

Evidence Check

School-based prevention and early intervention for mental health



An Evidence Check rapid review brokered by the Sax Institute for the NSW Department of Education.
April 2020.

This report was prepared by: Emily Berger, Andrea Reupert, Kelly-Ann Allen, Monash University.

April 2020

© Sax Institute 2020

This work is copyright. It may be reproduced in whole or in part subject to the inclusions of an acknowledgement of the source. It may not be reproduced for commercial usage or sale. Reproduction for purposes other than those indicated above requires written permission from the copyright owners.

Enquiries regarding this report may be directed to the:

Principal Analyst
Knowledge Exchange Program
Sax Institute
www.saxinstitute.org.au
knowledge.exchange@saxinstitute.org.au
Phone: +61 2 9188 9500

Suggested Citation:

Berger E, Reupert A, Allen K. School-based prevention and early intervention for student mental health and wellbeing: an Evidence Check rapid review brokered by the Sax Institute (www.saxinstitute.org.au) for the NSW Department of Education, 2020.

Disclaimer:

This Evidence Check Review was produced using the Evidence Check methodology in response to specific questions from the commissioning agency.

It is not necessarily a comprehensive review of all literature relating to the topic area. It was current at the time of production (but not necessarily at the time of publication). It is reproduced for general information and third parties rely upon it at their own risk.

School-based prevention and early intervention for student mental health and wellbeing

An Evidence Check rapid review brokered by the Sax Institute for the NSW Department of Education. April 2020.

This report was prepared by Emily Berger, Andrea Reupert, and Kelly-Ann Allen, Monash University.

Contents

Executive Summary	6
Review questions	6
Introduction	8
Background	8
Defining mental health, mental illness and wellbeing	8
Prevalence and average age onset of youth mental illness	9
Implications of poor mental health in childhood	10
Promoting mental health and wellbeing in schools	10
The present review	11
Method	12
Search strategy	12
Inclusion criteria	12
Exclusion criteria	13
Databases	13
Search terms	13
Search process and outcomes	14
Data extraction and evidence rating	16
Findings	18
Question 1: What school-based mental health prevention and early intervention programs have been shown to be most effective?	18
Programs targeting anxiety and depression	19
Programs targeting self-injury and suicide	22
Programs targeting Autism Spectrum Disorder Attention Deficit Hyperactivity Disorder and conduct problems	23
Programs targeting body image problems and eating disorders	25
General programs	26
Regarding programs for targeting school belonging and mindfulness	28

Considerations when selecting school mental health programs	29
Question 2: For the programs identified in Question 1, what are the program characteristics that (1) drive efficacy, and (2) maintain sustainability?	30
Efficacy	31
Sustainability	32
Analysis of the gaps in the literature	33
Conclusion	34
References	35
Appendix A: Data Extraction Tables for Reviewed Articles	44
Programs Targeting Anxiety and Depression	44
Adolescent Depression Awareness Program	44
Aussie Optimism Programme-Positive Thinking Skills	47
FRIENDS	50
FRIENDS for Life	53
Fun FRIENDS	55
Get Lost Mr Scary	56
MoodGYM	57
Penn Resiliency Program	58
Op Volle Kracht (Dutch version of the Penn Resilience Program)	60
Resilient Families Program	63
Resourceful Adolescent Program	64
Programs Targeting Self-Harm and Suicide	68
Signs of Suicide	68
Youth Aware of Mental Health	70
Programs Targeting Autism Spectrum Disorder, Attention-Deficit Hyperactivity Disorder, and Conduct Problems	72
Challenging Horizons Program	72
Good Behaviour Game	76
Secret Agent Society	77
Programs Targeting Body Image Problems and Eating Disorders	78
Body Image in the Classroom	78
Happy Being Me Co-Educational	79
Media Smart	80
General Programs	83
BounceBack!	83

Bounce Back Program	84
CLIMATE Schools	87
COPE (Creating Opportunities for Personal Empowerment)	88
HeadStrong 2.0	91
Learn 2 Breathe	92
Positive Action	93
Promoting Alternative Thinking Strategies (PATHS)	99
Second Step	112
Teen Mental Health First Aid	115
Appendix B	117
Table of School-Based Mental Health Programs and Where to Find Information Online	117

Executive Summary

In Australia, the prevalence of mental health problems in young people is high with estimates that one in seven young Australians will experience a mental health condition each year [1]. Concerningly, suicide is the leading cause of death for young people between the ages of 15 and 44 [2]. The average age of onset of mental health problems in Australia is reported to be becoming younger, making today's children and young people more at risk than previous generations [1, 3]. Furthermore, complications associated with child and adolescent mental illness, including school absenteeism, school dropout and academic failure, have increased the burden for schools in managing students with mental health issues [4].

Over the past decade there has been increased recognition about the role of schools in preventing mental ill health and promoting wellbeing in young people. This focus has been advocated by significant international bodies, organisations (e.g. UNICEF, OECD, UNESCO) and key researchers globally [5-8]. A growing number of prevention and early intervention programs for fostering student mental health and wellbeing are available to primary, secondary and specialist schools, however, many such approaches have been found to be ineffective [1]. Moreover, information on the availability, evidence-base, efficacy, sustainability and long-term benefits of these programs is either not widely available or difficult for schools to access.

Review questions

This review aimed to address the following specific questions:

Question 1: What school-based mental health prevention and early intervention programs have been shown to be most effective?

Question 2: For the programs identified in Question 1, what are the program characteristics that (1) drive efficacy and (2) maintain sustainability?

An extensive review of the research literature was conducted on school-based mental health prevention and early intervention programs in early childhood, primary, secondary and specialist school settings. A search of four peer-reviewed literature databases for relevant articles (English language, published 2013 to present) was completed, followed by a two-stage eligibility assessment of the 5611 records returned in the search. This systematic review of the literature identified 74 articles reporting long-term outcomes for student mental health and wellbeing, distributed across 26 unique programs currently available to NSW schools. Data from each of these articles were collated

and the quality of evidence appraised according to the National Health and Medical Research Council guidelines [42] to generate findings in relation to the two review questions.

Findings demonstrate that there is a plethora of school-delivered wellbeing and mental health promotion programs. However, it is important to note that there is no single stand-alone panacea or response for supporting the mental health and wellbeing of students in educational settings. Nonetheless, across the identified programs, some common features of effective and sustainable programs have been found. These included having clearly identified aims and objectives of the program, clear links between the program and the needs of the students and school community, and universal features that include teacher training, support for parents, student intervention, delivery of appropriate staff training and resources, defining the roles and responsibilities of staff, details about appropriate monitoring of student outcomes, and ongoing staff consultation following program implementation. Collectively, school-based prevention and early intervention for student mental health and wellbeing has the potential to make short- and long-term sustainable positive effects on students' physical and psychological health and wellbeing. Thus, it is incumbent for school leaders and staff to consider and apply approaches and practices driven from evidence-based practices to best support and cater for the needs of students and staff within their schools.

Introduction

Background

A significant proportion of children and young people will experience a mental illness before they turn 25 [1], and three-quarters of this group do not access professional help for their mental health concerns [9]. Given that most children attend school and the amount of time children spend at school, schools are opportunistic settings to promote children's wellbeing and to identify and intervene with children and young people who may be at risk of mental ill health. It is imperative, therefore, that schools have access to current and research-backed information on programs and interventions that support the mental health and wellbeing of the young people and children within their care.

Defining mental health, mental illness and wellbeing

The World Health Organisation [10] defined mental health as “a state of wellbeing in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community”. The terms mental health and wellbeing are often used synonymously to convey a sense of ‘flourishing’ or functioning well in life [11]. Mental illness is a broad term that refers to a wide range of difficulties experienced by individuals, from milder circumstances such as stress, worries and loneliness, to more serious conditions such as clinically significant depression, psychosis and substance abuse [12]. In childhood, mental ill health is often characterised by internalising problems (for example, depression and anxiety) and/or externalising problems (such as aggressiveness, defiance and hyperactivity). When faced with stress, children with internalising problems typically turn inwards and children presenting with externalising problems direct their behaviour outwards, usually towards other people or objects [13]. Commonly diagnosed psychological issues in children and young people include:

- Neurodevelopmental disorders such as Autism Spectrum Disorder (ASD)
- Learning disorders
- Anxiety disorders
- Depression and mood disturbance disorders
- Conduct and severe behavioural disturbance.

It is broadly accepted that mental illness and wellbeing are separate constructs that co-exist and can also occur independently along a dual continuum [14]. For example, a troubled student may report low wellbeing and high mental health problems, while a vulnerable student may report low wellbeing and low mental health problems. Students who report high wellbeing and high mental health problems are considered to be symptomatic but content, while those reporting low mental health problems and high wellbeing are considered to have complete mental health [14]. This dual factor model of mental health (see Figure 1) demonstrates that both mental illness and wellbeing in young people is

ephemeral and dynamic, with potential for students to move across all four quadrants over time. Thus, someone with a mental illness might experience optimal mental health, function perfectly and maintain positive relationships [15]. Likewise, a child who is not mentally unwell may still experience difficulty coping with stresses and subsequently require support. Thus, there has been an increased emphasis on programs targeting mental illness and wellbeing and resilience of students in schools

Figure 1—Dual factor model of mental health [14]

Mental Health Problems	Subjective Well-Being	
	Low	Average to High
Low	Vulnerable	Complete Mental Health
High	Troubled	Symptomatic but Content

Some children will experience a relatively short period of ill health and their mental health may improve with or without intervention [13]. However, there are some young people who present with relatively more complex issues that affect their ability to enjoy life and meet age-appropriate developmental milestones [13]. The National Survey Mental Health and Wellbeing [17] found that some children are more at risk than others, including those from low socioeconomic backgrounds, step-/blended families, and single-parent households, all of whom were found to have a greater propensity for experiencing mental ill health than their same-aged peers. Children and adolescents who experience mental health issues also experience a lower/poorer quality of life compared to other children [16].

Prevalence and average age onset of youth mental illness

In Australia it has been estimated that 45% of Australians will experience a mental disorder in their lifetime [17]. Moreover, approximately 560,000 Australian children and adolescents have a mental health problem, which results in 26% of Australian youth reported to have a mental health concern [17-18]. In the US, Merikangas et al. [19] found that of more than 10,000 adolescents aged 13-18 years, 40% experienced some form of mental illness, with anxiety disorders being the most common (31.9%), followed by behaviour disorders (19.1%), depressive disorders (14.3%), and substance use issues (11.4%). Girls were more likely than boys to have mood and anxiety disorders, but less likely to have behavioural and substance use disorders. The same study found that just over 11% were identified as having severe mental illness, a figure the authors point out is higher than the most frequent major physical conditions in adolescence such as asthma.

It is widely agreed that the average age of onset for many mental health conditions occurs during mid to late adolescence (e.g., depression, anxiety, first-episode psychosis) [1]. Merikangas et al. [19] found that the median age of onset for anxiety was six years, 11 years for behavioural disorders, 13 years for depression and 15 years for substance use issues. According to the World Health Organisation [10], depression is the top cause of illness and disability among adolescents globally and suicide is the third-highest cause of death.

Since the 1940s, many major health conditions, such as major depressive disorders, have been diagnosed increasingly earlier with each subsequent generation [20]. For example, in the 1960s, the average age of onset for depression was 29 years. However, recent reports suggest that the initial diagnosis rates have fallen to 14.5 years [21]. The earlier identification of mental health concerns in young people is often speculated to be a result of increased public awareness. Government-funded Australian health campaigns (e.g., Act-Belong-Commit, Living is for Everyone) aim to increase the public's awareness of mental health and ill health in order to promote both early identification and help-seeking [22-23]. However, studies elsewhere (e.g., Canada, United Kingdom) have found only nominal clinical improvements in reducing the incident rate of mental ill health in young people as a result of public health promotion measures [24]. Thus, increased public awareness alone does not appear to address the issues for young people's mental health concerns, though it may well improve identification processes.

Implications of poor mental health in childhood

Mental health issues in childhood and adolescents not only result in impairments in social, emotional and behavioural domains, but may also lead to poor academic, education and employment outcomes, and disadvantage and ill health later in life [1, 25]. Children and young people with mental health and developmental delay are at greater risk of school failure and absenteeism, disruptive classroom behaviour, and suspensions and expulsions from school [26-27]. Long-term implications for these children include dependence on welfare, unemployment and involvement with the criminal system [1, 28-29]. Children's mental ill health may also negatively affect the functioning and adjustment of parents/guardians, siblings and other family members [30].

Accordingly, poor mental health in childhood and adolescence has consequences for fostering an economically productive, civically engaged, thriving and flourishing community [31]. Consequently, investing time, money and resources into school-based mental health and wellbeing programs leads to reductions in violence, drug use and mental health problems and less government funding required for incarceration and mental health services [32-33]. Belfield and colleagues [34] examined the benefit-cost ratio of several school-based, evidence-based wellbeing interventions and found that benefits outweighed the costs by a factor of 11:1, and with an average net present value per 100 participants of \$618,380, would "easily pass a benefit-cost test" (p. 46).

Promoting mental health and wellbeing in schools

There are many reasons why schools should be involved in promoting children's mental health and wellbeing. Most children attend school and most will spend a considerable amount of time at school,

with one estimate being that children spend up to 15,000 hours attending primary and secondary school [35]. Schools are thus more influential on children's development than any other social institution besides their family [13]. Schools are also a relatively non-stigmatising setting in which to identify and address children's mental health concerns. Additionally, children's developmental milestones, for example, academic goals as well as social competence, emotional regulation and moral development, are achieved (or not) within the context of schools.

In recent years there has been a strong emphasis on school-based prevention and early intervention programs. Overall, these aim to promote children's social and emotional competence and wellbeing, identify at-risk students, and impede the progression of child and adolescent mental illness. These efforts are supported through the inclusion of 'personal and social capabilities' as core aspects of the Australian National Curriculum [36]. Programs integrated into the curriculum are often delivered by teachers and these are examples of universal programs, or programs delivered to all students regardless of their mental health and learning needs. Universal programs, which are largely the focus of this review, can be distinguished from selective and targeted programs in schools that assist students who are either identified as being at risk of a mental illness and in need of group-based intervention (selective) or in need of individual support from a mental health worker (tertiary). For example, a resilience program may be delivered to all students in all classrooms in a school (universal), a group-based social and emotional skills program may be delivered to students who have been having difficulty making and maintaining friends (selective), and a tertiary program/intervention would be delivered to a student diagnosed with a neurodevelopmental disorder and with social-emotional issues at school.

The present review

There are many school-based mental health and wellbeing programs with varying levels of evidence regarding the impact and efficacy with children and youth. With so many programs, it is imperative that schools receive information that guides them to identify programs best suited to their needs and school context. This Evidence Check review seeks to provide important information to school leaders and staff by responding to the following questions:

Question 1: What school-based mental health prevention and early intervention programs have been shown to be most effective?

Question 2: For the programs identified in Question 1, what are the program characteristics that (1) drive efficacy, and (2) maintain sustainability

Method

Search strategy

An extensive review of the research literature was conducted on school-based mental health prevention and early intervention programs in early childhood, primary, secondary and specialist school settings. No restrictions were placed on the country of origin of the programs, however, programs were only included if they were accessible for implementation in Australian schools (and specifically NSW schools). Evidence was sourced from four peer-reviewed journal databases. The PRISMA Protocol, Cochrane Handbook, and JBI Coping Reviewer's Manual were used to inform the review.

This review used the following eligibility criteria, search terms and review process to identify and screen peer-reviewed journal articles to address the two research questions. Eligibility for papers to be included in this review was judged based on the following inclusion and exclusion criteria. Inclusion of studies was based on the PICO method of systematic review, including: P - population and problem of interest (e.g. children with anxiety); I – intervention type (e.g. school-based interventions); C – comparison and research method (e.g. randomised control trials); and O – outcomes (changed student social and emotional development). For this reason, both mental illnesses, such as depression, and outcomes of these illnesses, such as help-seeking, were used within the search criteria of this review.

Inclusion criteria

- Articles published in English
- Articles published in the past seven years (date range: 2013-2019)
- Prevention and early intervention programs delivered in education settings of early childhood, primary, secondary and/or specialist school settings
- Evaluation studies that investigated the outcomes from three months
- Evaluating intervention outcomes regarding:
 - reduced signs and symptoms in children or young people of depression, anxiety, conduct problems, oppositional defiant disorder, attention deficit hyperactivity disorder and eating disorders
 - improved student mental health literacy, pro-social behaviours and student coping behaviours, including help-seeking, resilience and protective behaviours of students
 - reduced student stigma, self-harm and suicidal behaviours of children and youth, and improved child and adolescent academic outcomes and improved school attendance

-
- articles reporting on programs targeting general wellbeing of students, as well as substance abuse, physical activity and social skills, were included if they had a substantive mental health and wellbeing component
 - Programs targeting students with mental health, mental illness and wellbeing concerns, and across special needs, disabled, culturally and linguistically diverse groups, and Aboriginal and Torres Strait Islander groups
 - Manualised programs and programs with a specific delivery method outline for school personnel
 - Programs delivered in class, as an extra-curricular activity, or online
 - Programs that are accessible (e.g. have a program website for schools to access the program) for implementation in schools in NSW.
 - Randomised and non-randomised experimental, quasi-experimental, longitudinal and observational studies

Exclusion criteria

- Interventions delivered in childcare settings (for children aged 0-3 years)
- Interventions delivered in tertiary settings (universities, adult education)
- Articles reporting on the intervention implemented in a clinical rather than school setting
- Qualitative studies and studies using a follow-up period of less than three months to evaluate the outcomes of programs (i.e. less than a three-month follow-up period to evaluate the outcomes of programs)
- Programs that could not be accessed by NSW schools to purchase and implement in their school. This was ascertained through contacting the developers of the program or through checking the presence of a program website.

Databases

Four peer-reviewed journal databases were searched in this review: The Cochrane Library, PsycINFO, Ovid MEDLINE(R) and Scopus. These databases were selected to capture all school mental health and wellbeing literature within peer-reviewed journals. However, it is possible that omission of some databases (e.g. education-based databases) may have missed one to two studies evaluating the programs identified within this review.

Search terms

The search terms and structure used in the literature search are presented in Table 1. Relevant search limits were adopted according to the options provided within each database, and included the application of parameters for publication dates, age ranges, article types (e.g. peer-reviewed articles), and search subject areas (e.g. *Child Health; Developmental, Psychosocial and Learning Problems*), where possible.

Table 1—Structure of Search Terms Applied in the Literature Review

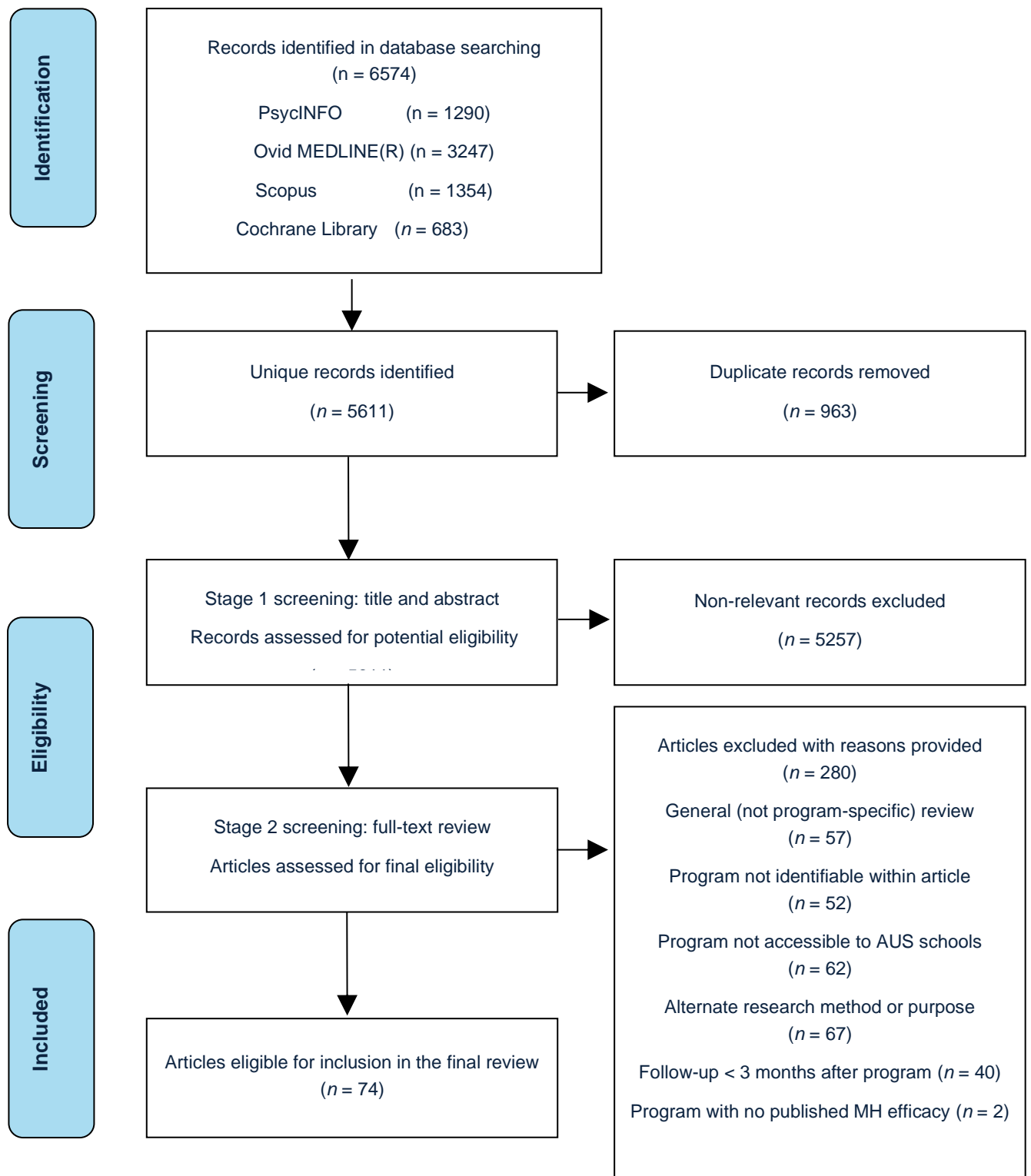
Search 1	prevention OR "early intervention" OR intervention OR program
Search 2	school OR "early childhood" OR educat* OR kindergarten OR reception OR "early learning"
Search 3	"mental health" OR wellbeing OR "well-being" OR psycho* OR "mental illness" OR "social emotional" OR social-emotional OR "mental health literacy" OR "help-seeking" OR "help seeking" OR "social emotional learning" OR "social-emotional learning" OR depression OR anxiety OR "conduct disorder" OR "oppositional defiant disorder" OR "attention deficit-hyperactivity disorder" OR "attention deficit hyperactivity disorder" OR self-harm OR self-injury OR suicide OR "eating disorder" OR "substance use" OR "social skills"
Search 4	evaluat* OR effect* OR trial OR comparison OR impact OR outcome OR efficacy OR effectiveness

Search process and outcomes

A pilot search was conducted in September 2019, with the final search conducted in early October 2019. Outcomes of the pilot search were used to refine the search strategy and terms used. Search terms were also tested against nine examples of programs of interest (i.e. Batyr, BounceBack!, Cool Kids, FRIENDS, Good Behaviour Game, SafeTALK, Second Step, Smiling Mind, Youth Aware of Mental Health), which were forwarded to the researchers by the NSW Department of Education. Accessibility of the programs for schools in NSW was ascertained by locating and checking the program website. In instances where a program website could not be found among the first 200 Google search results, the first author of the articles relevant to the program were contacted to ascertain the program's accessibility. The literature search process and outcomes are presented below and in Figure 2.

The systematic literature search returned 6574 published records across the four databases. Among the records returned were 963 duplicates. The 5611 unique records were screened for eligibility to be included in the review, with the previously outlined inclusion criteria applied. The first stage of screening involved checks of the article title and abstract, which identified 354 articles that were potentially eligible for inclusion. The second stage of screening involved assessing the full text of each article, with 74 articles deemed eligible for final inclusion. These articles, relating to 26 unique school-based mental health programs available for implementation in NSW schools, are discussed in this review.

Figure 2—Flowchart of the systematic literature review process and outcomes



Five of the nine programs forwarded by the NSW Department of Education were represented in the 74 articles included in the review: BounceBack!, FRIENDS, Good Behaviour Game, Second Step, Youth Aware of Mental Health. The four programs not represented in the original search (i.e. Batyr, Cool Kids, SafeTALK, Smiling Mind) were further investigated by the research team. The literature

search returned articles for both the Cool Kids program and SafeTALK program. Four articles were identified in the literature search relating to the Cool Kids program, however, two of the papers [37-38] did not meet the inclusion criteria of a ≥3-month post-test), another was a protocol article for Cool Kids CHILLED [39], and the most recent article [40] investigated the program in a clinical rather than a school setting. In the case of SafeTALK, one article was identified in the literature search [41]. This article did not meet the inclusion criteria of a ≥3-month post-test. The literature search did not return any articles relating to the Batyr program or Smiling Mind program.

Although these and other programs may not have been included in this review, a lack of evidence supporting these programs does not indicate that these and other programs are not effective or that other types of programs (i.e. online programs) are not appropriate for delivery in schools. A lack of evidence does not mean that they are ineffective but that more research is needed. However, this Evidence Check review focused on school-based programs showing a high degree of evidence, both in terms of changed student outcomes and sustainable benefits for schools. It is also important to note that while some programs (e.g. Batyr) have been evaluated, these programs and evaluations have been discussed in the grey literature and not in the peer-reviewed literature, and therefore were beyond the scope of this rapid review.

Data extraction and evidence rating

Data were extracted from each article according to the PICO categories (P = patient, problem or population explored, I = Intervention delivered, C = Comparison, control or comparator used in the evaluation, and O = Outcome(s) of the intervention). Additional categories of author name, date of publication, study methodology, duration of program and timing of follow-up assessments were also collated. Each article was rated on a quality of evidence from the National Health and Medical Research Council guidelines for levels of evidence [42; see Table 2]. Studies with a rating of Level I were identified as providing the strongest evidence and methodological rigor, while at the other end of the scale, a rating of Level IV indicated that a study demonstrated lesser experimental rigor and control. The methodology, findings and NHMRC level of evidence organised across each research article are included in Appendix A.

Table 2—NHMRC Levels of Evidence

Level of Evidence	Study Design
I	A systematic review of Level II studies
II	A randomised controlled trial
III-1	A pseudo-randomised controlled trial (i.e., alternate allocation or some other method)

III-2	A comparative study with concurrent controls (i.e. non-randomised experimental trials, cohort studies, case-control studies, interrupted time series studies with a control group)
III-3	A comparative study without concurrent controls (i.e. historical control study, two or more single-arm studies, interrupted time series studies without a parallel control group)
IV	Case series with either post-test or pre-test/post-test outcomes

* *Table replicated from:* National Health Medical Research Council levels of evidence and grades for recommendations for guideline developers [42]

Findings

The findings of this review have been organised according to the questions of this review:

Question 1: What school-based mental health prevention and early intervention programs have been shown to be most effective?

Question 2: For the programs identified in Question 1, what are the program characteristics that (1) drive efficacy, and (2) maintain sustainability

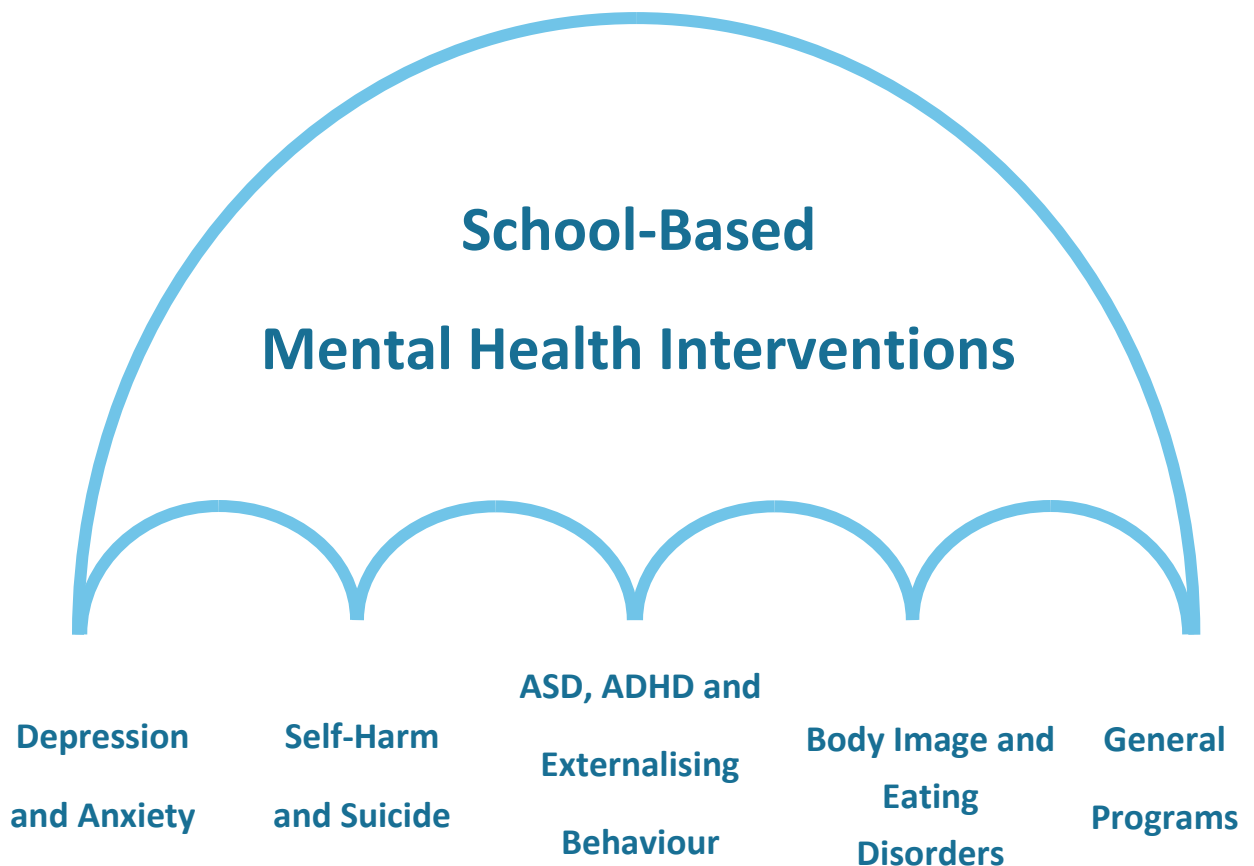
Question 1: What school-based mental health prevention and early intervention programs have been shown to be most effective?

To address Question, the programs, along with corresponding articles, have been grouped into five program types targeting the following issues:

- Anxiety and depression
- Self-injury and suicide
- Autism Spectrum Disorder, Attention Deficit Hyperactivity Disorder and conduct problems
- Body image problems and eating disorders
- General programs

These grouping were created based on the clustering of the evidence outcomes across programs (e.g. programs with outcomes targeting anxiety as well as depression) and also to increase the convenience of this information for NSW schools (see Figure 3). A table of programs, including the program websites, course content and how they can be accessed, is presented in Appendix B. The program websites listed in Appendix B were also used within this report to describe each program (see program descriptions below).

Figure 3—Umbrella of school-based mental health interventions available to NSW schools



Programs targeting anxiety and depression

Anxiety and depression are the two most common mental illnesses among children and adolescents [43]. While anxiety and sadness are emotions that are experienced daily among children and adolescents, anxiety disorders involve excessive fear and anxiety that is out of proportion with the risk or threat posed [44]. Examples of anxiety disorders common in childhood include Separation Anxiety Disorder, which involves an intense fear of losing or becoming separated from loved ones, and Selective Mutism, which is a fear of speaking and of social embarrassment at school or other places where children are expected to speak [44]. Other anxiety disorders of childhood and adolescence can include specific phobias such as the fear of an object, animal or situation, Social Anxiety Disorder, which is the fear of being negatively evaluated or scrutinised by others, and Generalised Anxiety Disorder, which is characterised by excessive fear and anxiety that applies broadly across a range of everyday activities [44]. Depressive disorders, which often co-occur with anxiety disorders in children and adolescents, refer to experiences of intense and unwavering sadness and irritable mood. Depressive disorders in children and adolescents can be observed through a range of signs and symptoms, including temper outbursts and becoming easily annoyed by others, diminished interest in activities and in spending time with friends, reduced concentration, tiredness and inattention, feelings of being worthless and a loss of self-esteem, and thoughts about suicide or attempts to die by suicide [44].

Adolescent Depression Awareness Program (ADAP)

The Adolescent Depression Awareness Program (ADAP) is designed to educate the school community, including parents, teachers and students, about depressive disorders and bipolar disorder. A key aim of the program is to change adolescents' stigma regarding mood disorders and seeking treatment. The ADAP was evaluated in a cohort of US high school students and found to improve depression literacy in comparison to students in the control group. However, no changes were observed in students' levels of depression-based stigma following the program [45-46]. The effects of this program for help-seeking among students were sustained four months after delivery of the program.

Aussie Optimism Programme-Positive Thinking Skills (AOP-PTS)

Designed and evaluated in Western Australia, the Aussie Optimism Programme-Positive Thinking Skills (AOP-PTS) program targets depression and anxiety in children and adolescents through the following modules: (1) understanding and coping with emotions and regulating social interactions with peers for grade 1-3 students; (2) developing greater awareness of emotions, thoughts and behaviours and the connections between these experiences in grade 4 students; (3) further developing the social and emotional awareness and decision-making competency of grade 5-6 students; (4) understanding the relationship between thoughts, feelings and behaviours, and then challenging the unhelpful thoughts that cause negative feelings and behaviours for students in grades 7-8; and (5) for parents and families of students aged 11 years and older, the program offers parenting approaches when students transition from primary school to secondary school.

Rooney and colleagues [47-48] and Johnstone and colleagues [49] reported a series of longitudinal outcomes of the Aussie Optimism program implemented in 22 West Australian primary schools. In these studies, the AOP-PTS program was found to have had an immediate post-intervention effect, reducing levels of depressive symptoms and parent-reported emotional difficulties of students. However, the effect on students' depressive symptoms was not maintained at a six-month follow-up [47]. At a 30-month follow-up, no differences were found between the intervention group and control group in relation to anxiety and depressive symptoms, although a difference was found for changes in parents' reports of student hyperactive behaviours [48]. Furthermore, no effect on depression or anxiety was found at subsequent follow-ups that occurred at 42 and 54 months [49]. No significant treatment effects were observed for students' attribution style or parent-reported pro-social behaviours compared to a control group at any follow-up time investigated across the three studies. In an unrelated trial also conducted in Western Australia, Cheng et al. [50] found the program to be an effective intervention for symptoms of depression and anxiety, benefiting both students with regular levels of vulnerability to mental health problems, as well as students living in vulnerable circumstances (i.e. parent with mental illness, adverse family situations), at a six-month follow-up.

FRIENDS, FRIENDS for Life, and Fun FRIENDS

FRIENDS, FRIENDS for Life, and Fun FRIENDS are a collection of social skills and resilience-based programs designed to increase pro-social behaviours, awareness of emotions, perceiving the thoughts and feelings of others, relaxation techniques, and cognitive behavioural techniques associating thoughts to feelings and actions. The three different versions of the program cater for a range of school year levels, from foundation year to secondary school. These programs have been delivered and evaluated in Australia, the UK, the Netherlands and Sweden for children aged 4-12 years. Iizuka et al. [51] found the FRIENDS program reduced children's symptoms of separation

anxiety at three months, but not at six months, following the intervention in students with low levels of emotional symptoms, conduct problems, hyperactivity/inattention, and peer relationship problems, and also reduced anxiety scores in students with high levels of these difficulties at the six-month follow-up. Lee et al. [52] found the program reduced symptoms of students' anxiety, as reported by their parents, and this effect was maintained at a three-year follow-up; however, in contrast, students did not self-report the same effect on anxiety in this study. Studies by Skryabina et al. [53] and Stallard et al. [54], reporting on the performance of the program in a UK cohort of primary school students participating in the PACES Study, concluded that levels of social anxiety and generalised anxiety had significantly reduced 12 months after the intervention, but only in the context of the program having been delivered by a health professional.

The FRIENDS For Life program was also shown to decrease anxiety and depression levels in the intervention compared to the control group and these effects were sustained at 12 months follow-up [55], though the evaluation by Ahlen et al. [56-57] found children with higher levels of depression benefitted from the program only in the 12 months following the program. Fun FRIENDS was investigated by Anticich et al. [58] in children aged 4-7 years. Anticich et al. [58] found at the 12-month follow-up improved student behaviour control, reduced student disruptive behaviours, improved student overall social and emotional competencies and parent-child relationships, and reduced parent distress.

Get Lost Mr Scary (GLMS)

Get Lost Mr Scary (*GLMS*) is a program-based cognitive behavioural therapy to foster primary school students' capacities to adaptively manage feelings of anxiety and worry. Ruocco et al. [59] evaluated the *GLMS* program with 5- to 7-year-old children in 23 Western Sydney schools. At a 12-month post-intervention assessment, compared with those from a comparison waitlist group, both parents and teachers in the intervention group reported their students/children exhibited fewer symptoms of anxiety and behavioural problems.

MoodGYM (MG)

Mood GYM (*MG*) is an online, self-directed anxiety and depression prevention and management program aimed at young people aged 16 years and older. It is based on a cognitive behavioural model of intervention, allowing users to engage in an interactive program to explore the link between their thoughts, feelings and actions, and how challenging depressive thoughts can lead to improved emotions and greater social engagement. Calear and colleagues [60] trialled the *MG* program in 30 schools Australia-wide with participating students aged 12-17. The study found students had significantly reduced depressive and anxious symptoms compared with a control group at six months. The intervention effect was stronger for students who demonstrated a high level of adherence to the exercises and quizzes making up the program compared with students whose adherence was low. Students enrolled in Year 9 and students who lived in rural locations were found to be most likely to adhere to the *MG* modules.

Penn Resiliency Program (PRP)

The Penn Resiliency Program (*PRP*) in the UK (and the adapted Op Volle Kracht program from the Netherlands) is associated with positive psychology and provides training for secondary school students about resilience, wellbeing, optimism and strategies to build on a student's personal strengths. Findings concerning the efficacy of the program are mixed. No significant treatment effects

were found between the control and intervention groups of students aged 11 to 16 years on depression symptoms at three months, 6 months, 12 months, 18 months and/or 24-25 months follow-up periods for the Op Volle Kracht program [61-64]. Furthermore, Challen et al. [65] in the UK found that the PRP demonstrated no significant effect on depression, anxiety or problematic behaviour between the experimental and control groups at either one or two years following the intervention. However, in contrast to these findings, the Op Volle Kracht program was observed by Wijnhoven et al. [66] to reduce students' symptoms of depression at six months post-intervention compared with a control group. The mixed results were also evident within findings of a single study. In the US, Brunwasser et al. [67] explored efficacy of the program for reducing students' depressive symptoms across three middle-years schools that were comparable on a range of demographic factors, but found the program was effective in two of the schools but not the third.

Resilient Families Program (RFP)

The Resilient Families Program (RFP) is aimed at equipping schools to assist parents in their relationships with their children. The broad premise of this program is that fostering healthy family relationships translates to better academic and wellbeing outcomes for students. In the only identified evaluation of the RFP within the context of this Evidence Check review, the Australian-based study with students aged about 12 by Singh et al. [68] reported no significant improvements between the intervention group and the non-intervention control group on social-emotional awareness and adolescent depression. However, family attendance at parenting education programs was associated with reduced student depressive symptoms at 12 and 24 months.

Resourceful Adolescent Program (RAP)

The Resourceful Adolescent Program (RAP) is focused on fostering individual, family and school-based protective factors to prevent depression in teenage students. The program includes modules for students, parents and teachers that can be implemented together or independently. In two Australian evaluations, Rose et al. [69] and Mackay et al. [70] found the program did not demonstrate efficacy for reducing student depression symptoms compared to a control group at 12 months following the program. However, when the program was delivered in conjunction with a friendship-building skills program (the Peer Interpersonal Relatedness program), RAP did result in significantly increased school satisfaction and improved social functioning compared with the control group [69]. Mackay and colleagues [70] showed a significant maintained effect at six months post intervention compared to the control condition on parents' reports of child and adolescent coping, but not of child depressive symptoms or general mental wellbeing. Stallard et al. [71] and Anderson et al. [72] found the RAP program had no effect on the mood of 12- to 16-year-old students at six months or 12 months following the intervention.

Programs targeting self-injury and suicide

Self-injury and suicide are common concerns among adolescents and in schools. Self-injury, or self-harm as it is otherwise referred to, among adolescents can be a precursor to suicidal behaviour, but self-injury can also occur in adolescents who are not experiencing suicidal thoughts or showing suicidal behaviours [73]. Behaviours common for adolescents who engage in self-injury include body cutting, burning, scratching or deliberate self-hitting (excluding body piercing, tattooing and self-hitting associated with developmental disorders) [74], and is often done by adolescents to regulate and

control their emotions, to punish themselves for perceived wrongdoings, or to reduce feeling of numbness or detachment from others and the world [75]. Young people often attempt to hide their self-injury from their parents and teachers, due to feelings of shame and guilt, and instead prefer to disclose their behaviours to friends or to use online self-injury related discussion forums [76-77]. Prevalence of adolescent self-injury is approximately 10-23% of adolescents [78-80], while suicide is one of the leading causes of death in adolescents [81]. Though females are more likely to think about suicide and to attempt to take their own lives through self-injury and overdosing on drugs compared with males, males die by suicide approximately three times more often than females because they tend to use more lethal methods [82].

The Youth Aware of Mental Health Program (YAM)

The Youth Aware of Mental Health (YAM) program is a program designed to improve the mental health literacy, resilience and collaborative problem-solving capacity of adolescents and reduce depression, anxiety, suicidal thoughts and suicide attempts among adolescents aged 14-16. The Youth Aware of Mental Health Program was compared with adolescents in 10 European Union countries against two alternative suicide prevention programs. No significant differences were found between the intervention groups and the control groups at the three-month follow-up, however at the 12-month follow-up, the YAM program was shown to significantly reduce incidents of suicide attempts and severity of suicidal thoughts compared with the control group [83].

Signs of Suicide (SoS)

The Signs of Suicide (SoS) program is designed to educate students and teachers about adolescent suicide. The components of the SoS program are to: (1) increase teacher and student knowledge about the warning signs of suicide and improve attitudes towards depression; (2) increase help-seeking among adolescents for peers, or themselves, for suicide; (3) reduce the stigma associated with mental illness and improve attitudes towards seeking help and professional treatment; (4) provide education to parents and teachers as gatekeepers to providing support for suicidal adolescents; and (5) encourage school and community collaboration to support student mental health. Two outcome evaluations in the US of the SoS prevention initiative for early or middle adolescent students found the program reduced rates of suicidal behaviour and thoughts, improved student help-seeking for themselves and peers for suicidal behaviour, and improved student knowledge and attitudes towards depression and suicide following the intervention [84-85]. Changes in help-seeking attitudes of students were found only in the second of Schilling et al.'s evaluations [85]. Additionally, changes were observed in this study regarding students with a history of suicide attempts as they were significantly less likely to report planning suicide at the three-month follow up compared to the lower-risk adolescent group.

Programs targeting Autism Spectrum Disorder, Attention Deficit Hyperactivity Disorder and conduct problems

Students with neurodevelopmental disorders – including those with Autism Spectrum Disorder (ASD), those with Attention Deficit Hyperactivity Disorder (ADHD), and, for some, co-occurring conduct problems – have difficulty regulating their emotions and behaviours in the classroom and school environment. ASD is characterised by defects in social-emotional exchange, nonverbal communication, and development and understanding of relationships, as well as restricted interests

and behaviours, adherence to routines, and/or sensory hypo- and hypersensitivity [44]. These symptoms manifest at school for children with ASD as distress during transitions, withdrawal from peers and difficulty establishing relationships, and challenges regulating negative affect. Children with high-functioning ASD show the same symptoms of distress to changes in routine, poor emotional-social reciprocity and sensory processing impairments, but to a much milder degree than children diagnosed with moderate to severe ASD [44]. As another neurodevelopmental disorder, Attention Deficit Hyperactivity Disorder (ADHD) has its onset in childhood and is characterised by developmental deficits in social relationships, academic functioning and learning, and executive functions of control of impulses, regulation of emotions, and engagement in behaviours appropriate for learning [44]. Signs and symptoms of ADHD are clustered into three types: inattention (e.g. poor sustained and alternating attention, avoidance of school tasks and poor organisation skills); hyperactivity and impulsive type (e.g. constant fiddling and movement, constant talking, and interrupting and intruding on others); and combined inattention and hyperactivity presentation involving a combination of the first two types above [44].

Challenging Horizons Program (CHP)

The Challenging Horizons Program (CHP) is an after-school or consultation-based program where schools engage students in an after-school program to improve their organisation, social skills and other academic behaviours, or where consultation is provided to educators to work with students regarding their executive functioning. In the US, the program has been evaluated in studies by Evans et al. [86], Langberg et al. [87], and Shultz et al. [88] and found to improve adolescent executive functions of organisation and time management, homework completion and attentive behaviour, reduce disruptive behaviours and levels of anxiety, and improve grades relative to the control conditions at six-month follow-up. Strong school mental health provider/adolescent working alliance, as rated from the adolescent's perspective, and lower levels of parenting stress and parent-adolescent conflict consistently predicted an increased likelihood of positive outcomes [87].

Good Behaviour Game (GBG)

The Good Behaviour Game (GBG) program is designed to reduce disruptive, off-task and defiant behaviours in the classroom, and to improve overall pro-social behaviours of students through assigning students to teams and assigning awards to teams for good behaviour, and giving rewards to teams that exhibit the lowest number of inappropriate behaviours. Variations in the delivery of the program have also been reported. As a behaviour management and regulation program, the GBG program has been evaluated extensively in the past [89-90] and more recently by Leflot et al. [91]. In this study, GBG was shown to reduce aggressive behaviour and sustain changes in aggressive behaviour in children with a mean age of seven years.

Secret Agent Society (SASoc)

Secret Agent Society is a computer-based social thinking intervention designed to educate students with ASD, ADHD and conduct problems, as well as students with anxiety disorders, about how to notice, observe and respond to the emotions of others, to notice and respond to how their behaviour can affect themselves and other people, how to communicate and work co-operatively with others, develop friendships and notice bullying with others, and regulate their emotions in social situations and during transitions. In Australia, Einfeld and colleagues [92] investigated the program among children aged 8-14 and found an improvement in parent and teacher-reported social skills and

emotional regulation, and children's social problem solving, at the follow up 12 months after the program, compared to the control group.

Programs targeting body image problems and eating disorders

Eating disorder refers to the persistent disturbance of eating and maladaptive behaviours to control weight and body appearance. Eating disorders include Anorexia Nervosa, Bulimia Nervosa and other food-related disorders from eating non-edible substances, to avoiding certain foods, and eating excessive amounts of food [44]. Anorexia Nervosa affects approximately 1% of adolescents, with females making up 90% of all cases [93]. The signs of Anorexia Nervosa include restriction of food intake and rituals or rules around food intake, significantly low body weight or failure to gain weight expected for height and age, fear of gaining weight and of becoming overweight, and disturbance and persistent checking in the way that they perceive and evaluate their own body weight and shape [44]. Bulimia Nervosa is characterised by ongoing episodes of excessive eating, followed by self-induced vomiting, use of laxatives, diuretics and other medications, restrictive food intake and excessive exercise to control weight gain [44]. Eating disorders can severely affect the physical and mental health of sufferers, from being severely overweight to severely underweight, with adolescents experiencing eating disorders more likely to experience heightened risk of suicide, organ failure and heart abnormalities, hypotension, gastrointestinal problems, delayed onset of puberty, bone density issues, thyroid abnormalities, and risk of early death due to malnutrition [94]. Three programs were identified to target body image and eating disorders in children and youth. These programs are the Body Image in the Primary School (BIPS) program evaluated in the UK [95], the Happy Being Me Co-educational (HBMC) program investigated in Australia [96], and the Media Smart (MS) intervention explored by Wilksch and colleagues in Australia [97-99].

Body Image in the Primary School (BIPS)

Halliwell et al. [95] conducted a study of the BIPS program with an intervention group and control group and found that after the program and three months post-intervention, females in the intervention group reported greater body-related self-esteem compared to the control group at three months post-intervention. However, in contrast, males in the intervention group internalised media ideals at greater levels compared to the control group at this time point.

Happy Being Me Co-educational program (HBMC)

The HBMC program was found to reduce student body dissatisfaction and psychological risk factors, including self-esteem and internalisation of media ideals, in cohorts of students from both single-sex classes and co-educational classes at a six-month follow-up [96].

Media Smart (MS)

The MS intervention has been evaluated in a series of studies by Wilksch and Wade [97], Wilksch et al. [98] and Wilksch [99]. The program was found to have reduced risk factors associated with eating disorders in adolescents aged approximately 13 years, including concerns about body shape and weight, internalising media images and concern with dieting. However, these results varied across male and female students and Wilksch [99] found an effect on peer weight-related teasing only among female students compared to students in the control groups. Students scored significantly lower on shape and weight concern at 12 months and 2.5-year follow-up periods.

General programs

This group of programs includes school-based interventions implemented to promote mental health literacy and personal wellbeing more generally.

BounceBack! (BB!)

BounceBack! is an evidence-based curriculum for students who have been exposed to adversity and traumatic experiences, focusing on cognitive behaviour therapy and the connection between thoughts, feelings and behaviours. The efficacy of BounceBack! has been investigated in two Melbourne primary schools [100]. Across these schools, assessment at three-month post-intervention demonstrated that the program recorded positive effects on grade 3 and 4 students' resilience, optimism and self-efficacy [100].

Bounce Back Program

In 12 US elementary (primary) schools, parent- and child-reported symptoms of post-traumatic stress, depression and anxiety symptoms [101], and adaptive coping [102] improved following delivery of the Bounce Back Program. Furthermore, student gains were found to be significantly better in comparison to outcomes for students in waitlist control groups.

CLIMATE Schools (CLIMATE)

CLIMATE schools is an online prevention program primarily targeted at reducing drug and alcohol use and creating healthy attitudes towards alcohol. CLIMATE Schools in Australia was reported to reduce truancy, anxiety and depressive symptoms, and moral and pro-social conduct of students (referred to as *moral disengagement*) in secondary school students compared to a control group 12 months following the program [103].

Creating Opportunities for Personal Empowerment (COPE; COPE TEEN)

COPE is a 15-session manualised program based on cognitive behaviour therapy for 12 to 18-year-olds that can be delivered to individuals, groups or classes. The program includes topics of healthy nutrition, physical activity and coping skills. Since 2013, the efficacy of the COPE program has been investigated in a sequence of studies by Melnyk and colleagues [104-105], and in a Turkish adaption of the program by Ardic and Erdogan [106]. Melnyk et al.'s 2013 study [104] did not find the program significantly reduced students' levels of anxiety or depression in comparison to an active control group receiving an alternative intervention program when followed-up at six months. However, the next follow-up at 12 months produced a different result, finding a reduction in students' levels of depression symptoms [105]. In contrast, Ardic and Erdogan's [106] results did not mirror Melnyk et al.'s 12-month depression finding. Ardic and Erdogan [106] did not find significant differences in depression levels between the treatment and control group. However, it did find a positive effect on students' anxiety levels, post 12 months. The program was found to have additional physical health benefits for students, including promoting health knowledge and behaviours, across the three studies.

HeadStrong 2.0 (HS2)

HeadStrong 2.0 is a free resource aimed at Year 9 and 10 developed by the Black Dog Institute. Students are taught about mental health, wellbeing, resilience and help-seeking through five modules that are linked to the Health and Physical Education curriculum. In the single available study on the

efficacy of the HS2 program, Perry et al. [107] investigated six-month post-intervention outcomes in a cohort of secondary school students across 10 non-government sector schools in Central West NSW. Results indicated that the program was effective, with improvements observed in students' mental health literacy and levels of stigma. The program outperformed the regular health education program in place at the schools that it was evaluated against. The benefits of the program to students were limited to these outcomes, however, and no impact of the program was found for students' attitudes towards seeking help for mental health concerns, or their levels of psychological distress and suicide ideation, in comparison with the measurements of these factors in the cohort prior to commencing the program.

Learning 2 BREATHE (L2B)

The Learning 2 BREATHE program (L2B) is a mindfulness-based curriculum for adolescents. The program aims to improve student mental health and emotional coping by becoming mindful, i.e. accepting and non-judgmental towards daily emotions and changes in emotional experiences and bodily sensations. The curriculum is given to students in classroom and group settings and is delivered across either 6, 12, or 18 sessions by classroom teachers. In the US, the L2B program reduced students' behavioural problems, anxious and depressive problems, and emotional expression and coping, as reported by the parent or child involved in the intervention at a three-month follow-up compared to the control group [108].

Positive Action (PA)

Positive Action is a flexible program containing over 2000 different 15-minute lessons for students from Kindergarten to Year 12. The lessons are based around six core concepts: self-concept, positive actions for your mind and body, managing yourself responsibly, treating others the way you like to be treated, telling yourself the truth, and improving yourself continually. The program also includes school climate, family, counsellor and community components. Positive Action has been the subject of a program of research in a large cohort of Chicago high school students over a six-year period. Key longitudinal findings from this research include that, compared with a control group, students who had participated in the program experienced lower levels of anxiety and depressive symptoms and fewer behavioural problems [109] and risky behaviours [110]. Further benefits included better academic engagement and outcomes [111], greater social-emotional learning [112], more health-promoting behaviours [113], and greater life satisfaction [114]. In a different cohort of US students, it was found that after 36 months in the Positive Action program, students had better self-esteem in comparison to a control group, however, the program did not result in significant reductions in aggressive behaviour or internalising symptoms [115-116].

Promoting Alternative Thinking Strategies (PATHS)

The PATHS program is aimed at primary school children and aims to promote social and emotional competencies and reduce aggression. The sessions last for 30 minutes and may be delivered two to three times a week throughout the year. The efficacy of the PATHS program has received extensive research attention, having been evaluated in eight studies across Europe, the US and Israel. In Fishbein et al.'s study [117], teachers reported that the behaviour of students in the PATHS program had improved significantly at six months post-intervention. Shoshani and Steinmetz [118] reported that, in comparison to a control group, the program resulted in positive mental health outcomes at 12 months for both low-risk and high-risk students, which included decreases in distress, anxiety and

depression coupled with improvements in self-esteem and optimism. The study from Novak et al., [119] did not replicate Shoshani and Steinmetz's overall results [118], finding instead that the efficacy of the program was limited only to low-risk students. Several studies, including Crean and Johnson [120], Schonfield [121], Averdijk et al. [122], Humphrey et al. [15] and Panayiotou et al. [123], have investigated outcomes of the program over many years. Benefits for students across two years of the program were found to be typically small but have included increases in teacher-rated social-emotional competence, and emotional and psychological wellbeing [15; 123]. After three years of the program, reductions in children's aggression and behavioural problems were reported by teachers [120]. Outcomes observed beyond four years included better academic achievement in literacy and maths at some primary school grade levels only [121], but otherwise negligible [122].

Second Step (SS)

Second Step is a social and emotional learning program for children in primary to middle school. Outcomes of the Second Step program for students have been explored in several recent studies in the US, however, there is little evidence of the program's efficacy. In a series of studies conducted in primary schools, Espalage and colleagues [124-126] investigated behavioural outcomes of the program at 12 months, 24 months and 36 months. Compared with a control group, students in the program made small improvements in a limited set of reported problematic behaviours directed at peers, including aggression and bullying, at both 12- and 24-month assessments, however, no significant effects for any measured behaviour was evident by the time of a 36-month follow-up. A second study series conducted by Low and colleagues [127-128] found similar modest improvements related to behaviour at 12 and 24 months, including emotional regulation, hyperactivity and social-emotional learning. Both studies concluded that the program was most effective for those students who exhibited deficits in social skills, suggesting the program may be most appropriate as a targeted intervention. Cook et al.'s study [129] did not find the program provided any additional benefits for student behaviour after 12 months compared with a control group. Similarly, Upshur et al. [130] found the program did not have a significant positive effect on students' social or emotional skills, but did find that the program fostered students' executive functioning development.

Teen Mental Health First Aid (TMHFA)

The Teen Mental Health First Aid course aims to teach Year 9 and 10 students how to provide mental health first aid and support to their peers in three classroom-based sessions. In a pilot trial of the program, Hart et al. [131] investigated three-month post-intervention efficacy across a large sample of students attending four secondary schools in the greater Melbourne region. The program led to improvements in students' mental health literacy, a reduction in stigmatising attitudes, and increased confidence in both seeking assistance for mental health concerns and helping peers with mental health concerns. However, the preliminary trial of the program did not include a comparison group against which to assess these improvements, and a high rate of student drop-out from the study was noted.

Regarding programs for targeting school belonging and mindfulness

Some of the reviewed programs include fostering students' sense of school belonging among their aims and outcomes (e.g. PATHS, Resilient Families Program, Resourceful Adolescent Program, Second Step). However, the diverse conceptualisations and operational definitions of school

belonging found in the literature (for instance, the concept has variously been described in reference to the classroom, family, peer-group) makes it difficult to evaluate and compare programs for enhancing students' sense of school belonging. Accordingly, evaluating programs that seek to increase school belonging was beyond the scope of this Evidence Check review. Furthermore, it is apparent within the results of this review that, at present, there is a lack of research directly reporting on the effectiveness of school-based mental health interventions primarily in terms of school belonging outcomes. A lack of research is also apparent for school-based mindfulness interventions, with only one of the above evaluated programs being a mindfulness-based intervention (i.e. Learning 2 BREATHE).

Considerations when selecting school mental health programs

As mentioned previously, it is important to recognise that a lack of evidence about the effectiveness of a program does not indicate that the program is ineffective. Rather, programs can be effective and built on evidence-based psychological practices (such as cognitive behavioural therapy or mindfulness) – known as evidence-informed programs – but currently lack a supporting body of research to assert the program's effectiveness and sustainability in schools. The lack of an evidence base is, however, an important factor to keep in mind when considering programs that may have been designed for delivery in a different context (i.e. online programs) or for a different population (i.e. adult-based interventions) rather than for school-based delivery.

Several guidelines have been developed as resources to help schools and school leaders select mental health programs (including those without an evidence base) to best meet the needs of their students:

- Early Intervention Foundation guidebook: <http://guidebook.eif.org.uk/>
- KidsMatter: Australian Primary Schools Mental Health Initiative: <https://www.kidsmatter.edu.au/primary/resources-for-schools/other-resources/programs-guide/programs>
- The CASEL Guide (2012): <https://casel.org/guide/>
- Blueprints for Healthy Youth Development website: <https://www.blueprintsprograms.org/>

Reupert [13; pp.106-108] also detailed considerations for schools and staff when selecting a social and emotional program for their school. These guidelines included consideration of the setting, features of the program or approach, and program content, which are presented below:

The setting:

- How well known are the needs and strengths of this particular setting (e.g. students' mental health or staff capacity)? Is this a shared understanding of these needs and strengths among stakeholders?
- What is already in place? How is that program received by staff, students and the community? What remaining gaps are there?
- What is the commitment of staff to work in this area? What is their readiness to change or to learn something new? How much time and effort are they prepared to provide to any new initiative?
- Who (or what team) will drive the initiative and be responsible for its implementation? What support is there for these individuals (time and money)?

Features of the program or approach:

- Is the program based on sound theory?
- What are the goals of the program? Do these goals match the needs and strengths of the setting? Target group? Scope?
- Does the program have a rigorous evidence base?
- Has the program been used in similar school environments and communities? What was the impact? With whom does it appear to be most/least effective?
- What is the effect of the program on academic success? On wellbeing?
- How much will it cost? In money, time and commitment?
- Are there specialised training requirements? Has the professional development for staff been evaluated? Is there any long term, ongoing professional development required/provided?
- Does the program easily integrate with existing school practices?
- Will school staff be able to implement it as recommended or will modifications in time and resourcing be an issue?
- Does the program involve family and community partnerships?
- What are the implications of the program on school policy?
- What are the implications of the program for discipline and classroom management procedures?
- How sustainable is the program in this particular setting within this particular community?
- How will the school monitor and evaluate the impact of the program? Does the program include evaluation tools and suggestions as part of the approach? What will the program be evaluated against? Is there a benchmark that it can be compared to? When will the program be evaluated, why whom and how often?

Program content:

- Does the program explicitly include the teaching of various social and emotional skills? For all students? For at-risk students? Does the program fit the school profile? What efforts are made to generalise learnings outside of the classroom into the community, playgrounds and at home?
- Does the program consider school climate, including relationships between and within students, teachers, caregivers and others in the community?
- Are engaging and effective teaching and learning practices incorporated, for example co-operative group work and feedback processes?
- Is the program developmentally and culturally inclusive?

Question 2: For the programs identified in Question 1, what are the program characteristics that (1) drive efficacy, and (2) maintain sustainability?

A secondary review of the literature revealed core characteristics that drive efficacy and sustainability of the various evidence-based mental health and wellbeing programs employed in schools. To address this question, we identified programs that had been evaluated at a follow-up of 12 months and/or beyond and that had been found to be effective at these longer-term assessment time-points. Nine programs (COPE; FRIENDS; Good Behaviour Game; Media Smart; Positive Action; PATHS;

Second Step; Secret Agent Society; Youth Aware of Mental Health) were identified through this process and the characteristics of these efficacious and sustainable programs are discussed below.

Efficacy

Program efficacy is defined as “the performance of an intervention under ideal and controlled circumstances” [132]. Efficacy differs from program effectiveness which refers to how a program may perform in a real-world context [132]. It is likely that schools should consider programs that are both efficacious and effective, however, evaluating and controlling for both efficacy and effectiveness in an empirical sense is difficult. School leaders and staff who evaluate programs should use professional judgment when choosing to implement a program in their school. The following list comprises characteristics found in programs and studies identified in the current review that are considered to be efficacious (according to the selection criteria). Accordingly, this list provides a guide for schools when choosing efficacious and effective programs for their specific community.

Clearly defined aims

Having clearly defined aims was a characteristic of efficacious programs in this review. Though the 26 programs identified in this review presented diverse aims and objectives, the longer-term efficacious programs that had specific and clear aims, such as the well-established PATHS and Positive Action programs, allowed school leaders and staff to match programs to the needs and strengths of their particular student and community body, and helped schools to monitor and evaluate progress. Clear aims have the potential to implement expected actions, as well as outcomes, in ways that are easily communicated and commonly understood.

Aims of the programs identified in the review included:

- Providing safe and supportive school environments where children can explore concepts related to mental wellness free of stigma and educational exclusion. For example, the Youth Aware of Mental Health Program is primarily focused on promoting an environment where students are considered the experts on youth mental health, have a space where they can feel listened to by others, and can work together to develop practical approaches to responding to peers experiencing emotional difficulties.
- The promotion of social and emotional competencies, including adaptive coping and resilience, in addition to reducing the signs and symptoms of mental ill health. The FRIENDS Good Behaviour Game, PATHS and Second Step programs are all primarily based on the Collaborative for Academic, Social and Emotional Learning (CASEL) framework [133] and are aimed at aiding social-emotional learning to foster students’ acquisition of skills in understanding, managing and expressing emotions. Some programs with longer term efficacy had a structure underpinned by principles of cognitive behavioural therapy (CBT). Programs that identify with this psychotherapeutic approach include COPE, FRIENDS and Media Smart.
- Closely related to the above points is the adoption of strength-based approaches that focus on students’ existing abilities and resources for promoting good mental health, rather than only attending to areas of need and impairment.

Congruency with needs and context

Programs with the best outcomes are flexible to the context in which they will be delivered, as well as the target group they will be delivered to. These programs have a clearly identified audience and provided objective and measurable outcomes related to program aims. Typically, these programs ensure that schools identified their particular needs (e.g., completed a needs analysis) or took into consideration the need for schools to conduct such an analysis. PATHS, Positive Action and Second Step programs are each examples of programs with kits offering a range of lessons that can be selected from and matched to align with specific outcomes identified by a school or teacher.

Program universality

The most efficacious programs considered the universal and broad school context, including classrooms, the school environment and community. For instance, the Positive Action program incorporates school climate, family, counsellor and community components that can be selected from and implemented flexibly by schools to suit the needs of their students. The PATHS program also includes a component to engage parents in the process of fostering students' social and emotional learning. Likewise, the Second Step program includes staff training, family materials, and principal and administrator resources.

The efficacious programs in this review generally included age-specific variations of curriculum content that can potentially be delivered in sequence. An advantage of programs that have been developed for systematic implementation across multiple age groups is the potential for a longer-term continuity of curriculum to be delivered to students. This advantage is demonstrated in the articles reporting on outcomes of the longitudinal studies of the Positive Action program [109-116] where incremental benefits for students progressing through year levels of the program are evident across domains of mental health and wellbeing, behaviour and academic achievement. FRIENDS, Good Behaviour Game, PATHS and Second Step each offer versions of their programs suitable for each primary school year level; the COPE suite of programs is suitable for all secondary school year levels.

Sustainability

Sustainability presents important considerations for schools when deciding which programs to implement. Though a program may present with strong empirical evidence and efficacy, if considerations are not made towards sustainability it is unlikely any program will be effective in the long-term. Long-term sustainability may be a product of fiscal availability and resources. That is, is there financial viability in costs associated with running the program, including staff resources? Also, there are other considerations such as perceived value for key stakeholders, such as students and teachers, especially if they are involved in the delivery of the program. The quality and usability of the program content is also an important consideration when planning for sustainability. Characteristics identified in the present review that support sustainable programs include:

- **Staff training and resources:** Staff training and professional development is an important consideration for sustainability, especially in respect to attitudes towards implementation and utility of the program. In addition to this, useability and accessibility of the program is important. What resources are required? Are they readily available? Do they take time and effort to prepare?
- **Implementation considerations:** Who will implement the program and when? How will implementation be sustained in the future? Problems with implementation can arise when too

much focus is on the program and not the supporting context, staff are not well prepared and resourced, and there is a lack of student engagement [134].

- Evaluation and monitoring considerations: A characteristic of sustainable programs considered how schools could measure outcomes and track progress.
- Future planning: Programs that included planning for future meetings, follow-up and reflection provided a strong foundation for sustainability.

Analysis of the gaps in the literature

This review identified several programs suitable for implementation in schools based on, firstly, their demonstrated efficacy in improving student mental health and wellbeing, and secondly, the demonstrated sustainability of these improvements at least three months post-program. However, this criterion of requiring at least three months' demonstrated sustainability restricted the number of programs that met eligibility for inclusion in this review. This outcome highlights the lack of literature evidencing the longer-term outcomes of many school-based mental health programs currently available. Of the 354 studies identified for full-text review, only 74 were eventually included in this report based on the following exclusionary factors:

- Review articles that were not specific to a program
- The program name or specifics were not identified in the article
- The program was not accessible to implement in Australian schools
- The evaluation of the program was not an experimental design
- The program was not evaluated at or beyond three months after delivery of the program
- The program did not demonstrate mental health outcomes

The data generated by this review showed that despite the presence of many school-based social and emotional programs, schools may find it difficult to select programs, due to program descriptions that are vague and a lack of rigorous evaluation data. The lack of mindfulness-based evaluations included in this review is clearly a limitation of the current evidence available to schools. The strength of this review, however, is that programs included in this review all showed strongest evidence and methodological rigor due to most studies being rated as a level 2 or higher based on the NHMRC ratings of the evidence.

In addition to the limited evidence base, or a lack of an evidence base, for some of the identified programs, interventions targeting other mental health and developmental concerns such as Oppositional Defiant Disorder, student self-injury and reduced student mental illness stigma, as well as evaluations with early childhood and specialist school students, and students of Aboriginal and Torres Strait Islander descent, were not represented in the current review. It is widely reported that less than 25% of adolescents will seek support if required [9; 135], and when they do seek help, the availability of specialised age-appropriate assistance is limited [136]. The reluctance of young people to seek help signifies a need for schools to develop processes to identify young people who need further assistance. School staff with knowledge of mental health issues and referral processes are in an opportune position to provide early identification and prevent further concerns. There is clearly a need for these types of programs to be investigated and to address the continued challenges and educational barriers of students with mental illness and impaired wellbeing across demographic, cultural and economic circumstances.

Conclusion

This review identified 26 programs for implementation in Australian schools based on their availability, demonstrated sustainability, and efficacy in promoting students' social and emotional development and wellbeing. Programs were identified that made a difference across student mental health and wellbeing, including lowering rates of anxiety and depressive symptoms, improving student self-esteem and body acceptance, reduce suicidal thoughts and behaviours, and improve students' social skills and capacity to cope with adversity and challenges. Programs identified as efficacious had clearly defined aims and objectives, made clear links between the program and the needs of the students and school community, and were of a universal nature, which considered the importance of teacher training, support for parents, as well as intervening with students. Sustainability was achieved through a provision of appropriate staff training and resources, being clear about staff roles and responsibilities (including who was responsible for delivering as well as monitoring the program), guidelines for schools about how they might monitor student outcomes, and programs that encouraged ongoing staff follow-up and consultation about the program delivery and content in the school. Overall, the programs identified in this review offer Australian schools an opportunity to target their resources and to select programs showing a strong evidence base in the short term as well as sustained outcomes for students.

References

- 1 Bowman S, McKinstry C, McGorry P. Youth mental ill health and secondary school completion in Australia: Time to act. *Early Intervention Psychiatry*. 2017 Aug; 11(4): 277-89.
- 2 Kinchin I, Doran C. The cost of youth suicide in Australia. *International Journal of Environmental Research and Public Health*. 2018 Apr; 15(4): 672.
- 3 Allen KA, McKenzie VL. Adolescent mental health in an Australian context and future interventions. *International Journal of Mental Health*. 2015 Jan 2; 44(1-2): 80-93.
- 4 DeSocio J, Hootman J. Children's mental health and school success. *The Journal of School Nursing*. 2004 Aug; 20(4): 189-96.
- 5 Waters L, Sun J, Rusk R, Cotton A, Arch A. Positive education. Wellbeing, recovery and mental health. 2017 Feb 1: 245-64.
- 6 White MA, Kern ML. Positive education: Learning and teaching for wellbeing and academic mastery. *International Journal of Wellbeing*. 2018 Jul 12; 8(1).
- 7 Roffey S. Enhancing connectedness in Australian children and young people. *Asian Journal of Counselling*. 2011; 18(1): 15-39.
- 8 Schmied V, Tully L. Effective strategies and interventions for adolescents in a child protection context: Literature review. 2009.
- 9 Caelear AL, Banfield M, Batterham PJ, Morse AR, Forbes O, Carron-Arthur B, Fisk M. Silence is deadly: A cluster-randomised controlled trial of a mental health help-seeking intervention for young men. *BMC Public Health*. 2017 Dec; 17(1): 834.
- 10 World Health Organisation (WHO). Adolescents: Health risks and solutions. Geneva: WHO; 2018. Available from: <https://www.who.int/news-room/fact-sheets/detail/adolescents-health-risks-and-solutions>
- 11 Jeste DV, Palmer BW, Rettew DC, Boardman S. Positive psychiatry: Its time has come. *Journal of Clinical Psychiatry*. 2015 Jun; 76(6): 675.
- 12 Glozier N. Mental ill health and fitness for work. *Occupational and Environmental Medicine*. 2002 Oct 1; 59(10): 714-20.
- 13 Reupert A. Mental health and academic learning in schools: Approaches for facilitating the wellbeing of children and young people. 2019.
- 14 Suldo SM, Shaffer EJ. Looking beyond psychopathology: The dual-factor model of mental health in youth. *School Psychology Review*. 2008 Mar 1; 37(1).
- 15 Humphrey N, Barlow A, Wigelsworth M, Lendrum A, Pert K, Joyce C, Stephens E, Wo L, Squires G, Woods K, Calam R. A cluster randomized controlled trial of the Promoting Alternative Thinking Strategies (PATHS) curriculum. *Journal of School Psychology*. 2016 Oct 1; 58: 73-89.
- 16 Sawyer MG, Whitites L, Rey JM, Hazell PL, Graetz BW, Baghurst P. Health-related quality of life of children and adolescents with mental disorders. *Journal of the American Academy of Child and Adolescent Psychiatry*. 2002 May 1; 41(5): 530-7.
- 17 Australian Bureau of Statistics (ABS). 2007 National survey of mental health and wellbeing: Summary of results. Canberra, Australia: ABS.
- 18 Lawrence D, Johnson S, Hafekost J, Boterhoven de Haan K, Sawyer M, Ainley J, Zubrick SR. The mental health of children and adolescents: Report on the second Australian child and adolescent survey of mental health and wellbeing. 2015.
- 19 Merikangas KR, He JP, Burstein M, Swanson SA, Avenevoli S, Cui L, Benjet C, Georgiades K, Swendsen J. Lifetime prevalence of mental disorders in US adolescents: Results from the

-
- National Comorbidity Survey Replication—Adolescent Supplement (NCS-A). *Journal of the American Academy of Child and Adolescent Psychiatry*. 2010 Oct 1; 49(10): 980-9.
- 20 Klerman GL, Weissman MM. Increasing rates of depression. *JAMA*. 1989 Apr 21; 261(15): 2229-35.
 - 21 Seligman ME. *Flourish: A visionary new understanding of happiness and well-being*. Simon and Schuster; 2012 Feb 7.
 - 22 Anwar-McHenry J, Donovan RJ, Jalleh G, Laws A. Impact evaluation of the Act-Belong-Commit mental health promotion campaign. *Journal of Public Mental Health*. 2012 Nov 30; 11(4): 186-94.
 - 23 Donovan RJ. The role for marketing in public health change programs. *Australian Review of Public Affairs*. 2011 Jul; 10(1): 23-40.
 - 24 Kendrick T, Stevens L, Bryant A, Goddard J, Stevens A, Raftery J, Thompson C. Hampshire depression project: Changes in the process of care and cost consequences. *British Journal of General Practice*. 2001 Nov 1; 51(472): 911-3.
 - 25 Leach LS, Butterworth P. The effect of early onset common mental disorders on educational attainment in Australia. *Psychiatry Research*. 2012 Aug 30; 199(1): 51-7.
 - 26 Panayiotou M, Humphrey N. Mental health difficulties and academic attainment: Evidence for gender-specific developmental cascades in middle childhood. *Developmental Psychopathology*. 2017 May; 30(2): 523-38.
 - 27 Wigelsworth M, Qualter P, Humphrey N. Emotional self-efficacy, conduct problems, and academic attainment: Developmental cascade effects in early adolescence. *European Journal of Developmental Psychology*. 2017 Mar 4; 14(2): 172-89.
 - 28 Aebi M, Giger J, Plattner B, Metzke CW, Steinhausen HC. Problem coping skills, psychosocial adversities and mental health problems in children and adolescents as predictors of criminal outcomes in young adulthood. *European Child and Adolescent Psychiatry*. 2014 May 1; 23(5):283-93.
 - 29 Dalsgaard S, Mortensen PB, Frydenberg M, Thomsen PH. Long-term criminal outcome of children with attention deficit hyperactivity disorder. *Criminal Behaviour and Mental Health*. 2013 Apr; 23(2): 86-98.
 - 30 Funk M, Drew N, Knapp M. Mental health, poverty and development. *Journal of Public Mental Health*. 2012 Nov 30; 11(4): 166-85.
 - 31 Currie J, Stabile M, Gruber J. Mental health in childhood and human capital. An economic perspective on the problems of disadvantaged youth. 2013.
 - 32 Campbell F, Conti G, Heckman JJ, Moon SH, Pinto R, Pungello E, Pan Y. Early childhood investments substantially boost adult health. *Science*. 2014 Mar 28; 343(6178): 1478-85.
 - 33 García JL, Heckman JJ, Leaf DE, Prados MJ. The life-cycle benefits of an influential early childhood program. *National Bureau of Economic Research*; 2016 Dec 29.
 - 34 Belfield C, Bowden AB, Klapp A, Levin H, Shand R, Zander S. The economic value of social and emotional learning. *Journal of Benefit-Cost Analysis*. 2015; 6(3): 508-44.
 - 35 Rutter M. *Fifteen thousand hours: Secondary schools and their effects on children*. Harvard University Press. 1979.
 - 36 Slep GR, Chin TC, Kern ML, Siokou C, Loton D, Oades LG, Vella-Brodrick D, Waters L. Positive education in Australia: Practice, measurement, and future directions. In *Social and emotional learning in Australia and the Asia-Pacific 2017* (pp. 101-122). Springer, Singapore.
 - 37 McLellan LF, Andrijic V, Davies S, Lyneham HJ, Rapee RM. Delivery of a therapist-facilitated telecare anxiety program to children in rural communities: A pilot study. *Behavior Change*. 2017 Sep; 34(3): 156-67.
 - 38 Sciberras E, Mulraney M, Anderson V, Rapee RM, Nicholson JM, Efron D, Lee K, Markopoulos Z, Hiscock H. Managing anxiety in children with ADHD using cognitive-behavioral therapy: A pilot randomized controlled trial. *Journal of Attention Disorders*. 2018 Mar; 22(5): 515-20.

-
- 39 Haugland BS, Raknes S, Haaland AT, Wergeland GJ, Bjaastad JF, Baste V, Himle J, Rapee R, Hoffart A. School-based cognitive behavioral interventions for anxious youth: Study protocol for a randomized controlled trial. *Trials*. 2017 Dec; 18(1): 100.
 - 40 Djurhuus ID, Bikic A. Is the Cool Kids programme working in outpatient psychiatric clinics? A Danish naturalistic effectiveness study. *Nordic Journal of Psychiatry*. 2019 Feb 17; 73(2): 141-8.
 - 41 Bailey E, Spittal MJ, Pirkis J, Gould M, Robinson J. Universal suicide prevention in young people. *Crisis*. 2017 Jul 27.
 - 42 National Health and Medical Research Council. NHMRC additional levels of evidence and grades for recommendations for developers of guidelines. Canberra, Australia. 2009.
 - 43 Polanczyk GV, Salum GA, Sugaya LS, Caye A, Rohde LA. Annual Research Review: A meta-analysis of the worldwide prevalence of mental disorders in children and adolescents. *Journal of Child Psychology and Psychiatry*. 2015 Mar; 56(3): 345-65.
 - 44 American Psychiatric Association. Diagnostic and statistical manual of mental disorders (DSM-5®). American Psychiatric Association Publishing. 2013 May 22.
 - 45 Swartz K, Musci RJ, Beaudry MB, Heley K, Miller L, Alfes C, Townsend L, Thornicroft G, Wilcox HC. School-based curriculum to improve depression literacy among US secondary school students: A randomized effectiveness trial. *American Journal of Public Health*. 2017 Dec; 107(12): 1970-6.
 - 46 Townsend L, Musci R, Stuart E, Heley K, Beaudry MB, Schweizer B, Ruble A, Swartz K, Wilcox H. Gender differences in depression literacy and stigma after a randomized controlled evaluation of a universal depression education program. *Journal of Adolescent Health*. 2019 Apr 1; 64(4): 472-7.
 - 47 Rooney R, Hassan S, Kane R, Roberts CM, Nesa M. Reducing depression in 9–10 year old children in low SES schools: A longitudinal universal randomized controlled trial. *Behaviour Research and Therapy*. 2013 Dec 1; 51(12): 845-54.
 - 48 Rooney RM, Morrison D, Hassan S, Kane R, Roberts C, Mancini V. Prevention of internalizing disorders in 9–10 year old children: Efficacy of the Aussie Optimism Positive Thinking Skills Program at 30-month follow-up. *Frontiers in Psychology*. 2013 Dec 26; 4: 988.
 - 49 Johnstone J, Rooney RM, Hassan S, Kane RT. Prevention of depression and anxiety symptoms in adolescents: 42 and 54 months follow-up of the Aussie Optimism Program-Positive Thinking Skills. *Frontiers in Psychology*. 2014 May 28; 5: 364.
 - 50 Cheng M, Rooney RM, Kane RT, Hassan S, Baughman N. Do parent mental illness and family living arrangement moderate the effects of the Aussie Optimism Program on depression and anxiety in children? *Frontiers in Psychiatry*. 2018; 9.
 - 51 Iizuka CA, Barrett PM, Gillies R, Cook CR, Marinovic W. A combined intervention targeting both teachers' and students' social-emotional skills: Preliminary evaluation of students' outcomes. *Journal of Psychologists and Counsellors in Schools*. 2014 Dec; 24(2): 152-66.
 - 52 Lee SS, Victor AM, James MG, Roach LE, Bernstein GA. School-based interventions for anxious children: Long-term follow-up. *Child Psychiatry and Human Development*. 2016 Apr 1; 47(2): 183-93.
 - 53 Skryabina E, Taylor G, Stallard P. Effect of a universal anxiety prevention programme (FRIENDS) on children's academic performance: Results from a randomised controlled trial. *Journal of Child Psychology and Psychiatry*. 2016 Nov; 57(11): 1297-307.
 - 54 Stallard P, Skryabina E, Taylor G, Phillips R, Daniels H, Anderson R, Simpson N. Classroom-based cognitive behaviour therapy (FRIENDS): A cluster randomised controlled trial to Prevent Anxiety in Children through Education in Schools (PACES). *Lancet Psychiatry*. 2014 Aug 1; 1(3): 185-92.
 - 55 Kösters MP, Chinapaw MJ, Zwaanswijk M, Van Der Wal MF, Koot HM. Indicated prevention of childhood anxiety and depression: Results from a practice-based study up to 12 months after intervention. *American Journal of Public Health*. 2015 Oct; 105(10): 2005-13.

-
- 56 Ahlen J, Hursti T, Tanner L, Tokay Z, Ghaderi A. Prevention of anxiety and depression in Swedish school children: A cluster-randomized effectiveness study. *Prevention Science*. 2018 Feb 1; 19(2):147-58.
 - 57 Ahlen J, Lenhard F, Ghaderi A. Long-term outcome of a cluster-randomized universal prevention trial targeting anxiety and depression in school children. *Behavior Therapy*. 2019 Jan 1; 50(1): 200-13.
 - 58 Anticich SA, Barrett PM, Silverman W, Lacherez P, Gillies R. The prevention of childhood anxiety and promotion of resilience among preschool-aged children: A universal school-based trial. *Advances in School Mental Health Promotion*. 2013 Apr 1; 6(2): 93-121.
 - 59 Ruocco S, Gordon J, McLean LA. Effectiveness of a school-based early intervention CBT group programme for children with anxiety aged 5–7 years. *Advances in School Mental Health Promotion*. 2016 Jan 2; 9(1): 29-49.
 - 60 Calear AL, Christensen H, Mackinnon A, Griffiths KM. Adherence to the MoodGYM program: Outcomes and predictors for an adolescent school-based population. *Journal of Affective Disorders*. 2013 May 1; 147(1-3): 338-44.
 - 61 Kindt K, Kleinjan M, Janssens J, Scholte R. Evaluation of a school-based depression prevention program among adolescents from low-income areas: A randomized controlled effectiveness trial. *International Journal of Environmental Research and Public Health*. 2014 May; 11(5): 5273-93.
 - 62 Poppelaars M, Tak YR, Lichtwarck-Aschoff A, Engels RC, Lobel A, Merry SN, Lucassen MF, Granic I. A randomized controlled trial comparing two cognitive-behavioral programs for adolescent girls with subclinical depression: a school-based program (Op Volle Kracht) and a computerized program (SPARX). *Behaviour Research and Therapy*. 2016 May 1; 80: 33-42.
 - 63 Tak YR, Kleinjan M, Lichtwarck-Aschoff A, Engels RC. Secondary outcomes of a school-based universal resiliency training for adolescents: A cluster randomized controlled trial. *BMC Public Health*. 2014 Dec; 14(1): 1171.
 - 64 Tak YR, Lichtwarck-Aschoff A, Gillham JE, Van Zundert RM, Engels RC. Universal school-based depression prevention 'Op Volle Kracht': A longitudinal cluster randomized controlled trial. *Journal of Abnormal Child Psychology*. 2016 Jul 1; 44(5): 949-61.
 - 65 Challen AR, Machin SJ, Gillham JE. The UK Resilience Programme: A school-based universal nonrandomized pragmatic controlled trial. *Journal of Consulting and Clinical Psychology*. 2014 Feb; 82(1): 75.
 - 66 Wijnhoven LA, Creemers DH, Vermulst AA, Scholte RH, Engels RC. Randomized controlled trial testing the effectiveness of a depression prevention program ('Op Volle Kracht') among adolescent girls with elevated depressive symptoms. *Journal of Abnormal Child Psychology*. 2014 Feb 1; 42(2): 217-28.
 - 67 Brunwasser SM, Freres DR, Gillham JE. Youth cognitive-behavioral depression prevention: Testing theory in a randomized controlled trial. *Cognitive Therapy and Research*. 2018 Aug 1; 42(4): 468-82.
 - 68 Singh N, Minaie MG, Skvarc DR, Toumbourou JW. Impact of a secondary school depression prevention curriculum on adolescent social-emotional skills: Evaluation of the resilient families program. *Journal of Youth and Adolescence*. 2019 Jun 15; 48(6): 1100-15.
 - 69 Rose K, Hawes DJ, Hunt CJ. Randomized controlled trial of a friendship skills intervention on adolescent depressive symptoms. *Journal of Consulting and Clinical Psychology*. 2014 Jun; 82(3): 510.
 - 70 Mackay BA, Shochet IM, Orr JA. A pilot randomised controlled trial of a school-based resilience intervention to prevent depressive symptoms for young adolescents with autism spectrum disorder: A mixed methods analysis. *Journal of Autism and Developmental Disorders*. 2017 Nov 1; 47(11): 3458-78.
 - 71 Stallard P, Phillips R, Montgomery AA, Spears M, Anderson R, Taylor J, Araya R, Lewis G, Ukoumunne OC, Millings A, Georgiou L. A cluster randomised controlled trial to determine the

-
- clinical effectiveness and cost-effectiveness of classroom-based cognitive-behavioural therapy (CBT) in reducing symptoms of depression in high-risk adolescents. *Health Technology Assessment* (Winchester, England). 2013 Oct; 17(47): vii.
- 72 Anderson R, Ukoumunne OC, Sayal K, Phillips R, Taylor JA, Spears M, Araya R, Lewis G, Millings A, Montgomery AA, Stallard P. Cost-effectiveness of classroom-based cognitive behaviour therapy in reducing symptoms of depression in adolescents: A trial-based analysis. *Journal of Child Psychology and Psychiatry*. 2014 Dec; 55(12): 1390-7.
- 73 Andrews T, Martin G, Hasking P, Page A. Predictors of continuation and cessation of nonsuicidal self-injury. *Journal of Adolescent Health*. 2013 Jul 1; 53(1): 40-6.
- 74 Hasking PA, Coric SJ, Swannell S, Martin G, Thompson HK, Frost AD. Brief report: Emotion regulation and coping as moderators in the relationship between personality and self-injury. *Journal of Adolescence*. 2010 Oct 1; 33(5): 767-73.
- 75 Klonsky ED. The functions of deliberate self-injury: A review of the evidence. *Clinical Psychology Review*. 2007 Mar 1; 27(2): 226-39.
- 76 Berger E, Hasking P, Martin G. Adolescents' perspectives of youth non-suicidal self-injury prevention. *Youth and Society*. 2017 Jan; 49(1): 3-22.
- 77 Berger E, Hasking P, Martin G. 'Listen to them': Adolescents' views on helping young people who self-injure. *Journal of Adolescence*. 2013 Oct 1; 36(5): 935-45.
- 78 Martin G, Swannell S, Harrison J, Hazell P, Taylor A. The Australian national epidemiological study of self-injury (ANESSI). Brisbane, Australia. 2010.
- 79 Muehlenkamp JJ, Claes L, Havertape L, Plener PL. International prevalence of adolescent non-suicidal self-injury and deliberate self-harm. *Child and Adolescent Psychiatry and Mental Health*. 2012 Dec; 6(1): 10.
- 80 Muehlenkamp JJ, Gutierrez PM. Risk for suicide attempts among adolescents who engage in non-suicidal self-injury. *Archives of Suicide Research*. 2007 Jan 1; 11(1): 69-82.
- 81 'Causes of Death', 27 Sep 2017, Australian Bureau of Statistics (internet). Available at: <http://www.abs.gov.au/Causes-of-Death>
- 82 'Causes of Death', 26 Sep 2018, Australian Bureau of Statistics (internet). Available from: <http://www.abs.gov.au/Causes-of-Death>
- 83 Wasserman D, Hoven CW, Wasserman C, Wall M, Eisenberg R, Hadlaczky G, Kelleher I, Sarchiapone M, Apter A, Balazs J, Bobes J. School-based suicide prevention programmes: The SEYLE cluster-randomised, controlled trial. *Lancet*. 2015 Apr 18; 385(9977): 1536-44.
- 84 Schilling EA, Aseltine RH, James A. The SOS suicide prevention program: Further evidence of efficacy and effectiveness. *Prevention Science*. 2016 Feb 1; 17(2): 157-66.
- 85 Schilling EA, Lawless M, Buchanan L, Aseltine Jr RH. "Signs of Suicide" shows promise as a middle school suicide prevention program. *Suicide and Life-Threatening Behavior*. 2014 Dec; 44(6): 653-67.
- 86 Evans SW, Langberg JM, Schultz BK, Vaughn A, Altaye M, Marshall SA, Zoromski AK. Evaluation of a school-based treatment program for young adolescents with ADHD. *Journal of Consulting and Clinical Psychology*. 2016 Jan; 84(1): 15.
- 87 Langberg JM, Evans SW, Schultz BK, Becker SP, Altaye M, Girio-Herrera E. Trajectories and predictors of response to the Challenging Horizons Program for adolescents with ADHD. *Behavior Therapy*. 2016 May 1; 47(3): 339-54.
- 88 Schultz BK, Evans SW, Langberg JM, Schoemann AM. Outcomes for adolescents who comply with long-term psychosocial treatment for ADHD. *Journal of Consulting and Clinical Psychology*. 2017 Mar; 85(3): 250.
- 89 Bowman-Perrott L, Burke MD, Zaini S, Zhang N, Vannest K. Promoting positive behavior using the Good Behavior Game: A meta-analysis of single-case research. *Journal of Positive Behavior Interventions*. 2016 Jul; 18(3): 180-90.

-
- 90 Flower A, McKenna JW, Bunuan RL, Muething CS, Vega Jr R. Effects of the Good Behavior Game on challenging behaviors in school settings. *Review of Educational Research*. 2014 Dec; 84(4): 546-71.
 - 91 Leflot G, van Lier PA, Onghena P, Colpin H. The role of children's on-task behavior in the prevention of aggressive behavior development and peer rejection: A randomized controlled study of the Good Behavior Game in Belgian elementary classrooms. *Journal of School Psychology*. 2013 Apr 1; 51(2): 187-99.
 - 92 Einfeld SL, Beaumont R, Clark T, Clarke KS, Costley D, Gray KM, Horstead SK, Redoblado Hodge MA, Roberts J, Sofronoff K, Taffe JR. School-based social skills training for young people with autism spectrum disorders. *Journal of Intellectual and Developmental Disability*. 2018 Jan 2; 43(1): 29-39.
 - 93 Hoek HW. Incidence, prevalence and mortality of anorexia nervosa and other eating disorders. *Current Opinion in Psychiatry*. 2006 Jul 1; 19(4): 389-94.
 - 94 Meczekalski B, Podfigurna-Stopa A, Katulski K. Long-term consequences of anorexia nervosa. *Maturitas*. 2013 Jul 1; 75(3): 215-20.
 - 95 Halliwell E, Yager Z, Paraskeva N, Diedrichs PC, Smith H, White P. Body Image in Primary Schools: A pilot evaluation of a primary school intervention program designed by teachers to improve children's body satisfaction. *Body Image*. 2016 Dec 1; 19: 133-41.
 - 96 Dunstan CJ, Paxton SJ, McLean SA. An evaluation of a body image intervention in adolescent girls delivered in single-sex versus co-educational classroom settings. *Eating Behaviors*. 2017 Apr 1; 25: 23-31.
 - 97 Wilksch SM. School-based eating disorder prevention: A pilot effectiveness trial of teacher-delivered Media Smart. *Early Intervention in Psychiatry*. 2015 Feb; 9(1): 21-8.
 - 98 Wilksch SM, Paxton SJ, Byrne SM, Austin SB, McLean SA, Thompson KM, Dorairaj K, Wade TD. Prevention across the spectrum: A randomized controlled trial of three programs to reduce risk factors for both eating disorders and obesity. *Psychological Medicine*. 2015 Jul; 45(9): 1811-23.
 - 99 Wilksch SM, Wade TD. Depression as a moderator of benefit from Media Smart: A school-based eating disorder prevention program. *Behaviour Research and Therapy*. 2014 Jan 1; 52: 64-71.
 - 100 Anthony H, McLean LA. Promoting mental health at school: Short-term effectiveness of a popular school-based resiliency programme. *Advances in School Mental Health Promotion*. 2015 Oct 2; 8(4): 199-215.
 - 101 Langley AK, Gonzalez A, Sugar CA, Solis D, Jaycox L. Bounce back: Effectiveness of an elementary school-based intervention for multicultural children exposed to traumatic events. *Journal of Consulting and Clinical Psychology*. 2015 Oct; 83(5): 853.
 - 102 Santiago CD, Raviv T, Ros AM, Brewer SK, Distel LM, Torres SA, Fuller AK, Lewis KM, Coyne CA, Cicchetti C, Langley AK. Implementing the Bounce Back trauma intervention in urban elementary schools: A real-world replication trial. *School Psychology Quarterly*. 2018 Mar; 33(1): 1.
 - 103 Newton NC, Andrews G, Champion KE, Teesson M. Universal Internet-based prevention for alcohol and cannabis use reduces truancy, psychological distress and moral disengagement: A cluster randomised controlled trial. *Preventative Medicine*. 2014 Aug 1; 65: 109-15.
 - 104 Melnyk BM, Jacobson D, Kelly S, Belyea M, Shaibi G, Small L, O'Haver J, Marsiglia FF. Promoting healthy lifestyles in high school adolescents: A randomized controlled trial. *Am J Preventative Medicine*. 2013 Oct 1; 45(4): 407-15.
 - 105 Melnyk BM, Jacobson D, Kelly SA, Belyea MJ, Shaibi GQ, Small L, O'Haver JA, Marsiglia FF. Twelve-month effects of the COPE healthy lifestyles TEEN program on overweight and depressive symptoms in high school adolescents. *Journal of School Health*. 2015 Dec; 85(12): 861-70.

-
- 106 Ardic A, Erdogan S. The effectiveness of the COPE healthy lifestyles TEEN program: A school-based intervention in middle school adolescents with 12-month follow-up. *Journal of Advanced Nursing*. 2017 Jun; 73(6): 1377-89.
 - 107 Perry Y, Petrie K, Buckley H, Cavanagh L, Clarke D, Winslade M, Hadzi-Pavlovic D, Manicavasagar V, Christensen H. Effects of a classroom-based educational resource on adolescent mental health literacy: A cluster randomised controlled trial. *Journal of Adolescence*. 2014 Oct 1; 37(7): 1143-51.
 - 108 Fung J, Guo S, Jin J, Bear L, Lau A. A pilot randomized trial evaluating a school-based mindfulness intervention for ethnic minority youth. *Mindfulness (N Y)*. 2016 Aug 1; 7(4): 819-28.
 - 109 Lewis KM, Schure MB, Bavarian N, DuBois DL, Day J, Ji P, Silverthorn N, Acock A, Vuchinich S, Flay BR. Problem behavior and urban, low-income youth: A randomized controlled trial of Positive Action in Chicago. *Am J Preventative Medicine*. 2013 Jun 1; 44(6): 622-30.
 - 110 Snyder FJ, Acock AC, Vuchinich S, Beets MW, Washburn IJ, Flay BR. Preventing negative behaviors among elementary-school students through enhancing students' social-emotional and character development. *American Journal of Health Promotion*. 2013 Sep; 28(1): 50-8.
 - 111 Bavarian N, Lewis KM, DuBois DL, Acock A, Vuchinich S, Silverthorn N, Snyder FJ, Day J, Ji P, Flay BR. Using social-emotional and character development to improve academic outcomes: A matched-pair, cluster-randomized controlled trial in low-income, urban schools. *Journal of School Health*. 2013 Nov; 83(11): 771-9.
 - 112 Duncan R, Washburn IJ, Lewis KM, Bavarian N, DuBois DL, Acock AC, Vuchinich S, Flay BR. Can universal SEL programs benefit universally? Effects of the positive action program on multiple trajectories of social-emotional and misconduct behaviors. *Prevention Science*. 2017 Feb 1; 18(2): 214-24.
 - 113 Bavarian N, Lewis KM, Acock A, DuBois DL, Yan Z, Vuchinich S, Silverthorn N, Day J, Flay BR. Effects of a school-based social-emotional and character development program on health behaviors: A matched-pair, cluster-randomized controlled trial. *The Journal of Primary Prevention*. 2016 Feb 1; 37(1): 87-105.
 - 114 Lewis KM, DuBois DL, Bavarian N, Acock A, Silverthorn N, Day J, Ji P, Vuchinich S, Flay BR. Effects of Positive Action on the emotional health of urban youth: A cluster-randomized trial. *Journal of Adolescent Health*. 2013 Dec 1; 53(6): 706-11.
 - 115 Guo S, Wu Q, Smokowski PR, Bacallao M, Evans CB, Cotter KL. A longitudinal evaluation of the positive action program in a low-income, racially diverse, rural county: Effects on self-esteem, school hassles, aggression, and internalizing symptoms. *Journal of Youth and Adolescence*. 2015 Dec 1; 44(12): 2337-58.
 - 116 Smokowski PR, Guo S, Wu Q, Evans CB, Cotter KL, Bacallao M. Evaluating dosage effects for the positive action program: How implementation impacts internalizing symptoms, aggression, school hassles, and self-esteem. *American Journal of Orthopsychiatry*. 2016; 86(3): 310.
 - 117 Fishbein DH, Domitrovich C, Williams J, Gitukui S, Guthrie C, Shapiro D, Greenberg M. Short-term intervention effects of the PATHS curriculum in young low-income children: Capitalizing on plasticity. *The Journal of Primary Prevention*. 2016 Dec 1; 37(6): 493-511.
 - 118 Shoshani A, Steinmetz S. Positive psychology at school: A school-based intervention to promote adolescents' mental health and well-being. *Journal of Happiness Studies*. 2014 Dec 1; 15(6): 1289-311.
 - 119 Novak M, Mihić J, Bašić J, Nix RL. PATHS in Croatia: A school-based randomised-controlled trial of a social and emotional learning curriculum. *International Journal of Psychology*. 2017 Apr; 52(2): 87-95.
 - 120 Crean HF, Johnson DB. Promoting Alternative Thinking Strategies (PATHS) and elementary school aged children's aggression: Results from a cluster randomized trial. *American Journal of Community Psychology*. 2013 Sep 1; 52(1-2): 56-72.

-
- 121 Schonfeld DJ, Adams RE, Fredstrom BK, Weissberg RP, Gilman R, Voyce C, Tomlin R, Speese-Linehan D. Cluster-randomized trial demonstrating impact on academic achievement of elementary social-emotional learning. *School Psychology Quarterly*. 2015 Sep; 30(3): 406.
- 122 Averdijk M, Zirk-Sadowski J, Ribeaud D, Eisner M. Long-term effects of two childhood psychosocial interventions on adolescent delinquency, substance use, and antisocial behavior: A cluster randomized controlled trial. *Journal of Experimental Criminology*. 2016 Mar 1; 12(1): 21-47.
- 123 Panayiotou M, Humphrey N, Hennessey A. Implementation matters: Using complier average causal effect estimation to determine the impact of the Promoting Alternative Thinking Strategies (PATHS) curriculum on children's quality of life. *Journal of Educational Psychology*. 2019 Apr 8.
- 124 Espelage DL, Low S, Polanin JR, Brown EC. The impact of a middle school program to reduce aggression, victimization, and sexual violence. *Journal of Adolescent Health*. 2013 Aug 1; 53(2): 180-6.
- 125 Espelage DL, Low S, Polanin JR, Brown EC. Clinical trial of Second Step® middle-school program: Impact on aggression & victimization. *Journal of Applied Developmental Psychology*. 2015 Mar 1; 37: 52-63.
- 126 Espelage DL, Low S, Van Ryzin MJ, Polanin JR. Clinical trial of second step middle school program: Impact on bullying, cyberbullying, homophobic teasing, and sexual harassment perpetration. *School Psychology Review*. 2015 Dec; 44(4): 464-79. Evans SW, Langberg JM, Schultz BK, Vaughn A, Altaye M, Marshall SA, Zoromski AK. Evaluation of a school-based treatment program for young adolescents with ADHD. *Journal of Consulting and Clinical Psychology*. 2016 Jan; 84(1): 15.
- 127 Low S, Cook CR, Smolkowski K, Buntain-Ricklefs J. Promoting social-emotional competence: An evaluation of the elementary version of Second Step®. *Journal of School Psychology*. 2015 Dec 1; 53(6): 463-77.
- 128 Low S, Smolkowski K, Cook C, Desfosses D. Two-year impact of a universal social-emotional learning curriculum: Group differences from developmentally sensitive trends over time. *Developmental Psychology*. 2019 Feb; 55(2): 415.
- 129 Cook CR, Low S, Buntain-Ricklefs J, Whitaker K, Pullmann MD, Lally J. Evaluation of second step on early elementary students' academic outcomes: A randomized controlled trial. *School Psychology Quarterly*. 2018 Dec; 33(4): 561.
- 130 Upshur CC, Heyman M, Wenz-Gross M. Efficacy trial of the Second Step Early Learning (SSEL) curriculum: preliminary outcomes. *Journal of Applied Developmental Psychology*. 2017 May 1; 50: 15-25.
- 131 Hart LM, Mason RJ, Kelly CM, Cvetkovski S, Jorm AF. 'teen Mental Health First Aid': A description of the program and an initial evaluation. *International Journal of Mental Health Systems*. 2016 Dec; 10(1): 3.
- 132 Singal AG, Higgins PD, Waljee AK. A primer on effectiveness and efficacy trials. *Clinical and Translational Gastroenterology*. 2014 Jan; 5(1): e45.
- 133 Payton JW, Wardlaw DM, Graczyk PA, Bloodworth MR, Tompsett CJ, Weissberg RP. Social and emotional learning: A framework for promoting mental health and reducing risk behavior in children and youth. *Journal of School Health*. 2000 May; 70(5): 179-85.
- 134 Vella-Brodrick DA, Rickard NS, Chin TC. Evaluating positive education: A framework and case study. In *The Routledge International Handbook of Critical Positive Psychology* 2017 Sep 19 (pp. 488-502). Routledge.
- 135 Lubman DI, Berridge BJ, Blee F, Jorm AF, Wilson CJ, Allen NB, McKay-Brown L, Proimos J, Cheetham A, Wolfe R. A school-based health promotion programme to increase help-seeking for substance use and mental health problems: Study protocol for a randomised controlled trial. *Trials*. 2016 Dec; 17(1): 393.

136 McGorry PD. The specialist youth mental health model: strengthening the weakest link in the public mental health system. *Medical Journal of Australia*. 2007 Oct; 187(S7): S53-6.

Appendix A: Data extraction tables for reviewed articles

Programs Targeting Anxiety and Depression

Adolescent Depression Awareness Program

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Swartz et al. (2017)	USA	High school age (no age statistics reported)	6679	Depression Literacy / Mental Health Stigma	Randomised Controlled Trial	54 high schools in Maryland, Delaware, Pennsylvania, Michigan and Oklahoma	Waitlist control group	Adolescent Depression Knowledge Questionnaire (ADKQ); Modified version of the Reported and Intended Behaviour Scale (RIBS); Modified version of the Child and Adolescent Services	4 months	The program resulted in significantly higher levels of depression literacy among participating students compared with waitlist controls, after adjusting for pre-test assessment of depression literacy. Overall, the program did not	II

								Assessment; Teachers completed an online survey at the end of the program		significantly affect stigma. After the program, students approached 46% of teachers with concerns about themselves or others.	
Townsend et al. (2019)	USA	High school age (no age statistics reported)	6679	Depression Literacy / Mental Health Stigma (gender differences)	Randomised Controlled Trial	54 high schools in Maryland, Delaware, Pennsylvania, Michigan and Oklahoma	Waitlist control group	Adolescent Depression Knowledge Questionnaire (ADKQ); Modified version of the Reported and Intended Behaviour Scale (RIBS)	4 months	At 4 months, there was a main effect of the program on depression literacy (odds ratio [OR] ¼ 3.3, p ¼ .001) with intervention students achieving depression literacy at higher rates than controls. Gender exhibited a main effect, with women showing greater rates of depression literacy than men (OR ¼ 1.51, p ¼ .001). There was no significant intervention x gender interaction. The program did not	II

exhibit a significant main effect on stigma. There was a main effect for gender, with females demonstrating less stigma than males (OR $\frac{1}{4}$.65, p $\frac{1}{4}$.001). There was no significant interaction between the intervention and gender on stigma

Aussie Optimism Programme-Positive Thinking Skills

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Rooney et al. (2013a)	Australia	8-10 (8.75)	910	Depression	Cluster Randomised Controlled Trial	22 West Australian primary schools situated in low socio-economic areas	Non-intervention control group	Children's Depression Inventory (CDI), Spence Children's Anxiety Scale (SCAS), Children's Attributional Style Questionnaire (CASQ), Diagnostic Interview for Children and Adolescents (DICA-IV), Strengths and Difficulties Questionnaire (SDQ-P)	6 months	Significant decrease in depression symptoms post-intervention, but not maintained in follow-up. Reduction in parent-reported emotional difficulties was maintained at 6-month follow-up. No change to anxiety, attribution style, parent-reported pro-social behaviours, or incidence and recovery rates for depression, anxiety or internalising symptoms.	II
Rooney et al. (2013b)	Australia	9-10	910	Depression / Anxiety	Cluster Randomised Controlled Trial	22 West Australian primary schools situated in low socio-	Non-intervention control group	Children's Depression Inventory (CDI); Spence Children's Anxiety Scale (SCAS); Children's Attributional	30 months	There were no significant differences between groups regarding anxiety or depression, as well as no significant differences in	II

						economic areas		Questionnaire (CASQ); Strength and Difficulties Questionnaire (SDQ);		attributional styles. Parents reported significantly less hyperactive behaviours from children in the intervention group. This finding suggests that AOP-PTS has the capacity to treat externalising problems at a medium-term effect.	
Johnstone et al. (2014)	Australia	9-10	370	Depression / Anxiety	Cluster Randomised Controlled Trial	22 West Australian primary schools situated in low socio-economic areas	Non-intervention control group	Children's Depression Inventory (CDI); Spence Children's Anxiety Scale (SCAS); Children's Attributional Questionnaire (CASQ)	42 months; 54 months	Results showed there were no significant reductions across groups in the depressive and anxiety symptoms, and attribution style at either 42 or 54 months follow-up. These findings suggest that AOP-PTS has short- and medium-term effects which were not sustained in the longer term.	II

Cheng et al. (2018)	Australia	9-11	502	Depression / Anxiety	Cluster Randomised Controlled Trial	13 private schools in the Perth area	Non-intervention control group	Children's Depression Inventory (CDI); Spence Children's Anxiety Scale (SCAS); Parent questionnaire	6 months	The findings suggest that the program is effective for children regardless of parent mental illness or family living arrangement, although parent mental illness has the capacity to influence the program's outcomes.	II
---------------------	-----------	------	-----	----------------------	-------------------------------------	--------------------------------------	--------------------------------	---	----------	--	----

FRIENDS

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
lizuka et al. (2014a)	Australia	10-12	57	Anxiety	Quasi-experimental	Grade 6 and 7 students from a school in a low socio-economic community in Queensland	Pre-post (no control group)	Strength and Difficulties Questionnaire (SDQ), Spence Children's Anxiety Scale (SCAS)	3 months 6 months	"Low difficulty" group showed a significant reduction in separation anxiety score at 3 months, no significant effect on any score at 6 months. "High difficulty" group showed nothing at 3 months, significantly reduced Spence Children's Anxiety Scale (SCAS) total at 6 months.	III-3
Stallard et al. (2014)	UK	9-10	12 57	Anxiety	Randomised Controlled Trial	Forty-one primary schools in the southwest of England (PACES Study)	Non-intervention control	Revised Children's Anxiety and Depression Scale (RCADS), Penn State Worry Questionnaire for Children,	12 months	Significant reduction in social anxiety, generalised anxiety, and total Revised Children's Anxiety and Depression Scale (RCADS) score at 12 months, but only when FRIENDS was	II

								Rosenberg Self-Esteem Scale, life satisfaction		delivered by health leaders external to the school.	
Lee et al. (2016)	USA	Elementary school age (no age statistics reported)	61	Anxiety	Randomised Controlled Trial	Elementary school students with DSM-IV diagnoses of Social Anxiety Disorder or Generalised Anxiety Disorder or “features” (one or more, but not all criteria) of one of these anxiety disorders and associated composite clinician severity rating (CSR) of 2–6 on the Anxiety Disorders Interview Schedule (ADIS)	Non-intervention control	Anxiety Disorders Interview Schedule (ADIS), Multidimensional Anxiety Scale for Children (MASC), Parent Screen for Child Anxiety Related Emotional Disorders (SCARED), Clinician Severity Rating (CSR)	3 months ; 6 months ; 12 months ; 24 months ; 36 months	No significant treatment effects on the child-report measures. Significant difference on parent measures, lower Clinician Severity Rating maintained at 36 months. No difference for anxiety measures.	III-1

Skryabin et al. (2016)	UK	9-10	13 62	Anxiety	Randomised Controlled Trial	Forty-one primary schools in the southwest of England (PACES Study)	Non-intervention control	Revised Children's Anxiety and Depression Scale (RCADS), Penn State Worry Questionnaire for Children, Rosenberg Self-Esteem Scale, life satisfaction	12 months	Significant reduction in social anxiety, generalised anxiety, and total Revised Children's Anxiety and Depression Scale (RCADS) score at 12 months, but only when FRIENDS was delivered by health leaders external to the school.	II
------------------------	----	------	----------	---------	-----------------------------	---	--------------------------	--	-----------	---	----

FRIENDS for Life

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHM RC level
Kösters et al. (2015)	The Netherlands	(10.8)	461	Depression / Anxiety	Quasi-experimental	Schools in Amsterdam, grades 6-8	Non-intervention control	Revised Child Anxiety and Depression Scale (RCADS), Problem Behaviour at School Interview (teacher-rated)	12 months	Significant decrease in anxiety and depression scores for intervention group, sustained 12 months post intervention.	III-2
Ahlen et al. (2018)	Sweden	8-11	695	Depression / Anxiety	Cluster Randomised Controlled Trial	17 public and independent schools in Stockholm	Waitlist control	Spence Children's Anxiety Scale (SCAS), Children's Depression Inventory-Short Version (CDI-S), Strength and Difficulties Questionnaire (SDQ), Mini International Neuropsychiatric Interview for Children and Adolescents (MINI-KID)	12 months	No intervention effect for any outcome regarding the entire sample. Children with elevated depressive symptoms at baseline showed significant improvement in child-rated depressive symptoms at follow-up.	II

Ahlen et al. (2019)	Sweden	8-11	695	Depression / Anxiety	Cluster Randomised Controlled Trial	18 public and independent schools in Stockholm	Waitlist control	Spence Children's Anxiety Scale (SCAS), Children's Depression Inventory-Short Version (CDI-S), Strength and Difficulties Questionnaire (SDQ)	36 months	No intervention effect for any outcome regarding the entire sample, however there was a large amount of non-random attrition which served to moderate the outcome, suggesting that the overall result was biased towards a null result.	II
---------------------	--------	------	-----	----------------------	-------------------------------------	--	------------------	--	-----------	---	----

Fun FRIENDS

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Anticich et al. (2013)	Australia	4-7	488	Anxiety	Cluster Randomised Controlled Trial	14 Catholic schools in Brisbane	Active control group and waitlist control group	Preschool Anxiety Scale, Behavioural Inhibition Questionnaire, Behavioural and Emotional Rating Scale, Strength and Difficulties Questionnaire (SDQ), Devereux Early Childhood Assessment Clinical Form, Depression, Anxiety and Stress Scale (DASS-21), Hospital Anxiety and Depression Scale (HADS), Parenting Stress Index - Short Form	12 months	Intervention group showed improved behavioural inhibition, reduced child behavioural difficulties and improvements in social and emotional competence. Also, improvements in parenting distress and parent-child interactions.	II

Get Lost Mr Scary

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Ruocco et al. (2016)	Australia	5-7 (6.82)	134	Anxiety	Quasi-experimental (cluster non-randomised control)	23 public schools located in Western Sydney	Waitlist control	Spence Children's Anxiety Scale - Parent Version (SCAS-P), Child Behavior Checklist and Teacher Report Form (CBCL-TRF).	12 months	Children who received the intervention showed significant reductions in parent and teacher-rated anxiety and behavioural symptoms compared those in the control group. The reduction in anxiety was maintained at 12-month follow-up.	III-2

MoodGYM

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Calear et al. (2013)	Australia	12-17 (14.34)	1477	Depression	Cluster Randomised Controlled Trial	30 schools from across Australia participated in the YouthMood Project during 2006 and 2007. Of these schools, 16 (53.3%) were public schools and 26 (86.7%) were coeducational schools	3 groups: (1) high adherers to MoodGYM; (2) low adherers to MoodGym; (3) Waitlist control group	Revised Children's Manifest Anxiety Scale (RCMAS); Center for Epidemiological Studies Depression Scale (CES-D)	6 months	When compared to the control condition, participants in the high adherence intervention group reported stronger intervention effects at post-intervention and 6-month follow-up than participants in the low adherence group for anxiety and also depression. No significant intervention effects were identified between the high and low adherence groups. Being in Year 9, living in a rural location and having higher pre-intervention levels of depressive symptoms or self-esteem were predictive of greater adherence to the MoodGYM program.	II

Penn Resiliency Program

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHM RC level
Challen et al. (2014)	UK	11-12	2844	Depression / Anxiety	Quasi-experimental (cluster non-randomised control)	16 schools across 3 local government areas, overrepresented ethnic minority students and greater degree of economic deprivation compared to national average	Non-intervention control	Children's Depression Inventory (CDI), Revised Children's Manifest Anxiety Scale, Strength and Difficulties Questionnaire (SDQ)	12-16 months and 24-30 months	No effect on depressive symptoms at 1-year or 2-year follow-up points. No significant effect on anxiety symptoms or behaviour at any time point.	III-2
Brunwasser et al. (2018)	USA	(12.5)	697	Depression	Randomised Controlled Trial	Three public middle schools (grades 6–8) in suburban Philadelphia	Placebo intervention or non-intervention control	Children's Depression Inventory (CDI), Children's Attributional Style Questionnaire (CASQ)	36 months	In two schools, the intervention was effective; there was a significant effect of PRP on explanatory style, which mediated the intervention effect on depressive symptoms. In the other school, PRP had no effect on depressive symptoms or explanatory style. The	II

authors stated: "It remains unclear why PRP was ineffective in school C."

Op Volle Kracht (Dutch version of the Penn Resilience Program)

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHM RC level
Kindt et al. (2014)	The Netherlands	11-16 (13.42)	1343	Depression	Cluster Randomised Controlled Trial	Secondary schools with at least 30% of students from low-income areas	Non-intervention control	Children's Depression Inventory (CDI)	6 months 12 months	No effect on depressive symptoms at 12-month follow-up.	II
Tak et al. (2014)	The Netherlands	(13.91)	1341	Depression / Anxiety	Cluster Randomised Controlled Trial	Secondary schools	Non-intervention control	Children's Depression Inventory (CDI), Revised Children's Manifest Anxiety Scale (RCMAS)	6 months 12 months 18 months 24 months	Intervention group had higher Children's Depression Inventory (CDI) post-intervention baseline, which possibly suggests an iatrogenic effect. There was no difference between groups at 6, 12, 18, and 24-month follow-up time points.	II
Wijnhoven et al. (2014)	The Netherlands	11-15	102	Depression	Cluster Randomised	Adolescent girls in the first and second	Waitlist control	Children's Depression Inventory (CDI), Center	6 months	At 6 months follow-up, those in the intervention group had significantly lower levels of	II

					Controlled Trial	year of secondary school with elevated depressive symptoms		for Epidemiologi- cal Studies Depression (CES-D)		depressive symptoms compared to those in the control group.	
Poppelaars et al. (2016)	The Netherlands	(13.35)	208	Depression	Cluster Randomised Controlled Trial	Female adolescents with elevated depressive symptoms	4 groups: (1) OVK Intervention only; (2) computerised CBT only; (3) OVK Intervention plus computerised CBT combined; (4) active monitoring (attention) control	Reynolds Adolescent Depression Scale (RADS-2), suicidal ideation using item nine of the Children's Depression Inventory (CDI)	3 months 6 months 12 months	No intervention effect; depressive symptoms decreased in all conditions, with no difference between conditions.	II
Tak et al. (2016)	The Netherlands	(13.91)	1341	Depression	Cluster Randomised Controlled Trial	Secondary schools	Non-intervention control group	Children's Depression Inventory (CDI)	6 months 12 months 18 months	No difference in depressive symptoms across conditions at follow-up. Gender and depressive symptoms at baseline did not moderate intervention	II

25 months effects. The OVK program did not prevent depressive symptoms over the 2-year follow-up period.

Resilient Families Program

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Singh et al. (2019)	Australia	(12.3)	1826	Depression / Social-Emotional Learning	Cluster Randomised Controlled Trial	24 secondary schools (government and non-government) across Melbourne	Non-intervention control group	Center for Epidemiological Studies-Depression (CES-D) Measures of social-emotional skills included items from the Teen Version of Social Questionnaire; Social Self-Efficacy Questionnaire for Children; Emotional Control Scale; Beyondblue Social Problem Solving Inventory; Self-Report Coping Scale	12 months; 24 months	The program had no significant effect on social-emotional skills and no significant effects on adolescent depressive symptoms. However, family attendance at parent education events within the intervention schools was associated with longitudinal reductions in depressive symptoms.	II

Resourceful Adolescent Program

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHM RC level
Stallard et al. (2013)	UK	12-16	5030	Depression	Cluster Randomised Controlled Trial	Mixed-sex secondary schools in the UK	2 control groups: (1) Active control (Treatment as usual plus additional support from two facilitators) and (2) Non-intervention control (Treatment as usual)	Short Mood and Feelings Questionnaire (SMFQ)	6 months 12 months	No evidence of any effect on Short Mood and Feelings Questionnaire (SMFQ) scores over time. There was a high probability that the program was both less effective and more expensive than usual health education classes.	II
Anderson et al. (2014)	UK	12-16	3357	Depression	Cluster Randomised Controlled Trial	Eight mixed-sex UK secondary schools	Non-intervention control	Short Mood and Feelings Questionnaire (SMFQ)	6 months 12 months	No differences in Short Mood and Feelings Questionnaire (SMFQ) scores between groups over time; the program was not found to be effective.	II

Rose et al. (2014)	Australia	9-14 (12.22)	210	Depression	Cluster Randomised Controlled Trial	Grades 6 and 7 at four independent Sydney schools. All schools were single sex, including two boys' and two girls' schools. Two schools drew students from high socioeconomic status areas, whereas two schools drew students from middle socioeconomic status areas.	3 conditions: (1) RAP + Peer Interpersonal Relatedness program, (2) RAP only; (3) Waitlist control group	Reynolds Adolescent Depression Scale—Second Edition (RADS–2); Children's Depression Inventory (CDI); Psychological Sense of School Membership (PSSM); Clinical Assessment of Interpersonal Relations (CAIR); Multidimensional Students' Life Satisfaction Scale (MSLSS); Diagnostic Interview Schedule for Children, Adolescents,	12 months	Across the intervention period, the Resourceful Adolescent Program did not significantly reduce depressive symptoms relative to those students not receiving the intervention. The Resourceful Adolescent Program plus the Peer Interpersonal Relatedness program combined did significantly reduce depressive symptoms relative to those students not receiving the Peer Interpersonal Relatedness program. However, at the 12-month follow-up, the between-group reductions in depressive symptoms were no longer significant. At follow-up, participants in the combined RAP–PIR condition had achieved	II
--------------------	-----------	--------------	-----	------------	-------------------------------------	---	--	---	-----------	--	----

								and Parents (DISCAP)		significant increases in their school-related life satisfaction and significant increases in social functioning with peers relative to their peers in the other conditions.	
Mackay et al. (2017)	Australia	10-13 (11.8)	29	Depression	Randomised Controlled Trial (reported in a Mixed-Methods Analysis)	Schools in Brisbane. Eighteen of 46 invited schools agreed to participate. Participants included all children in years 6 or 7 who had been formally ascertained through the schooling system as having a diagnosis from a psychiatrist or paediatrician of Autistic Disorder,	Active control (The control group had usual access to the school guidance counsellor and/or learning support teacher for emotional support and counselling, as well as ongoing monitoring and support from classroom teachers and	Child Depression Inventory (CDI); The Coping Self-Efficacy Scale (CSES); Strengths and Difficulties Questionnaire (SDQ)	6 months	Significant intervention effects on parent reports of adolescent coping self-efficacy (maintained at 6-month follow-up) but no effect on depressive symptoms or mental health.	II

Asperger's Disorder, or Pervasive Developmental Disorder-Not Otherwise Specified (PDD-NOS) as per the DSM-IV-TR other school services)

Programs Targeting Self-Harm and Suicide

Signs of Suicide

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Schilling et al. (2014)	USA	School years 6-8	386	Suicide Prevention	Cluster RCT	Eight middle schools with a high proportion of students who had parents in the military	Non-intervention control group	A questionnaire including items relevant to three specific categories of outcome: (1) self-reported suicidal ideation and suicide attempts, (2) knowledge and attitudes about depression and suicide, and (3) help-seeking	3 months	Compared to controls, SOS participants demonstrated improved knowledge about suicide and suicide prevention, and participants with pre-test ideation reported fewer suicidal behaviours at post-test than controls with pre-test ideation. No significant effects of the SOS program on changes in help-seeking behaviours were found	II

Schilling et al. (2016)	USA	School year 9	1052	Suicide Prevention	Cluster RCT	16 technical high schools in the state of Connecticut and a comprehensive secondary school which has an affiliated vocational agriculture program, representing a wide distribution of economic and population variables	Wait-list control group	A questionnaire focused on two outcome categories: (1) self-reported suicidal ideation, suicide planning, and suicide attempts and (2) knowledge and attitudes about depression and suicide.	3 months	Students in the intervention group were approximately 64% less likely to report a suicide attempt in the past 3 months compared with students in the control group. The SOS program resulted in greater knowledge of depression and suicide and more favourable attitudes towards intervening with friends who may be exhibiting signs of suicidal intent and getting help for themselves if they were depressed or suicidal. High-risk SOS participants, defined as those with a lifetime history of suicide attempts, were significantly less likely to report planning a suicide in the 3 months following the program compared to lower-risk participants.	II
-------------------------	-----	---------------	------	--------------------	-------------	--	-------------------------	--	----------	--	----

Youth Aware of Mental Health

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Wasserman et al. (2015)	10 EU countries	14-18 (14.8)	11,110	Suicide Prevention	Cluster RCT	168 schools were randomly assigned to interventions (40 schools [2692 pupils] to QPR, 45 [2721] YAM, 43 [2764] ProfScreen, and 40 [2933] control).	(1) Question, Persuade, and Refer (QPR), a gatekeeper training module targeting teachers and other school personnel; (2) the Youth Aware of Mental Health Programme (YAM) targeting pupils; (3) screening by professionals (ProfScreen) with referral of at-risk pupils; (4) a non-intervention control group.	The primary outcome measure was the number of suicide attempts made at each of two follow-up time points. Another outcome was severe suicidal ideation in the 2 weeks preceding the follow-ups—i.e., all new cases of suicidal ideation identified at either of the two follow-ups.	3 months 12 months	No significant differences between intervention groups and the control group were recorded at the 3-month follow-up. At the 12-month follow-up, YAM was associated with a significant reduction of incident suicide attempts and severe suicidal ideation compared with the control group. 14 pupils (0.70%) reported incident suicide attempts at the 12-month follow-up in the YAM versus 34 (1.51%) in the control group, and 15 pupils (0.75%) reported severe suicidal ideation in the YAM group versus 31 (1.37%) in the control group. No participants	II

completed suicide
during the study period.

Programs Targeting Autism Spectrum Disorder, Attention-Deficit Hyperactivity Disorder, and Conduct Problems

Challenging Horizons Program

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHM RC level
Evans et al. (2016)	USA	School years 6-8	326	Attention deficit hyperactivity disorder (ADHD)	Randomised Controlled Trial	Students had to have a diagnosis of ADHD to be eligible to participate. The study included nine urban, suburban, and rural middle schools.	Three groups: (1) Challenging Horizons Program—after school version (CHP-AS); (2) Challenging Horizons Program—mentoring version (CHP-M); (3) Community Care control group	Children's Organizational Skills Scale (COSS); Classroom Performance Survey (CPS); Homework Problems Checklist (HPC); Impairment Rating Scale (IRS); Social Skills Improvement System (SSIS); Disruptive Behaviour Disorders	6 months	The results of this study indicate that the CHP-AS provides meaningful benefit to young adolescents with ADHD on organisation and time management, homework problems, academic functioning, and inattention symptoms (medium-sized effect compared to the community care control group at 6 months). There were also significant benefits of CHP-AS over the CHP-M condition in these domains of functioning. However, the attrition in the AS	II

								Rating Scale (DBD)		model of the program was substantially larger than that in the CHP-M and the community care control group	
Langberg et al. (2016)	USA	(12.1)	112	Attention deficit hyperactivity disorder (ADHD)	Repeated-Measures Design	Students had to have a diagnosis of ADHD to be eligible to participate. The study included nine urban, suburban, and rural middle schools.	Pre-post comparison	Children's Organisational Skills Scale (COSS); Homework Problems Checklist (HPC); Impairment Rating Scale (IRS); Stress Index for Parents of Adolescents (SIPA); Conflict Behaviour Questionnaire (CBQ); Disruptive Behaviour Disorders	6 months	Across outcomes, approximately 20% to 25% of participants made large improvements into the normal range of functioning after 1 year of ASP intervention; another 20% of participants on average started in the normal range of functioning and ended in the normal range of functioning. Approximately 50% of the adolescents with ADHD who received the intervention made negligible to moderate improvements. Strong school mental health provider/adolescent	IV

								Rating Scale (DBD); Multidimensional Anxiety Scale for Children (MASC)		working alliance, as rated from the adolescent perspective, and lower levels of parenting stress and parent-adolescent conflict consistently predicted an increased likelihood of intervention response.	
Shultz et al. (2017)	USA	(12.2)	216	Attention deficit hyperactivity disorder (ADHD)	Randomised Controlled Trial	Students had to have a diagnosis of ADHD to be eligible to participate. The study included nine urban, suburban, and rural middle schools.	Community Care control group	Children's Organizational Skills Scale (COSS); Disruptive Behaviour Disorders Rating Scale (DBD); Homework Problems Checklist (HPC); Social Skills Improvement System (SSIS); School grades	6 months	CHP resulted in significant reductions in problem behaviours and academic impairment when compared to community care. Treatment compliers exhibited medium to large benefits in organisation, disruptive behaviours, homework performance and grades relative to comparable control estimates, with results persisting six months after treatment ended. However, compliance had little impact on social skills. Attendance	II

in the CHP ranged from 0 to 60 sessions, raising questions about optimal dosing.

Good Behaviour Game

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Leflot et al. (2013)	Belgium	(7.5)	570	Prevention of Aggressive Behaviours	Randomised Controlled Trial	Fifteen schools, all located in rural to moderately urban communities	Non-intervention control group	Children's aggression was rated by peers; peer rejection was assessed by using an established child self-report protocol (Coie, Dodge, & Coppotelli (1982))	3 time points over an 18-month period (the GBG program was an ongoing aspect of the classroom curriculum)	Decreased levels of aggression and peer rejection were found for students who had participated in the GBG group. The intervention was able to reduce the aggressive behaviour development of at-risk children to levels of aggression that resembled children at low risk of aggressive behaviour.	II

Secret Agent Society

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Einfeld et al. (2018)	Australia	8-14 (10.7)	84	Social Skills / Emotional Regulation	Quasi-experimental (cluster non-randomised waitlist control)	Participants were recruited from 15 Autism Spectrum Disorder specific specialist primary and high school satellite classes run by Aspect in NSW. Aspect (Autism Spectrum Australia) is the largest provider of autism-specific education in Australia.	Treatment as usual control group	Social Skills Questionnaire – Parent and Teacher forms (SSQ-P; SSQ-T); Emotion Regulation and Social Skills Questionnaire – Parent & Teacher forms. (ERSSQ- P; ERSSQ-T); James and the Maths Test; Dylan is Being Teased	12 months	Parent and child measures improved after the intervention but not in the waitlist condition. Improvements in parent, child and teacher measures were apparent at 12 months.	III-2

Programs Targeting Body Image Problems and Eating Disorders

Body Image in the Classroom

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Halliwell et al. (2016)	United Kingdom	9-10 (9.5)	144	Body Image / Body Esteem	Cluster Randomised Controlled Trial	Four schools in southwest England comparable on percentage of pupils with special educational needs, entitled to free school meals, and speaking English as an additional language	Non-intervention control group	Revised Body Esteem Scale (BES); Multidimensional Media Influence Scale (MMIS);	3 months	Body esteem was significantly higher among girls in the intervention group, compared to the control group, immediately post intervention and at 3-month follow-up. Moreover, girls with the lowest levels of body esteem at baseline reported the largest gains. Internalisation was significantly lower among boys in the control group compared to the intervention group at 3-month follow-up.	II

Happy Being Me Co-Educational

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHM RC level
Dunstan et al. (2017)	Australia	11-14 (12.7)	200	Body Dissatisfaction	Cluster Randomised Controlled Trial	Female students in five state secondary schools in Melbourne, in medium socio-economic status areas	Schools were randomly allocated to receive the intervention in single-sex classes (n=74), co-educational classes (n=73), or participate as a non-intervention control (n=53)	Eating Disorder Inventory – Body Dissatisfaction Subscale; Sociocultural Attitudes Towards Appearance Scale-3 — Internalisation-General Media Subscale; Physical Appearance Comparison Scale; Rosenberg Self-Esteem Scale; McKnight Risk Factor Survey – Weight Teasing – Peers subscale; Appearance Conversations Scale; Dutch Eating Behaviour Questionnaire – Restraint Subscale	6 months	Significant improvements in body dissatisfaction and psychological risk factors were observed in the intervention group at post-intervention and these were maintained at follow-up for psychological risk factors. Importantly, no significant differences between universal and selective delivery were observed, suggesting that the intervention is appropriate for dissemination in both modes.	II

Media Smart

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Wilksch & Wade (2014)	Australia	(13.62)	540	Eating Disorders	Cluster Randomised Controlled Trial	24 classes from one public school, one Catholic school and two private schools in South Australia	Non-intervention control group	Child Depression Inventory – Short Form; Sociocultural Attitudes Towards Appearance Questionnaire-3; Eating Disorder Inventory; Eating Disorder Examination – Questionnaire; Dutch Eating Behaviour Questionnaire – Restraint; Perceived Sociocultural Pressure Scale	6 months; 30 months	Media Smart achieved a reduction in eating disorder risk factors for high depression participants and a reduced rate of growth in risk factor scores for low depression participants. High depression Media Smart participants scored significantly lower than their control counterparts at post-program on shape and weight concern, media internalisation and dieting; low depression Media Smart participants scored significantly lower on shape and weight concern at 30-month follow-up.	II

Wilksch et al. (2015)	Australia (13.21)	1316	Eating Disorders	Cluster Randomised Controlled Trial	12 schools, across three Australian states (South Australia, n=355; Victoria, n=467; Western Australia, n=494). Schools were public (n=3), private (n=4) and Catholic (n=5)	(1) Life Smart intervention group; (2) the Helping, Encouraging, Listening and Protecting Peers (HELPP) initiative intervention group; and (3) non-intervention control group (usual school class)	Eating Disorder Examination; Dutch Eating Behaviour Questionnaire; Eating Disorder Inventory; Sociocultural Attitudes Towards Appearance Questionnaire-3; Perceived Sociocultural Pressure Scale; Child Depression Inventory – Short Form; McKnight Risk Factor Survey; Multidimensional Perfectionism Scale;	6 months; 12 months	Media Smart girls had half the rate of onset of clinically significant concerns about shape and weight than control girls at the 12-month follow-up. Media Smart boys experienced significant benefit on media internalisation compared with control boys and this effect was sustained at the 12-month follow-up. A group x time effect found that Media Smart participants reported more physical activity than control and HELPP participants at the 6-month follow-up, Media Smart participants reported less screen time than controls.	II
-----------------------	-------------------	------	------------------	-------------------------------------	---	--	---	---------------------	--	----

Wilksch (2015)	Australia	(12.43)	51	Eating Disorders	Pilot Cluster Randomised Controlled Trial	Two Grade 7 classes participated from one public primary school in Adelaide, South Australia	Non- intervention control group	Eating Disorder Examination; Dutch Eating Behaviour Questionnaire; Eating Disorder Inventory; Sociocultural Attitudes Towards Appearance Questionnaire-3; Child Depression Inventory-Short Form; Rosenberg Self-Esteem Scale; McKnight Risk Factor Survey	6 months	Media Smart girls scored significantly lower than their control counterparts on weight- related peer teasing at 6-month follow up; however, no other differences were found between Media Smart and the control group, for either boys or girls, at this time.	II
-------------------	-----------	---------	----	---------------------	--	---	---------------------------------------	--	-------------	---	----

General Programs

BounceBack!

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Anthony & McLean (2015)	Australia	8-10 (9.17)	39	Resilience	Quasi-experimental (two group non-randomised comparison)	Grades 3 and 4 from two medium-sized primary schools in Southeast Melbourne	Non-intervention control group	Resiliency Scales for Children and Adolescents (RSCA) and a 14-item social validity scale created for this study	3 months	Children who completed the program showed significantly higher levels of resilience 3 months post intervention compared to controls. Optimism and self-efficacy increased significantly and was maintained at 3-month follow-up, however there was no change to emotional regulation or perceived access to supportive relationships.	III-2

Bounce Back Program

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Langley et al. (2015)	USA	(7.65)	74	Post-traumatic Stress	Cluster Randomised Controlled Trial	Four elementary schools in Los Angeles County. All participating students endorsed had experience of one or more traumatic events, and current symptoms of PTSD indicating moderate or higher levels of symptom severity (score of 20 on the PTSD Reaction Index)	Waitlist control group	The Modified Traumatic Events Screening Inventory for Children – Brief Form (TESI-C-Brief); The UCLA Posttraumatic Stress Disorder Reaction Index (RI); Children's Depression Inventory (CDI); Screen for Child Anxiety Related Emotional Disorders (SCARED-C); Strengths and Difficulties Questionnaire (SDQ); Social Adjustment Scale-Self-Report for Youth (SAS-SR-Y); The Coping Efficacy measure; The Emotion Regulation Checklist (ERC)	3 months; 6 months	Compared with children in the Delayed condition, children who received Bounce Back immediately demonstrated significantly greater improvements in parent- and child-reported post-traumatic stress and child-reported anxiety symptoms over the 3-month intervention; effects were medium to large in magnitude. Upon receipt of the intervention, the Delayed intervention group demonstrated significant improvements in parent- and child-reported post-	II

traumatic stress, depression and anxiety symptoms. The Immediate treatment group maintained or showed continued gains in all symptom domains over the 3-month follow-up period (6-month assessment).

Santiago et al. (2018)	USA	(7.76)	52	Post-traumatic Stress	Cluster Randomised controlled trial	Eight schools within an urban school district in Illinois from 2013 to 2016. The inclusion criteria were: (1) exposure to trauma (identified using the modified TESI-C-Brief); and (2) current moderate to severe symptoms of PTSD (score of ≥ 25 on the UCLA-RI)	Waitlist control group	Modified Traumatic Events Screening Inventory for Children—Brief Form (TESI-C-Brief); University of California—Los Angeles PTSD Reaction Index (UCLA-RI); Children’s Depression Inventory (CDI); Screen for Child Anxiety Related Emotional Disorders Child Report (SCARED-C); Responses to Stress Questionnaire (RSQ); Strengths and	3 months; 6 months	Symptoms of PTSD were significantly reduced among students who received Bounce Back immediately compared with those on the waitlist. Significant improvements were also observed in active coping skills (problem-solving; emotion regulation; emotional expression) for children who immediately received Bounce Back. Improvements in	II
------------------------	-----	--------	----	-----------------------	-------------------------------------	--	------------------------	---	--------------------	---	----

Difficulties
Questionnaire (SDQ)
Teacher Report

PTSD symptoms and coping were maintained at 6-month follow-up for the immediate treatment group, and the delayed treatment group also showed significant improvement in both areas when they received treatment.

CLIMATE Schools

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Newton et al. (2014)	Australia	(13.1)	764	Substance Use Reduction including Risk Factors (including Mental Health)	Cluster Randomised Controlled Trial	10 secondary schools in Sydney	Non-intervention control group	Truancy rates were determined by asking students; Kessler-6 (K6); Moral Disengagement Scale	6 months; 12 months	Compared to the control group, students in the intervention group showed significant reductions in truancy, psychological distress and moral disengagement up to 12 months following completion of the intervention.	II

COPE (Creating Opportunities for Personal Empowerment)

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Melnyk et al. (2013)	USA	14-16	779	Mental Health Outcomes / Social-Emotional Learning / Academic Outcomes	Cluster Randomised Controlled Trial	11 high schools from two school districts in the southwestern U.S. The choice of schools was designed to provide diversity across race/ ethnicity as well as SES	Active control group (Healthy Teens program)	Healthy Lifestyles Behaviour Scale (HLBS); Academic performance was measured by the students' health course grade obtained from school records; Social Skills Rating System; Youth Risk Behaviour Survey	6 months	There were no significant differences between the groups at 6 months post-intervention on self-reported outcomes of anxiety, depression, or substance use. COPE teens had higher health course grades than control teens.	II
Melnyk et al. (2015)	USA	14-16	779	Body mass index / Depression	Cluster Randomised Controlled Trial	11 high schools from two school districts in the southwestern US. The choice of schools was designed to provide	Active control group (Healthy Teens program)	Beck Youth Inventory II; Measure of Body Mass Index (BMI)	12 months	There was a significant decrease in the proportion of overweight and obese COPE teens from baseline to 12 months as compared to Healthy Teens. For youth who	II

diversity across race/ethnicity as well as SES

began the study with extremely elevated depressive symptoms, COPE teens had significantly lower depression at 12 months compared to Healthy Teens.

Ardic & Erdogan (2017)	Turkey	12-15	87	BMI / Health and Wellbeing Outcomes (including Anxiety and Depression)	Quasi-experimental design with pre-test/post-test control group	Two middle schools in Istanbul	Non-intervention control group	Adolescent Lifestyle Profile (ALP) Scale; Measure of BMI; Beck Depression Inventory; Beck Anxiety Inventory; Healthy Lifestyle Beliefs Scale	12 months	Following the intervention, the adolescents in intervention groups showed improvements in nutritional behaviour, physical activity and stress management. While their nutrition/physical activity knowledge significantly increased, their weight and anxiety symptoms significantly decreased. The effect of the program on BMI, depression and health beliefs of the adolescents were not significant compared with the control group.	II
------------------------	--------	-------	----	--	---	--------------------------------	--------------------------------	--	-----------	--	----



HeadStrong 2.0

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Perry et al. (2014)	Australia	13-16 (14.75)	380	Mental Health literacy / Stigma / Psychological Distress / Suicide Ideation	Cluster Randomised Controlled Trial	5 Catholic and 5 Independent schools in central west New South Wales (5% ATSI)	Non-intervention control group	Depression Literacy Scale (D-Lit); Depression Stigma Scale (DSS); Inventory of Attitudes towards Seeking Mental Health Services (IASMHS); Depression Anxiety and Stress Scales (DASS-21); Moods and Feelings Questionnaire (MFQ)	6 months	Mental health literacy improved and stigma reduced in both groups at post-intervention and follow-up, relative to baseline; however, these effects were significantly greater in the HeadStrong condition. No differences were found within or between groups on attitudes towards help-seeking, psychological distress, or suicidal ideation.	II

Learn 2 Breathe

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Fung et al. (2016)	USA	12-14 (12.7)	19	Reduce internalising and externalising behaviour problems; enhance emotion regulation	Pilot Randomised Controlled Trial	Two Los Angeles schools. Selected students were Latino-American and Asian-American middle school students with elevated mood symptoms	Waitlist control group	Child Behaviour Checklist (CBCL); Youth Self-Report (YSR); Emotion Regulation Questionnaire for Children and Adolescents (ERQ-CA)	3 months	The program led to a reduction in parent-reported externalising problems, youth-reported internalising problems, and youth-reported use of expressive suppression (inhibiting emotional expressive behaviour)	II

Positive Action

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHM RC level
Bavarian et al. (2013)	USA	School years 3 through to 8	1170	Social–emotional learning / Academic Outcomes	Matched-Pair Cluster Randomised Controlled Trial	14 Chicago Public high schools	Non-intervention control group	Student self-report measures of school engagement; Teacher-reported measures of academic ability and motivation; Illinois State Achievement Test (ISAT) academic results	The study evaluated a 6-year period	Positive Action significantly improved growth in academic motivation and mitigated disaffection with learning. There was a positive effect of Positive Action on absenteeism and marginally significant effect on maths performance of all students. There were favourable program effects on reading for African American boys and cohort students transitioning between grades 7 and 8, and on maths for girls and low-income students.	II

Lewis et al. (2013a)	USA	School years 3 through to 8	1170	Emotional Health / Minority Groups	Matched-Pair Cluster Randomised Controlled Trial	14 Chicago Public high schools	Non-intervention control group	Positive and Negative Affect Scale for Children (PANAS); Student Life Satisfaction Scale; Behaviour Assessment System for Children; Social-Emotional and Character Development Scale (SECDs)	7 waves of evaluation over a 6-year period	Students in Positive Action schools, compared with those in control schools, had more favourable change over the course of the study in positive affect and life satisfaction, as well as significantly lower depression and anxiety at the study end point. Program effects for positive affect, depression and anxiety were mediated by more favourable change over time in social-emotional and character development for students in Positive Action schools.	II
----------------------	-----	-----------------------------	------	------------------------------------	--	--------------------------------	--------------------------------	--	--	---	----

Lewis et al. (2013b)	USA	School years 3 through to 8	1170	Social-emotional learning / Problem Behaviours	Matched-Pair Cluster Randomised Controlled Trial	14 Chicago Public high schools	Non-intervention control group	The Normative Beliefs About Aggression Scale; Orpinas and Frankowski's Aggression Scale; Child Problem Behaviour Scales; Risk Behaviour Survey; Parent-report - Aggression and Conduct Problem Subscales of the Behaviour and Assessment System for Children (BASC); School-level aggregated data on disciplinary referrals and suspensions	8 waves of evaluation over a 6-year period	Positive Action mitigated increases over time in (1) youth reports of normative beliefs supporting aggressive behaviours and of engaging in disruptive behaviour and bullying (girls only); and (2) parent reports of youth bullying behaviours (boys only). At the study end point, students in Positive Action schools also reported a lower rate of violence-related behaviour than students in control schools. School-wide findings indicated positive program effects on both disciplinary referrals and suspensions.	II
----------------------	-----	-----------------------------	------	--	--	--------------------------------	--------------------------------	---	--	---	----

Snyder et al. (2013)	USA (Hawaii)	School years 5 and 6	1088	Social-emotional learning / Risk Behaviours	Matched-Pair Cluster Randomised Controlled Trial	20 public elementary (K-fifth or K-sixth) schools (10 matched pairs) on three Hawaiian islands	Non-intervention control group	Student self-report on academic behaviour, negative behaviour; Teacher reports of student behaviour	Evaluation over a 5-year period	Students attending intervention schools reported significantly better academic behaviour and significantly less substance use, violence and sexual activity; boys reported more negative behaviours than girls. This study suggests that a social-emotional and character development program is associated with academic-related behaviours that mediate the positive program effects on substance use, violence and sexual activity.	II
Guo et al. (2015)	USA	9-20	1246	Self-esteem / Aggression / School hassles / Internalisation	Quasi-experimental	Two violent, low-income rural counties	Non-intervention control group	Modified version of the School Success Profile	36 months	Beneficial effects on self-esteem scores and school hassles scores. No significant difference on aggression scores or	III-2

				g symptoms		in North Carolina				internalising symptoms.	
Bavarian et al. (2016)	USA	School years 3 through to 8	1170	Social-emotional learning / Physical Health Behaviours	Matched-Pair Cluster Randomised Controlled Trial	14 Chicago Public high schools	Non-intervention control group	Youth Risk Behaviour Surveillance System; Student self-report on health behaviours; Measure of Body Mass Index (BMI)	8 waves of evaluation over a 6-year period	The findings suggest that Positive Action had a modest positive effect on student's physical health behaviours, BMI and sleep times.	II
Smokowski et al. (2016)	USA	(12.78)	5894	Internalising Symptoms / Aggression / School Hassles / Self-Esteem	Quasi-experimental	Two rural, low income counties in North Carolina	Non-intervention control group	Modified version of the School Success Profile	36 months	Students who received three years of the Positive Action intervention and attended a high number of Positive Action lessons had significantly higher self-esteem scores than controls. No significant effects on aggression, school hassles or internalising	III-2

symptoms were observed.

Duncan et al. (2017)	USA	School years 3 through to 8	1130	Social-emotional learning	Matched-Pair Randomised Controlled Trial	14 Chicago Public high schools	Non-intervention control group	Child Social-Emotional and Character Development Scale; Aggression Scale	Eight waves of evaluation over a 6-year period	The Positive Action program improved children's trajectories of social-emotional and character development and misconduct, regardless of class membership. These findings suggest that Positive Action has the potential to yield comparable benefits across subgroups of youth with differing trajectories of positive and negative behaviours, making it a good candidate for universal application in schools.	II
----------------------	-----	-----------------------------	------	---------------------------	--	--------------------------------	--------------------------------	--	--	---	----

Promoting Alternative Thinking Strategies (PATHS)

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMR C level
Crean & Johnson (2013)	USA	School Years 3 through to 5	779	Aggression / Conduct Problems	Cluster Randomised Controlled Trial	10 schools participated from year one: four were from a northeastern urban school district, four from a northeastern suburban school district, and two from a mid-western suburban school district. In year two of the study, an additional four schools were added to increase power, all four from the northeastern urban school district	Non-intervention control group	Teacher Report on Students (TRS); Teacher-Child Rating Scales (TCRS); Behaviour Assessment Scale for Children-2 (BASC-2) Teacher Version; Child Report (CR); The Aggression Scale (adapted); Frequency of Delinquent Behaviour Survey; The Victimization Scale; Normative	The evaluation tracked the development of students over three years	While control students demonstrated increased normative beliefs about aggression, increased aggressive social problem solving, increased hostile attribution bias and increased aggressive interpersonal negotiation strategies over time, PATHS students remained relatively stable on these outcomes. Teachers of	II

Beliefs About
Aggression
Scale

PATHS
students
reported
significant
positive
change in
student
aggression,
conduct
problems and
acting out
behaviour
problems. The
study results
indicate that
PATHS had a
beneficial
effect on
student
aggressive
outcomes at
the end of fifth
grade.

Shoshani & Steinmetz (2014)	Israel	11-15 (13.68)	103 8	Positive Mental Health	Cluster Randomised Controlled Trial	Two large middle schools located in central Israel	Non-intervention control group	Brief Symptom Inventory (BSI); Rosenberg Self-Esteem Scale (RSE); General Self-Efficacy Scale; Satisfaction with Life Scale (SWLS); Life Orientation Test-Revised (LOT-R)	6 months; 12 months	The findings showed significant decreases in general distress, anxiety and depression symptoms among the intervention participants, whereas symptoms in the control group increased significantly. In addition, the intervention strengthened self-esteem, self-efficacy and optimism, and reduced interpersonal sensitivity symptoms. The intervention was effective in producing a significant	II
-----------------------------	--------	---------------	----------	------------------------	-------------------------------------	--	--------------------------------	---	------------------------	--	----

improvement in mental health both in high-risk and low-risk students. There was no significant difference between the intervention and control groups in changes over time in self-report judgments about their overall life satisfaction.

Schonfield et al. (2015)	USA	School years 3 through to 6	705	Academic Achievement Outcomes	Cluster Randomised Controlled Trial	A school district in a large, urban city in the northeast USA serving a predominantly minority population; all 24 elementary schools within the district were	Non-intervention control group	Primary outcome measure of this study was the State Mastery Test scores, which served as an independently administered measure of	The evaluation tracked the development of students over 4 years	Analyses of odds ratios revealed that students enrolled in the intervention schools demonstrated higher levels of basic proficiency in	II
--------------------------	-----	-----------------------------	-----	-------------------------------	-------------------------------------	---	--------------------------------	---	---	--	----

						included in the study		academic achievement		reading, writing and maths at some grade levels. Specifically, the intervention group showed greater basic proficiency in 4th grade reading and maths, as well as 5th and 6th grade writing.	
Averdijk et al. (2016)	Switzerland	7-8	1675	Externalising Behaviours / Substance Use	Cluster Randomised Controlled Trial	Data were derived from the longitudinal Zurich Project on the Social Development of Children and Youths (z-proso). Zurich is highly affluent, has a low unemployment rate, and a high proportion of socially	4 treatment conditions: (1) PATHS only; (2) Triple P only; (3) PATHS+ Triple P combined; (4) Non-intervention group	Self-report questionnaire on delinquency, substance use, peer aggression, police contacts, conflict resolution; Teacher-reported questionnaire on deviance, conduct	Outcomes were measured at ages 13 and 15 years (60 months; 84 months)	Across 13 outcomes related to delinquency, substance use and antisocial behaviour at ages 13 and 15 years, only two non-negligible effects were found. The first was a reduced prevalence of police contacts	II

disadvantaged
immigrant
minorities

problems;
Social
Behaviour
Questionnaire
(SBQ)

in the PATHS
condition. The
second was a
difference in
competent
conflict
resolution skills
in the
combined
PATHS+Triple
P condition
compared to
the context, but
in the
unexpected
direction:
participants in
the combined
treatment
appeared to be
less competent
than their
control group
peers. All other
effects were
either
statistically
non-significant
or negligible in
size.

Fishbein et al. (2016)	USA	Kindergarten school year	327	Social-emotional learning	Cluster Randomised Controlled Trial	Four schools in high-poverty neighbourhoods of Baltimore City	Non-intervention control group	Teacher-rated Social Competence Scale; Teacher Observation of Child Adaptation-Revised (TOCA-R); ADHD Rating Scale; Student-Teacher Relationship Scale; Peer Relations Questionnaire (PRQ); Academic Competence Evaluation Scales; Peer reports of positive and negative nominations, desire to play with a classmate (play difference),	6 months	Children who received PATHS exhibited significantly greater improvements than control students across all teacher-rated behavioural measures of social competence (i.e., emotion regulation, pro-social behaviour, peer relations) and behavioural problems (i.e., aggression, internalising behaviours, impulsivity and hyperactivity).	II
------------------------	-----	--------------------------	-----	---------------------------	-------------------------------------	---	--------------------------------	--	----------	--	----

and likability
(liking
difference)
after
kindergarten
via individual
sociometric
interviews for
each child;
KBIT-2; Peg-
Tapping Task;
Delay of
Gratification
(DoG) tasks;
The Whack-A-
Mole (WAM)
Go/No-Go
task; FACES
task

Humphrey et al. (2016)	England	7-9	451 6	Social–emotional learning / Mental Health Outcomes	Cluster Randomised Controlled Trial	45 schools located in Manchester	Non-intervention control group	Child self-report version of the Social Skills Improvement System (SSIS); Teacher informant-report version of the Strengths and Difficulties Questionnaire (SDQ); Teacher informant-report version of the Social and Emotional Competence Change Index (SECCI)	24 months	A primary effect of the PATHS curriculum was found, demonstrating increases in teacher ratings of changes in children's social-emotional competence. Additionally, secondary effects of PATHS were identified, showing reductions in teacher ratings of emotional symptoms and increases in pro-social behaviour and child ratings of engagement among children identified as at-risk at baseline.	II
------------------------	---------	-----	----------	--	-------------------------------------	----------------------------------	--------------------------------	--	-----------	--	----

However, primary effects favouring the usual provision group, showing reductions in teacher ratings of peer problems and emotional symptoms, and secondary effects demonstrating reductions in teacher ratings of conduct problems and child ratings of co-operation among at-risk children were also found. Effect sizes were small in all cases. These mixed findings suggest that social and emotional learning

interventions such as PATHS may not be as efficacious when implemented outside their country of origin and evaluated in independent trials.

Novak et al. (2017)	Croatia	7	568	Social-Emotional Learning	Cluster Randomised Controlled Trial	29 schools in Zagreb, Rijeka and Istria	Non-intervention control group	Croatian translations of: Social Competence Scale; School Readiness Questionnaire ; ADHD Rating Scale; Teacher Observation of Classroom Adaptation– Revised; Strengths and Difficulties Questionnaire	12 months	Teachers reported that children in PATHS classrooms, compared with children in usual practice classrooms, showed marginally greater improvement in emotion regulation from the middle of first grade to	II
---------------------	---------	---	-----	---------------------------	-------------------------------------	---	--------------------------------	---	-----------	---	----

; Head Start
REDI

the end of
second grade.
There were no
other
statistically
significant
differences
between
intervention
and control
group children.
When the
sample was
divided into
subgroups of
relatively
higher- and
lower-risk
children, based
on pre-
intervention
patterns of
behaviour, it
became clear
that PATHS
was effective
for lower-risk
children across
almost all
positive and

negative
outcomes.

Panayiotu u et al. (2019)	England	7-9	521 8	Mental Health Outcomes / Peer Relationships	Cluster Randomise d Controlled Trial	45 schools located in Manchester that were representative of norms in England in terms of size, attendance, attainment, ethnicity and the proportion of students identified as having special educational needs	Non- intervention control group	Child self- report version of the Kidscreen-27; teacher-report Strength and Difficulties Questionnaire (SDQ); Self- report Social Skills Improvement System	24 months	PATHS led to a small but significant improvement in children's psychological wellbeing; however, the program had no discernible impact on their peer social support or school connectedness .	II
---------------------------------	---------	-----	----------	---	---	---	--	---	-----------	--	----

Second Step

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Espelage et al. (2013)	USA	(11.24)	3616	Social–emotional learning	Randomised Controlled Trial	Middle school students	Waitlist control	Verbal / relational bullying perpetration, peer victimisation, physical aggression, homophobic name calling perpetration and victimisation, and sexual harassment / violence perpetration and victimisation	12 months	Significant intervention effect for physical aggression only. No significant intervention effects for perpetration or victimisation of bullying, homophobic teasing or sexual violence.	II
Espelage et al. (2015a)	USA	11-13	3658	Social-emotional learning	Randomised Controlled Trial	36 schools in Illinois and Kansas	Active control group "minimal" intervention programming: "Stories of Us"	Bullying, peer victimisation, physical aggression, homophobic name-calling victimisation / perpetration, and sexual harassment victimisation / perpetration	24 months	Significant treatment group reduction in self-report homophobic name-calling victimisation and sexual violence perpetration, but only in one of the intervention states. No reductions in bullying behaviour,	II

physical aggression
or victimisation.

Espelage et al. (2015b)	USA	(11)	3651	Social-emotional learning	Randomised Controlled Trial	36 schools in Illinois and Kansas	Active control group "minimal" intervention programming: "Stories of Us"	Perpetration of bullying, cyberbullying, sexual harassment, homophobic name-calling, delinquency	36 months	No significant direct effects on any outcomes. Significant indirect effects on bullying, cyberbullying, sexual harassment and homophobic name-calling through reductions of delinquency. No effect on sexual harassment.	II
Low et al. (2015)	USA	Not reported	7300	Social-emotional learning	Cluster Randomised Controlled Trial	Kindergarten to 2nd grade students in 61 schools in Arizona and Washington	Waitlist control	Devereux Student Strengths Assessment - Second Step Edition (DESSA-SSE), Strengths and Difficulties Questionnaire (SDQ), Behavioural Observation of Students in Schools (BOSS), Proactive	12 months	Modest improvement in DESSA-SSE skills learning and reductions in SDQ emotional problems and hyperactivity, but effect sizes were small. Moderated effects suggest greatest improvement in	II

								Classroom Management Rating Form (PCM-RF)		social-emotional competence and behaviour for children who started the school year with skill deficits.	
Cook et al. (2018)	USA	(6.2)	7419	Social-emotional learning	Randomised Controlled Trial	Kindergarten to 2nd grade students in 61 schools in Washington State and Arizona	Waitlist control	Behavioural Observation of Students in Schools (BOSS)	Unclear ("Fall to Spring")	No significant effect on behaviour measures.	II
Low et al. (2019)	USA	Not reported	8941	Social-emotional learning	Cluster Randomised Controlled Trial	Kindergarten to 3rd grade students in 61 schools in Arizona and Washington	Waitlist control	Devereux Student Strengths Assessment - Second Step Edition (DESSA-SSE), Strengths and Difficulties Questionnaire (SDQ), Behavioural Observation of Students in Schools (BOSS), curriculum-based measures of oral reading fluency	24 months	Small improvements across emotional symptoms, hyperactivity, skills for learning, and emotion management, but these were all moderated by either pre-test levels or gender. The intervention seems to be most beneficial for those	II

								(RCBM) and math calculation (M-CBM)		with relative skill deficits and may be most effective as a targeted intervention rather than a universal prevention program.	
Upshur et al. (2019)	USA	(4.4)	770	Social-emotional learning	Cluster Randomised Controlled Trial	Preschools serving low-income families	Waitlist control	Cognitive ability, executive functioning, social/emotional skills	Unclear ("Fall to Spring")	No effect on SE skills. Significant effect on EF development.	II

Teen Mental Health First Aid

Author & Year	Country	Age Range (M)	N	Study Focus	Study Type	Setting	Comparator	Outcome Measures	Follow-Up	Outcomes	NHMRC level
Hart et al. (2016)	Australia	15-17 (15.98)	988	Mental Health Literacy / Stigma	Repeated Measures Design (uncontrolled pilot trial)	Four secondary schools in the greater Melbourne area: 1 metropolitan government school, 1 provincial government	Pre-post comparison (no control group)	A survey questionnaire was developed to measure mental health literacy, stigmatising attitudes, Mental Health First Aid behaviours, and the	3 months	Significant improvements were found in mental health literacy, confidence in providing Mental Health First Aid to a peer, help-seeking intentions and	IV

school, 1
metropolitan
independent
school, and 1
provincial Catholic
school

mental health and
help-seeking status
of adolescents;
Kessler-6 was used
to measure student
mental health

student mental
health, while
stigmatising attitudes
significantly reduced.

Appendix B

Table of School-Based Mental Health Programs and Where to Find Information Online

Program Name	Target Audience	Universal / Targeted	Program Facilitator	Delivery Mode	Setting Requirements	Cost	Length	Launched
Adolescent Depression Awareness Program (ADAP)	High school students, parents and teachers	Universal	School personnel (usually trained health education teachers)	Interactive lectures, videos, film assignments, homework, and group activities.	Recommended to be taught in health classes. Instructors are provided with training DVDs.	Unknown	Three hours, typically taught in three consecutive 45 to 60-minute classes, though it can be taught in two 90-minute classes.	1999
ADAP: https://www.hopkinsmedicine.org/psychiatry/specialty_areas/moods/ADAP/index.html								
Aussie Optimism Programme-Positive	Primary and lower secondary schools	Universal	Classroom teacher (one-day workshop attendance required)	Classroom-based. Student booklets include resource sheets, practice exercises and	One-day training workshop for teachers.	\$11.95 per student booklet, training cost unknown	Ten modules, one session per week over a school term.	2003

Thinking Skills (AOP-PTS) posters displaying key messages.

AOP-PTS: <https://healthsciences.curtin.edu.au/schools/psychology/aussie-optimism/>

Body Image in the Primary School (BIPS)	Children aged 4–13 years	Universal	Classroom teacher	Classroom-based. Brainstorming exercises, class discussion, small group work, pair work, game playing, role play and viewing film clips.	Usual classroom	Approx. \$US40 for the teacher training book	Over 60 step-by-step lesson plans are available in the training book.	2011
---	--------------------------	-----------	-------------------	--	-----------------	--	---	------

BIPS: <https://www.crcpress.com/Body-Image-in-the-Primary-School-A-Self-Esteem-Approach-to-Building-Body/Hutchinson-Calland/p/book/9780367188429>

BounceBack! (BB!)	Kindergarten to Year 6	Universal	Classroom teacher	Classroom-based.	Training course required for teachers. Teacher handbook containing lesson plans and teaching strategies.	Online training course for teachers is \$199. Face-to-face training workshops are also available, cost available on request.	Ten units in total. Can be run as a year-long program across an entire school, or individual units can be selected depending on school needs and resources.	2003
-------------------	------------------------	-----------	-------------------	------------------	--	--	---	------

BB!: <https://www.bounceback-program.com/>

Bounce Back Program	Students aged 5 to 11 years	Targeted	Clinicians	10 group-based sessions between the facilitator and students, 1-3 parent sessions and 2-3 individual student sessions with the clinician.	Group or individual-based sessions with a clinician.	Free	10 one-hour sessions with students over a 10-week period (one session per week).	2015
Bounce Back Program: https://bouncebackprogram.org/								
Challenging Horizons Program (CHP)	Middle school students with ADHD	Targeted	CHP counsellor / consultant	Students are paired with a counsellor and participate in group and individual activities designed to target skills they may struggle with, such as organisation, social skills note taking and recreation.	One-on-one pairing with a counsellor.	Unknown	Two weekly, after-school sessions of two hours each over a school year.	1999
CHP: http://oucirs.org/the-challenging-horizons-program/								
CLIMATE Schools (CLIMATE)	Secondary school students	Universal	School / Classroom teacher	Can be accessed over the internet by teachers and students. Three modules are available: (1) Alcohol;	Internet-based program, with teacher-delivered reinforcement.	Teachers must register their school in order to access the program online, but it is unclear if	There are 12 lessons of approximately 40 minutes each, consisting of a 20-minute computer	2009

(2) Alcohol & Cannabis; (3) Psychostimulant & Cannabis.

any cost is involved.

component, completed individually, followed by 20 minutes of teacher-delivered class activities.

CLIMATE: <https://www.climateschools.com.au/>

Creating Opportunities for Personal Empowerment (COPE / COPE TEENS)	Students aged 12–18 years	Universal or targeted to high-risk groups (e.g. high BMI)	School-based mental health professional / Classroom teacher	Class-based, incorporating 15-20 minutes of physical activity	Designed to be taught in usual health classes. One-day training workshop for teachers	Unknown	15 sessions of approximately 40 minutes each, delivered over 15 weeks, designed to be integrated into a school's health course	2002
---	---------------------------	---	---	---	---	---------	--	------

COPE: <https://www.cope2thriveonline.com/>

FRIENDS / FRIENDS for Life	Children aged 8–11 years	Universal	Classroom teacher (training program required)	Class-based, with student workbooks.	One-day teacher training workshop is required.	Unknown	Five sessions of approximately 2-2.5 hours each.	2004
----------------------------	--------------------------	-----------	---	--------------------------------------	--	---------	--	------

FRIENDS for Life: <https://www.friendsresilience.org/friends-for-life-ages-8-11/>

Fun FRIENDS	Children aged 4–7 years	Universal	Classroom teacher (training program required)	Play-based group activities	One-day teacher training workshop is required.	Unknown	Five sessions of approximately 2-2.5 hours each.	2007
Fun FRIENDS: https://www.friendsresilience.org/fun-friends-ages-4-7/								
Get Lost Mr Scary (GLMS)	Children aged 5–7 years	Targeted early intervention (anxiety)	The program is written for two facilitators with a background in psychology, CBT skills and experience working with young children. Parent involvement is considered crucial and as such parents are required to attend three separate parent sessions.	Group based, “pantomime”-like delivery, incorporating puppets, pantomime characters, miniature toys, rhymes, role-plays and bibliotherapy.	One-day facilitator training is required. Parent involvement is a crucial component and parents are required to attend three separate parent sessions.	Unknown, but recent training sessions appear to have cost \$240 per person.	Seven weekly sessions of approximately one hour each.	2001
GLMS: http://s3-ap-southeast-2.amazonaws.com/resources.farm1.mycms.me/apac-nsw-org-au/Resources/Publications/APACS%20NSW%202016%20Get%20Lost%20Mr%20Scary%20E-News.pdf								

Good Behaviour Game (GBG)	Pre-Kindergarten to high school students	Universal	Classroom teacher (in-person training required)	Classroom-based activity	One-day teacher training workshop is required. An initial online training session is also available.	Unknown	Session duration and number is unclear.	1999
---------------------------	--	-----------	---	--------------------------	--	---------	---	------

GBG: <https://www.goodbehaviorgame.org/>

Happy Being Me Co-educational (HBMC)	Designed for girls aged 11–14 years but can be delivered coeducationally	Universal or targeted	Classroom teacher	Classroom-based, incorporating large group, small group and individual activities.	Facilitator training is required, length unknown.	Unknown	Three sessions of prevention and intervention, duration unclear.	2010
--------------------------------------	--	-----------------------	-------------------	--	---	---------	--	------

HBMC: <http://bodypositivity.weebly.com/happy-being-me.html>

HeadStrong 2.0 (HS)	High school Years 9–10	Universal	Classroom teacher	Classroom-based, content is linked to the Health and Physical Education curriculum for Years 9–10.	Curriculum resource and a suite of illustrated PowerPoint presentations and activities are available to teachers.	Free	Five modules, taking approximately 10 hours of class time in total.	2014
---------------------	------------------------	-----------	-------------------	--	---	------	---	------

HS 2.0: <https://www.blackdoginstitute.org.au/education-training/community-and-schools/free-school-resources/headstrong-2.0>

Learning 2 BREATHE (L2B)	Secondary school students	Universal or targeted	Classroom teacher	Classroom or other group setting, incorporates discussion, activities, and group-based mindfulness.	Teacher's curriculum manual is required.	Printed curriculum manual costs approximately \$US70 (\$US40 for an electronic copy).	Comprised of six themes that may be delivered in 6, 12, 18 or more sessions.	2009
L2B: https://learning2breathe.org/								
Media Smart (MS)	Students in late primary or early high school	Universal	The program is suitable to teach in a range of classes including English, Study of Society, Home Economics, Physical Education, Pastoral Care and Home Group	Classroom-based activities	Facilitator training required, three 2-hour workshops.	Unknown	Eight sessions of 50 minutes each, two sessions per week.	2006
MS: https://www.nedc.com.au/support-and-services/organization/86/media-smart								
MoodGYM (MG)	Anybody aged 16 years and older without	Universal	Student can create their own private account	Online, self-help program	Online, must register an	Free	Five interactive modules that are completed in	2006

clinical levels of depression or anxiety.

account in order to access

order. Not all components need to be completed in order to progress, although some quizzes are mandatory (must be completed before gaining access to the next section). Total time required is unknown.

MG: <https://www.moodgym.com.au/>

Penn Resiliency Program (PRP)	Designed for late childhood and early adolescence (10–14 years of age) but has been delivered in other age groups	Universal or targeted	Trained instructor	Group-based learning including individual, partner and group exercises employing a variety of practical learning methodologies. Participants have extensive opportunities to “learn by doing”, where they practise resilience skills and	Delivered by trained instructors. Penn has a train-the-trainer model, with over 60,000 people trained to deliver the program.	Unknown	The full PRP includes a set of 21 empirically validated skills that build cognitive and emotional fitness, strength of character, and strong relationships. The skills included in each program vary based on the needs of the client	1990
-------------------------------	---	-----------------------	--------------------	--	---	---------	---	------

receive feedback
from instructors.

and length of the
program.

PRP: <https://ppc.sas.upenn.edu/services/penn-resilience-training>

Positive Action (PA)	Pre-Kindergarten to high school students	Universal	Classroom teacher	Classroom-based, whole of school. Content is organised into six units by grade level. All grades follow the same six unit concepts.	Training is not necessary. The PA program comprises scripted lessons that are easy to prepare and teach. All materials for each lesson are included in a kit. These materials include posters, games, worksheets and puzzles.	Materials can be ordered online and shipped to Australia. Prices vary, but are approximately \$US400 to \$US550 per kit (for a class of 30 students). Discounts apply for purchases of multiple kits.	Each lesson takes approximately 15 minutes to complete. There are approximately 140 lessons per grade-level kit, designed to be delivered one lesson per day. The entire catalogue contains more than 2000 unique lessons.	1983
----------------------	--	-----------	-------------------	---	---	---	--	------

PA: <https://www.positiveaction.net/>

Promoting Alternative Thinking Strategies (PATHS)	Pre-Kindergarten to Grade 6	Universal	Classroom teacher	Classroom-based. PATHS is based on modules which include a curriculum manual providing step-by-step	Online 3-hour, self-paced introductory training program for teachers. All materials for the	Materials can be ordered online. Costs vary from \$US439 to \$US879 per classroom	Approximately 130 lessons over the course of a school year.	1993
---	-----------------------------	-----------	-------------------	---	---	---	---	------

guidance, fully scripted lessons, coordinated visual aids and classroom handouts.

program are included in the class modules.

module. Quantity discounts apply.

PATHS: <https://pathsprogram.com/>

Resilient Families Program (RFP)	Secondary Schools	Universal	School / Classroom teacher (half-day staff development session required)	Five main components: (1) a teacher-led student curriculum; (2) brief parent education evening; (3) extended parent education sessions; (4) school-wide distribution of parenting strategies handbook; and (5) establishing a community support system for parents	Varies for each component. The teacher-led curriculum requires a half-day training session. Schools have the option of parent education programs being delivered by external facilitators or alternatively having their own staff trained to deliver these programs.	The cost of each component varies from \$600 to \$2000 each.	Varies for each component. The teacher-led curriculum involves 10 sessions of approximately 45-50 minutes each.	2007
----------------------------------	-------------------	-----------	--	--	--	--	---	------

RFP: <https://positivechoices.org.au/documents/rElam8MNfZ/resilient-families-program-information-and-price-list/>

Resourceful Adolescent Program (RAP)	Students aged 12–15 years	Universal. RAP-A & RAP-P also have adaptations designed for indigenous communities	School counsellor / classroom teacher (3-day training required)	Comprises three components that promote individual, family and school protective factors respectively: RAP-A for adolescents RAP-P for parents RAP-T for teachers. RAP-A is designed to be run with groups varying in size from 8 to 16 students.	Training is required, one day for each RAP component. RAP-A and RAP-P training can be completed face-to-face or via video conferencing.	Materials can be ordered online, cost varies depending on the resource. Training costs approximately \$350 per person per RAP component.	RAP-A consists of 11 sessions of approximately 50 minutes each. RAP-P involves three parent sessions, each between 2-3 hours duration. RAP-T involves three 3-hour workshops delivered in the first year, with three 90-minute refreshers to be delivered in subsequent years.	1996
--------------------------------------	---------------------------	--	---	---	---	--	--	------

RAP: <http://www.rap.qut.edu.au/>

Second Step (SS)	Pre-Kindergarten to Grade 8	Universal	School / Classroom teacher	Whole of school, classroom-based lessons direct instruction, group discussions and hands-on activities, dyadic exercises, reflection opportunities, role-	Introductory webinars are available online for teachers. All program materials are included in the kits that are available to purchase.	Resources can be ordered online. Costs vary depending on which unit, grade level, number of kits, and type of licence is purchased, but vary from	Varies depending on grade level, e.g. there are 15 lessons at Grade 6 and 13 lessons each at Grades 7 and 8. Lessons are delivered in one 50-minute or two 25-minute	2008
------------------	-----------------------------	-----------	----------------------------	---	---	---	--	------

playing and individual work.

approximately \$US3500 to \$US4500 for a full program kit for grades K to 5 inclusive. Licences for Grade 6-8 cost \$US219 per class per year.

classroom sessions, taught weekly or semi-weekly throughout the school year.

SS: <https://www.secondstep.org/>

Secret Agent Society (SASoc)	Children aged 8–12 years with range of social and emotional challenges (ASD, ADHD, anxiety, anger management, etc.)	Targeted or Universal	To apply for training, professionals need: A minimum of a higher-level education in a helping or teaching profession and a minimum of six months' professional experience working with children with high-functioning	There are options for individual, small group and class-based programs. The whole of class curriculum maps onto HPE subject area for Years 4 or 5. Comprises a novel multimedia-based curriculum including game play.	Some standalone resources require no training. Small group components require completion of a two-day SAS Facilitator Training Course.	Resources can be ordered online. Prices vary greatly depending on which type of resource is purchased.	Varies depending on program option. Classroom-based sessions consist of ten 90-minute (or twenty 45-minute) group sessions over 10 weeks.	2009
------------------------------	---	-----------------------	--	---	--	--	---	------

ASD and/or other social and emotional challenges.

SASoc: <https://www.sst-institute.net/>

Signs of Suicide (SoS)	Middle and high school students	Universal	School / Classroom teacher	SoS is an all-digital program, comprising a video, guided discussion and brief screening for depression. There are two programs, one tailored for middle schools and one for high schools.	Designed to be delivered in a usual class. No teacher training required.	Costs are based on an annual subscription basis and vary between approximately \$US300 - \$US495 per year.	A single class (about 50 minutes)	2001
------------------------	---------------------------------	-----------	----------------------------	--	--	--	-----------------------------------	------

SoS: <https://www.mindwise.org/>

Teen Mental Health First Aid (MHFA)	Students aged 15–18 years	Universal	MHFA Instructor	Classroom-based by accredited instructors.	Can only be delivered to high schools that have undertaken Youth MHFA Courses for school staff and parents. The Youth MHFA Course teaches adults how to	Unknown. Instructors must have conducted at least three Youth MHFA Courses and can then apply for the three-day teen MHFA Instructor Training Course.	Three sessions of 75 minutes each (approximately 3.5 hours total).	2000
-------------------------------------	---------------------------	-----------	-----------------	--	---	---	--	------

assist adolescents who are developing a mental health problem or in a mental health crisis.

Teen MHFA: <https://mhfa.com.au/courses/public/types/teen>

Youth Aware of Mental Health (YAM)	Students aged 14–16 years	Universal	Accredited YAM instructor	Supported guidance by a trained facilitator, includes role-playing different approaches to problem-solve everyday situations and discuss how these situations make students feel. Emphasis is placed on peer support and information is given on how and where to find professional help if needed. The Black Dog Institute's LifeSpan team have adapted YAM for	Facilitator training is required. YAM instructor courses have been held in Europe, but it is unclear where or when this training is available in Australia.	Unknown	Five one-hour classroom sessions over three weeks.	2014
------------------------------------	---------------------------	-----------	---------------------------	--	---	---------	--	------

Australian school
students.

YAM: <https://www.lifeinmindaustralia.com.au/services/youth-aware-in-mental-health-yam>
