web-based activities. There is evidence from a limited number of studies that these universal interventions can have a significant impact on improving knowledge (Carrascosa et al., 2019; Sánchez-Jiménez et al., 2018). There is also preliminary evidence of impact on aggressive behaviour and sexism (Carrascosa et al., 2019) and relationship violence at six months follow-up (Muñoz-Fernández et al., 2019). It is, however, important to note that the quality of the studies in general was moderate to weak, highlighting the need for more robust research to determine the impact, what works and under what circumstances programmes can have an impact on behaviour.

The findings from the systematic reviews and primary studies suggest that raising awareness of sexual violence and supporting students' healthy relationship attitudes are not sufficient to lead to changes in actual behaviour. More targeted support may be required. This could include skill-building components aimed at modifying behaviour, providing young people with the opportunity to practise these skills, and embedding this approach within a whole-school approach to developing healthy relationships. Effective programmes which result in behaviour change are essential to addressing the concerns of many adolescents in schools in the UK. These interventions are also important in terms of helping to prevent the possible long-term trajectory of escalating violence in intimate relationships (Cornelius & Resseguie, 2007).

Targeted selective interventions

Similar to mental health and wellbeing interventions, there is limited information from systematic reviews on the impact of targeted selective behavioural interventions implemented with young people identified as at risk on the basis of broad demographic risk. Several reviews have commented on the small number of tested interventions for vulnerable groups such as young people from lower socioeconomic backgrounds (Cox et al., 2016; De Koker et al., 2014; Leen et al., 2013; Lundgren & Amin, 2015).

Aggression/violence prevention

In our review of primary studies, we identified one targeted selective intervention, Growing Against Gangs and Violence, aimed at reducing violent behaviour and gang involvement in high-risk schools which were situated in areas of high knife crime and violent behaviour in the UK. This study, which was of weak quality, provided no evidence to suggest positive short- or long-term intervention effects on gang membership, delinquency, violent offending, attitudes to gangs, refusal skills, conflict-resolution skills, resistance to peer pressure or school commitment (Densley et al., 2017). The results from this study underline the importance of further exploring what works for vulnerable young adolescents at risk of involvement in antisocial and violent behaviour. As part of this work, it is essential to understand if these types of interventions are utilising the correct mechanisms to influence offending behaviour,

are focusing on the most at-risk young people, and are using the most robust research methods to understand programme delivery and outcomes.

Sexual violence prevention

Several systematic reviews report on the positive effect of targeted selective interventions on sexual violence victimisation and perpetration (De Koker et al., 2014; Leen et al., 2013; Lundgren & Amin, 2015).

We identified three interventions which were implemented with selected student groups (Peskin et al., 2019; Sargent, 2017; Vivolo-Kantor et al., 2019). The results from two studies which were of high quality, point to the potential of comprehensive skills-based targeted interventions in reducing unhealthy relationship behaviours. The Me & You intervention provides evidence of reducing sexual violence perpetration and victimisation among young minority ethnic adolescents in the US (Peskin et al., 2019). Me & You was evaluated involving a sample where 21.0% identified as African American and 81.1% identified as Hispanic; 7.9% identified with other ethnic groups.

Dating Matters is an example of another targeted selective intervention with evidence of reducing multiple forms of violence, including sexual violence perpetration, sexual harassment victimisation, bullying and cyberbullying. This intervention was evaluated in high-risk urban communities in the US with above average crime rates and economic disadvantage (DeGue et al., 2020; Niolon et al., 2019; Vivolo-Kantor et al., 2019). A common characteristic across these effective interventions is their multi-component approach to preventing negative relationship behaviours with both interventions providing classroom curricula in combination with whole-school strategies (such as comprehensive teacher training) involving the wider community (for instance parent training and local health department activities to track teen relationship violence).

» *See intervention spotlight: Me & You*

Reducing conduct problems

We identified two papers that reported on four targeted selective programmes aimed at reducing conduct problems in schools and related disciplinary procedures and exclusions (Goyer et al., 2019; Obsuth et al., 2017).

In the US, there are promising findings regarding the potential of interventions designed to facilitate a sense of belonging, inclusion and growth among Black and Latino boys at risk of negative cycles of interaction with teachers and discipline citations. Described as Identity-Safety interventions, a 'social belonging' and a 'growth mindset' intervention were evaluated as stand-alone programmes, and in combination both with each other and a third 'value affirmation' intervention (Goyer et al., 2019). Results from two RCTs revealed significant reductions in disciplinary citations across all three interventions among Black and Hispanic boys and reduced odds that a first citation in 7th grade led to another citation in 7th grade or any citation in 8th grade. Black boys who received the 'social belonging' intervention received 65% fewer discipline citations over the course of middle and high school. The results from these studies highlight the potential of targeted interventions to interrupt negative cycles of interaction between students and teachers as a means to improving disciplinary outcomes.

In the UK, the London Education and Inclusion Project (LEIP) was implemented with schools with a high eligibility rate for free school meals (>/= 28%). The intervention utilises external providers to deliver communication and social skills training. Adverse short-term effects were found in the intervention group, where students were more likely to self-report being temporarily excluded from school than those in control schools (Obsuth et al., 2017). No effects on antisocial behaviour, bullying, delinquency, arrests, disciplinary measures,

» Intervention spotlight

Me & You

Peskin et al., 2019

What is the programme?

The Me & You programme is a multi-level technology-enhanced sexual violence prevention intervention. The programme adopts a whole-school approach[1] to promoting healthy relationships and address unhealthy relationship behaviour (emotional, physical, sexual, cyber). In the context of the current study, the programme was delivered to a population consisting of predominantly minority ethnic youth. Me & You is adapted from 'Its Your Game…Keep It Real' (IYG), a 7th and 8th grade sexual health and healthy relationships intervention which has been shown to reduce dating violence perpetration and victimisation among minority ethnic youths. The programme was adapted to be more developmentally appropriate for 6th graders (11–12 years), to directly address determinants of physical dating violence perpetration, as well as including dating violence prevention activities for parents and school personnel.

Me & You is grounded in social-cognitive theories, socioemotional learning and uses the sociological model. The programme aims to enhance skills for decision-making in relationships, understanding the consequences of one's actions and problem-solving skills. Students are instructed to select personal rules to have healthy friendships and dating relationships, to detect signs and situations that could challenge rules, and to protect their rules. Additional topics cover modelling and skills practice for managing emotions and constructive communication skills, dating violence and consequences, unfavourable norms towards violence, active consent, power differentials, gender role stereotypes, general online safety, cyber dating violence, and sexting, and resources to leave unhealthy relationships. The programme is comprised of role plays, group discussion and other skill-building activities, and the computer activities include animations, peer video role-modelling of skilled behaviours, interactive quizzes and virtual role-play skills practices.

The programme also includes a parent component: take-home activities, including interactive discussions to promote parent–child communication about dating expectations, characteristics of healthy friendships and dating relationships, communication skills and strategies for getting out of unhealthy relationships; and a newsletter – which includes tips, interactive games and an 'ask the expert' Q&A. Teachers are also instructed on how to recognise dating violence, respond to students involved in dating violence, and refer students to appropriate resources.

How is it delivered?

The student component of the programme comprises 12 lessons (five classroom only, five computer only and three classroom–computer blended) that each last 25 minutes and are delivered by trained facilitators (teachers and external facilitators). The parent component comprises three parent–child take-home activities and two parent newsletters. The whole-school component comprises a two-day teacher training and one school newsletter (delivered during lesson one). As part of the development of the programme, selected activities from the programme (such as managing emotions, consent, dating violence definitions, power differentials, cyber abuse) were pilot tested with an adolescent advisory board comprising 15 ethnically diverse (African American, Asian and Hispanic) students (11 boys, four girls) to ensure language and scenarios were realistic and relevant to urban minority ethnic youths.

Programme outcomes: Improvements in dating violence perpetration

A cluster randomised controlled trial (RCT) of the Me & You programme was carried out in the US with a sample of 921 students from 10 schools that included predominantly minority ethnic youth. Results from this study found the odds of dating violence (DV) perpetration were lower among intervention students, compared to control students. This positive improvement was evident across specific dating violence types, including physical DV perpetration, psychological DV perpetration, threatening DV perpetration and victimisation, and sexual DV victimisation.

Shows promise: Whole-school, multi-component approach for minority ethnic adolescents

The Me & You programme shows promise for reducing dating violence perpetration and some forms of dating violence victimisation (sexual victimisation) among young minority ethnic adolescents. Importantly, this programme adopts a technology-enhanced, multi-component approach, including classroom curricular with whole-school and parent strategies, to effectively reduce dating violence perpetration and some forms of victimisation in minority ethnic middle-school students.

1 The programme appears under our targeted selective section as it was implemented and evaluated with schools that included predominantly minority ethnic youth who have been shown to be at increased risk of sexual violence.

interpersonal communication, prosocial skills or academic aptitude were observed. The findings from this high-quality study suggest that short-term approaches targeting a limited set of skills which are not well integrated into school provision may not be sufficient in addressing the needs of high-risk students at risk of exclusion. As evidenced by international research, a multi-tiered approach which addresses the specific needs of at-risk students within an inclusive whole-school approach, building on principles of inclusion and healthy emotional and behavioural development, is more likely to be effective (Bradshaw, 2013).

The results from the UK study highlight the seriousness of this issue being faced by many schools in the UK with rates of temporary exclusion ranging between 30–50% across both treatment and control schools in the year prior to the study (Obsuth et al., 2017). There is an urgent need to invest in further research examining how best to address the needs of students at risk of exclusion as a result of behavioural problems.

» *See intervention spotlight: School-Based Mental Health Programme*

Targeted indicated interventions

There is limited evidence from systematic reviews on the effectiveness of targeted indicated interventions, as only a small number of studies were identified (Cox et al., 2016). One meta-analysis reported that the level of risk at the baseline was a significant moderator of programme outcomes, which suggests that programmes are more effective when targeted at adolescents with a higher risk of being aggressive (Castillo-Eito et al., 2020). The authors identified a range of behaviour change techniques being used by effective targeted interventions (such as problem-solving, behavioural practice, instruction on how to perform the behaviour, and information about social and environmental consequences); however, no single technique was identified as significantly more effective than the other. This may suggest that what makes targeted interventions effective is the combination of techniques and not the individual component. This is in line with what Wilson and Lipsey (2005) found in their examination of effective components of targeted interventions.

In our search of primary studies, we identified three evaluations of targeted indicated interventions; however, the majority of studies were of weak quality and had small sample sizes, so it is difficult to draw conclusions about intervention efficacy and the generalisability of findings beyond the trials. There is emerging evidence from strong and moderate evaluations of whole-school approaches which include a targeted indicated component aimed at addressing the needs of those identified most at risk of engaging in violence, or aggressive or bullying behaviour (Morgan-Lopez et al., 2020; Smokowski et al., 2018). These interventions have been shown to have a positive impact on multiple outcomes at the individual (Smokowski et al., 2018) and school level (Morgan-Lopez et al., 2020) which demonstrates that targeted interventions might be best offered as part of a wider approach.

For whom?

At-risk students

Programme effects for violence prevention interventions have been shown to be greater among students who are considered at high risk of violent behaviour (Castillo-Eito et al., 2020). The results from our primary studies are in line with this conclusion. Intervention effects, where analysed and reported in this manner, were larger in young people at risk of poor outcomes, who were most violent at baseline (see for example Bonell et al., 2018; Reidy et al., 2017) or who were lest engaged in school activities (Van Ryzin & Roseth, 2018). Consistent reporting of differential impact based on level of risk across evaluation studies would help us to understand which interventions work best for those most at risk.

Intervention spotlight

School-Based Mental Health Programme

Morgan-Lopez et al., 2020

What is the programme?

The School-Based Mental Health (SBMH) programme is designed to supplement existing school-based mental health services already available to students through the provision of private and community-based mental health services within schools. Services are targeted towards addressing mental health problems, reducing disruption in schools, enhancing school climate and safety, and reducing suspensions. The purpose of this current study was to examine the impact of externally delivered targeted mental health support on violent behaviour. The study tested the efficacy of three versions of school-based mental health programming (standard, expanded and enhanced):

- the standard SBMH programme goes beyond traditional school mental health services to include community mental health providers placed within schools
- the expanded SBMH programme expands student access to SBMH for students whose families were unable to afford services, and provides a student service facilitator, offering administrative support, and an increased school psychologist allotment
- the enhanced SBMH model involves the delivery of two evidence-based therapies to address student's mental health problems: dialectical behaviour therapy (DBT) and structured psychotherapy for adolescents responding to chronic stress (SPARCS) – SPARCS is a present-focused, manually guided group treatment specifically designed to improve the emotional, social, academic and behavioural functioning of adolescents exposed to chronic interpersonal or other types of trauma.

How is it delivered?

The programme was delivered in the United States. SBMH providers shared across multiple schools included school counsellors, social workers, therapists and psychologists. The standard SBMH model comprised group and individual counselling sessions for students with emotional and behavioural problems. The dialectical behaviour treatment (DBT) was delivered by private mental health providers, their supervisors and school psychologists in the form of individual therapy, group skills training and weekly DBT peer consultation meetings. SPARCS is a manually guided group treatment delivered by school counsellors and social workers.

Programme outcomes: Improvements in bullying victimisation

A quasi-experimental trial compared each version of the programme to non-SBMH schools and a randomised controlled trial compared the three programme versions with each other (sample N=4,025 students from 36 schools in the US). Results from the quasi-experimental trial showed that the expanded SBMH programme, compared to non-SBMH schools, demonstrated a significant decrease in bullying victimisation over time. Similarly, the RCT showed that the expanded SBMH programme demonstrated a significant decrease in bullying victimisation over time, compared to the SBMH standard programme. There was also evidence suggesting the expanded SBMH model, compared to the standard SBMH programme and compared to non-SBMH schools, may have had positive impact on decreasing aggressive behaviour, although these findings were just above threshold significance.

Shows promise: Whole-school approach with targeted support

This study makes an important contribution in terms of understanding the impact of mental health interventions on behavioural outcomes. The results from this study provide evidence that the expansion of mental health services to youths who are at risk of violence perpetration, but would otherwise be ineligible for – or unable to afford – services, has a significant positive impact on the larger school environment in terms of reductions in aggression and bullying victimisation.

Ethnicity

Regarding sexual violence prevention interventions, one of the primary studies we identified examined programme impact across ethnic groups with improvements in bystander behaviour detected primarily in Hispanic youth, a group known to be at greater risk for experiencing relationship violence than non-Hispanic youth (Sargent, 2017). Another study reported positive immediate and long-term findings for a universally designed intervention (Me & You) that was implemented with minority ethnic adolescents (Peskin et al., 2019). Where interventions are universal, evaluators should report impact on different ethnic groups to better understand what works for whom, and whether additional targeted selective support may be required for at risk groups of young people.

Sex and age differences

The results from our primary studies highlight that for several interventions there are some age and sex differences; however, no group consistently experienced larger benefits than another. This is in line with findings from one meta-analysis which examined age and gender as programme moderators (Castillo-Eito et al., 2020).

All evaluations that assessed sex differences found some differential impact, however, the direction varied. For example, Bonell and colleagues (2018) found that the Learning Together whole-school intervention had a greater impact on boys for bullying perpetration and quality of life when compared to girls. Conversely, one low-quality evaluation of a therapeutic drumming intervention (Suh, 2019) suggested that the intervention was only effective at reducing aggression in female students, but not in male students. Vivolo-Kantor and colleagues (2019) reported the Dating Matters intervention reduced bullying among girls and aggression among boys.

The vast majority of studies we identified in our primary search were implemented with students aged 12–15 (83%). There were considerably fewer studies involving older adolescents aged 16 or over. Only two studies examined impact according to age/grade. One study found the intervention had stronger effects on 8th graders than on 9th or 10th graders (Calvete, Fernández-Gonzalez, et al., 2019). While there is insufficient evidence to draw any robust conclusion about age as a moderator of impact, the findings suggest that students of different ages will respond differently to the same interventions. When schools are considering the adoption of evidence-based interventions, it is important to consider whether the evidence relates to a sample that is sufficiently similar to the target population in terms of age and other characteristics. Additional research is needed to better understand what works to prevent or reduce behavioural difficulties among older adolescents (age 16+).

Under what circumstances?

Whole-school interventions

There is evidence across our primary studies that whole-school interventions which provide multi-level (universal and targeted) support and reinforce skill development beyond the curriculum are more likely to result in enduring outcomes than short-term curriculum-based interventions (Bonell et al., 2018; Morgan-Lopez et al., 2020; Smokowski et al., 2018). These findings are in line with several systematic reviews which have examined the impact of behaviour interventions across primary and secondary school (see for example Cantone et al., 2015; Ttofi et al., 2011).

One of the meta-analyses we reviewed reported that whole-school and classroom-based bullying prevention interventions were equally effective. The authors note, however, that these findings differ from results of previous reviews and acknowledged that the restriction of studies to randomised controlled trials (RCTs) could have meant that effective whole-school approaches evaluated using other research designs were excluded from their analysis.

Furthermore, all of the whole-school bullying-prevention interventions which we identified through our search of primary studies were evaluated using (cluster) RCTs and had positive results (Bonell et al., 2018; Cross et al., 2018; Morgan-Lopez et al., 2020; Smokowski et al., 2018); however, none of these were included in the meta-analysis conducted by Ng and colleagues (2020). This evidence review found consistent evidence from a limited number of studies that whole-school approaches improve bullying behaviour, and promising evidence they can also reduce aggressive behaviour.

Target level

Similar to results from poor mental health prevention interventions, targeted aggression prevention interventions had larger effects on aggression and violence outcomes (d=0.39) than universal interventions (d=0.16)(Castillo-Eito et al., 2020). This might, in part be due to antisocial behaviour being relatively rare in the general adolescent population and, as a result, there is less scope for change when interventions are delivered to all pupils. Further research is necessary to understand whether and to what extent those at risk of poor outcomes benefit from universal prevention interventions.

Mode of delivery

There is limited data on the effectiveness of different modes of delivery (group vs one-to-one) in relation to targeted violence prevention interventions. When examined, delivery format did not predict intervention effectiveness, although the majority of interventions were delivered in group format, and group-based interventions tended to have larger effects (Castillo-Eito et al., 2020).

Programme facilitator

Similar to targeted mental health interventions for at-risk young people, there is evidence that targeted violence prevention interventions are more effective when delivered by an external professional such as a psychologist or social worker (Castillo-Eito et al., 2020).

For traditional bullying prevention interventions, the type of programme facilitator (class teacher or external professional) did not influence programme outcomes (Ng et al., 2020). For cyberbullying prevention programmes, however, interventions delivered by technology experts were shown to be more effective than those delivered by teachers. Ng and colleagues (2020) reported that effects on cyberbullying perpetration and victimisation were non-significant across teacher-implemented programmes. The authors explain that given the unfamiliarity and broad nature of cyberbullying, teachers may not be as well equipped as technology-savvy experts to facilitate interventions, even after receiving a short training session. Further research is required to verify this finding as there were a limited number of studies. The fact that teachers have been shown to be equally as effective as external professionals in delivering bullying prevention programmes suggests that school staff, when appropriately trained, can respond effectively to bullying in schools as well as prevent bullying behaviour.

Training, support and quality

There is limited information on the type of training and support that is associated with effective behaviour interventions. One meta-analysis reported on this (Castillo-Eito et al., 2020). In addition to reporting that external professionals were more effective in delivering violence prevention interventions, the authors also found that interventions were more effective when facilitators did not receive training. These two findings are likely to be related in that external professionals are unlikely to need additional specific training to deliver violence prevention interventions. Further research is necessary to understand the training and support necessary to enable teachers to deliver universal interventions with high quality.

Conclusions and recommendations

In this review we examined the latest evidence on the effectiveness of school-based interventions designed to:

- enhance young people's mental health and wellbeing
- reduce/prevent mental health difficulties including anxiety and depression, self-harm and suicide
- reduce/prevent behavioural difficulties including aggression, bullying and conduct problems.

Drawing together the evidence from 34 systematic reviews published since 2010 and 97 primary studies published over the past three years, this information provides a comprehensive and up to date summary of what works, for whom and under what circumstances.

Strengths and limitations of our evidence review

A strength of this evidence review is that it provides a robust overview of the current evidence on the effectiveness of school-based interventions designed to address young people's mental health and behavioural needs. We adopted a comprehensive search strategy which included a systematic search of academic databases and thorough manual searching to identify relevant systematic reviews published in the past 10 years and a 'top-up search' of primary studies published during the past three years. Despite these strengths, there are some limitations that should be noted. First, a meta-analysis of primary studies identified in this review was not conducted. Second, the possibility of publication bias needs to be considered as there may be studies which did not find positive results and consequently were not published. Third, our review of primary studies covered the past three years (2017–20). This means that key intervention studies that were published prior to 2017 were not included; however, it is likely that their data has been included in the systematic reviews we analysed and reported on. Fourth, we excluded systematic reviews that examined the impact of interventions delivered in primary or secondary schools. Although it is possible that we have omitted some key findings emerging from these reviews, given that these reviews collated the results across primary and secondary school, it was deemed necessary to exclude them. Finally, we did not extract intervention-specific data from the systematic review studies; instead we reported the overarching results from these reviews. Acknowledging these limitations, this evidence review is one of the first to provide a synthesis of the nature and quality of the current evidence from systematic reviews and primary studies examining the effectiveness of school-based interventions designed to address young people's mental health and behaviour needs. This review presents a number of key findings that have implications for future policy, practice and research in this area.

Key findings

- **Universal social and emotional learning (SEL) interventions have good evidence of enhancing young people's social and emotional skills and reducing symptoms of depression and anxiety in the short term.** Other approaches to enhancing young people's mental health and wellbeing have produced inconsistent (mindfulness interventions) or limited evidence of impact (positive youth development interventions). Mental health literacy interventions have been shown to have an impact on young people's mental health knowledge; however, there is limited evidence of impact on improving help-seeking behaviour. Only limited research has been carried out to date on the long-term impact of any of these interventions.
- **Universal anxiety and depression prevention interventions** have been shown to improve symptoms of depression and anxiety in young people in the short term. There is good evidence that **targeted indicated cognitive behavioural therapy (CBT)** interventions are effective in reducing symptoms of depression in both the short and medium term among pupils with minimal but detectable signs of depressive symptoms.
- **There is limited evidence on the effectiveness of school-based interventions designed to prevent suicide and self-harm.**
- **Violence prevention interventions have been shown to have a small but positive effect on aggressive behaviour in the short term.** Programme effects are greater among students considered at high risk of violent behaviour.
- **Bullying prevention interventions are effective in reducing the frequency of traditional and cyberbullying victimisation and perpetration,** with long-term effects on perpetration.
- There is promising evidence on the effectiveness of **sexual violence prevention interventions when targeted at people at risk** of experiencing sexual harassment and violence. The evidence shows that these programmes can reduce sexual violence perpetration and victimisation.
- Across mental health and behavioural interventions, there is evidence that **programme effects are stronger among at-risk students** compared to the general student population. It is likely that interventions aimed at preventing mental and behavioural problems are less effective among the general population because there is less scope for change. This would suggest that prevention interventions might be best directed towards at-risk populations.
- Classroom teachers were shown to be effective programme facilitators in the delivery of universal health and behavioural interventions. However, **young people in need of additional support are only shown to benefit from targeted interventions when delivered by mental health professionals such as psychologists.** The current evidence, however, does not support the delivery of targeted indicated mental health interventions by class teachers.
- Where monitored, research has shown that positive effects are observed when programmes are implemented with high quality (measured in terms of dosage, adherence, quality of delivery and participant responsiveness). This is in contrast to inconsistent/ poor implementation which has been shown to result in diminished or null effects. These findings highlight the **importance of high-quality programme implementation in achieving programme outcomes**.

Implications for policymakers

- Schools play a critical role in supporting young people's wellbeing and preventing mental health and behavioural difficulties. **The development of young people's social, emotional and behavioural competencies is foundational to the success of our young people.** These competencies are associated with wage growth, job productivity and long-term employment. They can also reduce mental health problems, violence, drug use and delinquent behaviour. Schools need to be supported in giving equal priority to mental health and academic achievement. The current system weighs heavily on the side of academic performance which makes it difficult for schools to find the time to meet the mental health and behavioural needs of pupils.
- The evidence review shows that when delivered to a high standard, **school-based mental health and behavioural interventions can help us address some of the biggest challenges that young people, families, schools and society as a whole are currently facing.** We have identified several interventions with good evidence of improving young people's wellbeing, reducing symptoms of depression and anxiety symptoms, or reducing aggressive behaviour, bullying perpetration and victimisation. It is vital that evidence-based programmes are prioritised over the vast array of programmes and resources that are available to schools, many of which lack evidence of effectiveness.
- **Programmes are more likely to be effective and result in enduring positive change when they are implemented as part of a multi-tiered whole-school approach to improving young people's mental health and behaviour.** A mental health or behavioural intervention should not be a one-off event, brought in on borrowed school time. Substantial investment is required in the adoption of a whole-school approach which consists of three core pillars:
  - **Classroom teaching and learning** – the provision of evidence-based universal interventions in combination with targeted interventions for students most at risk of mental health and behavioural interventions – effective interventions are characterised by well-scaffolded instruction which actively engages young people in the development of a specific set of skills
  - **School ethos and environment** – embedding work carried out at the classroom level within a supportive school environment and system which fosters positive relationships, a sense of belonging and purpose
  - **Extending learning to home environment** – connecting with community mental health services to protect and support the most vulnerable young people.
- Accomplishing effective implementation of mental health and behavioural interventions in real-world practice requires substantial investment in high-quality teacher training and support. **There is a need for whole-school teacher training to enable all school staff to understand and model these skills and behaviours through their everyday interaction with young people.** Teachers frequently report limited confidence in being able to respond to young people's mental health and behavioural needs. The provision of high-quality pre-service teacher training and continuing professional development is necessary to equip teachers with the knowledge and skills to enable them to develop learning experiences that support young people's social, emotional, behavioural and academic competencies.
- **Schools need to be supported in the identification of vulnerable pupils at risk of developing mental health and behavioural problems to ensure that they can receive timely early intervention support.** As part of this it is essential that the necessary interventions and support are available for young people in need. Our evidence review has shown that for young people with symptoms of depression or anxiety, CBT interventions delivered by external professionals provide the strongest evidence of impact. Schools should be provided with the necessary external support to intervene early with those most

in need. If appropriately resourced and trained, the rollout of the mental health support teams could provide a real opportunity to address this issue.

- International research has confirmed that one of the most important factors affecting programme outcomes is 'quality of implementation' with effect sizes being two to three times higher when interventions are delivered with fidelity and high quality. **Implementing evidence-based interventions and support within complex systems like schools requires a supportive implementation system in ensuring successful outcomes.** Schools need to be provided with explicit support in building readiness and commitment for change among all school staff, understanding the needs of the pupil population, developing an action plan, providing high-quality professional development and ensuring ongoing support is available to address barriers to implementation and sustainability.

Recommendations for future research

Our review has identified significant gaps in the evidence base which must be addressed if we are to offer high-quality mental health and behavioural support in secondary schools which has the potential to impact not only short- but long-term mental health, and educational and social outcomes. Key research priorities are presented below.

- Despite the fact that we identified 97 primary studies published in the past three years and nine of these were carried out in the UK, only one UK study was designed to strengthen young people's mental health and wellbeing. **We need to invest in the evaluation of mental health and behavioural interventions in the UK, in particular interventions designed to enhance young people's mental health and wellbeing.** As part of this we need to avoid common pitfalls when evaluating interventions to ensure confidence in programme outcomes.
- **Future research needs to examine the long-term impact of school-based mental health and behavioural interventions.** This review repeatedly points to the limited number of studies that examined whether benefits are maintained at follow-up. Of the studies that report long-term follow-up, the evidence is mixed with some studies reporting that effects were maintained, others found that effects had disappeared, and a small number of studies reported that effects had become significant only at follow-up. Future research needs to investigate the additional supports required to maintain positive impact at long-term follow-up.
- Despite consistent evidence on the effectiveness of mental health and behavioural interventions delivered to minority ethnic young people and young people from lower socioeconomic backgrounds, relatively few of these interventions were specifically developed for these at-risk groups. **Future research needs to invest in developing and evaluating interventions which have been specifically designed to meet the needs of minority ethnic young people and young people from a lower socioeconomic background.** As part of this, we need to investigate the degree to which cultural adaptations or the designing of intervention materials that are representative of diverse student populations result in a larger impact on young people's outcomes.
- **Additional research is necessary to understand the effectiveness of mental health and behavioural interventions among other vulnerable groups of young people including, for example, young people at risk of school dropout, LGBTQIA young people, young people with special educational needs and disability (SEND), young people with chronic illnesses, and young people with autism spectrum disorder.** Research should examine whether interventions that currently exist are equally, less or more effective for vulnerable groups. In addition, research should also examine whether interventions can be effective when delivered at the universal level in order to prevent marginalising vulnerable groups.

- **We identified a very limited number of interventions addressing cyberbullying, conduct problems and self-harm.** Future research should invest in developing and evaluating the efficacy of interventions designed to address these important issues which can have a significant impact on young people's long-term mental health and wellbeing.
- Despite the evidence regarding the coexistence of mental health and behavioural problems during adolescence and their combined impact on adult functioning (including mental health, suicidality, low education level, financial difficulties and delinquency), we identified a very limited number of interventions designed to address young people's mental health and behavioural needs. **Future research should examine the efficacy of an integrated prevention model which combines evidence-based mental health and behavioural approaches.**

Implementation research: priority areas

- Evaluation studies continue to provide limited, if any, data on implementation. Without data on what was implemented (dosage, adherence) and the quality of delivery, **we are unable to determine what led to a programme's success or failure.** In addition, we risk misinterpreting null effects in cases where the intervention was poorly implemented. It is crucial that we address this gap in future research trials.
- As part of evaluation research, there is a need to **identify barriers to delivering universal and targeted mental health support within schools** (such as resourcing; programme model and its fit within school context; implementer readiness in terms of skills, knowledge and beliefs; pupil acceptability; stigma associated with receiving targeted interventions; and so on). Reporting on implementation barriers as part of efficacy trials will advance our understanding of the conditions necessary to support programme outcomes, which will have implications for future programme development and teacher training.
- **Further clarity on what works for whom is necessary**. While our review provides evidence on the effectiveness of various approaches designed to address young people's mental health and behavioural needs, there is limited evidence on whom these approaches are effective/ineffective with. Future research should address which young people (gender, age, risk factors) are more likely to benefit from particular types of interventions (universal, targeted).
- **Research on the sustainability of effective interventions is urgently needed** to progress the field of research beyond our understanding of what works to understanding the supports required to sustain evidence-based interventions over time. Future research should examine barriers and facilitating factors affecting the sustainability of interventions after external funds and other resources end.

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