

Rapid Review of the Literature

Mental Health Promotion in Schools and Early Childhood Settings

Extended Review Report

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Executive Summary

<p>Background</p>	<p>This review was commissioned to inform the development of a mental health promoting schools and early childhood settings framework, a key initiative identified under the Victorian government’s Mental Health Reform Strategy.</p> <p>Mental health promotion aims to reduce risk factors for mental ill health (e.g. discrimination, violence, social exclusion, homelessness, socio-economic disadvantage) and to strengthen factors which are known to enhance mental health (e.g. supportive relationships, safe and positive environments, economic security, social participation and community connectedness). Providing age-appropriate interventions is critical to fostering resilience and positive mental health in children and young people. Schools and early childhood settings are significant areas of focus for this approach.</p>
<p>Aims</p>	<p>This rapid review aims to address the following questions in relation to schools and early childhood settings:</p> <ol style="list-style-type: none"> 1. What are the features of the most effective mental health promotion approaches? <ol style="list-style-type: none"> a. Are integrated programs addressing multiple risk factors more effective than those targeting a single risk factor? 2. What are the best indicators for outcome evaluation, and what population-type measures are used? 3. How can these approaches be most appropriately matched against developmental stages (considering also the most appropriate theoretical construct)? 4. What are the critical success factors for these health-promotion programs?
<p>Methods</p>	<p>The rapid review followed a PECOT format which was agreed between the Rapid Review Team and the Victorian Department of Human Services stakeholders. The PECOT, which represents Participants, Exposure, Comparison, Outcomes and Time, adequately frames the rapid review questions so that an appropriate review can be performed.</p> <p>An extensive range of library databases was searched. Only systematic reviews published in the past 10 years were included to capture the most recent evidence related to mental health promotion. No language restrictions were applied.</p>
<p>Results</p>	<p>The overall body of evidence obtained from the systematic reviews was graded as good (B) using the National Health and Medical Research Council (NHMRC) Matrix.</p> <p>The findings were categorised and presented as mental health promotion and preventative approaches, based on the objectives reported by each of the included systematic reviews.</p>

**Evidence on
Mental Health
Promotion**

The evidence on mental health promotion was obtained from reviews which examined programs aimed at improving mental health or well-being of children and adolescents or those which promoted general social, emotional or cognitive skill building. The features of the most effective programs and the outcome measures used to assess their effectiveness in children and adolescents have been grouped into developmental stages: infancy – preschool; elementary or primary school; middle or junior high school; and high school.

**Infancy to pre-school
(This stage
corresponds to
chronological age 0-5
years. Pre-school
children are usually
aged between 3 and
5 or 6 years.)**

Most of the evidence found for this developmental stage was focused on parenting programs, with only one reported education program provided to pre-schoolers. Parenting groups that incorporate behavioural programs based on parental empowerment models were effective in improving the mental health of children from infancy to pre-school years. Parenting activities that consist of role-playing of desired behaviour were effective in changing child behaviour. Other strategies such as parent groups viewing videotapes of desirable and problematic parent-child interactions, a group leader facilitating a discussion about parent-child interactions, and didactic sessions were also found effective. Effectiveness of programs was evaluated based on intelligence quotient, temperament and development using a range of structured questionnaires, and parent reports of their child's behaviour.

A program which initially taught children fundamental skills in language, thinking and listening and then progressed to more complex interpersonal problem-solving was found to reduce inhibition and impulsivity among pre-school children.

**Elementary or
primary
education/school
(This stage generally
corresponds to the
year after pre-school
to grade 6 or 7, or
from age 6 to 12 or
13.)**

Effective approaches to mental health promotion have elements of social and emotional competence promotion through cognitive skill building, encouragement of cooperative and helping activities in school and community, constructive problem-solving, conflict resolution, active parent participation, training of teachers, use of dialogues, discussion, role playing, modelling and games. Ongoing programs (i.e. one year or longer) that utilise a comprehensive and whole-of-school approach led to positive outcomes. Student self-reports and teacher ratings of different psychological outcomes such as self-concept, cognitive and social problem-solving abilities, adaptive behaviour, conflict resolution ability and school misbehaviour (impulsivity, aggression) were used to monitor outcomes. The only reported educational outcome was related to school attachment.

**Middle or junior high
school (This is any
school intermediate
between elementary
and senior high
school. It usually
includes grade 6
though 8 or 9, or
from age 13 to 15.)**

Mental health programs for this developmental stage utilised components of cooperative learning in small groups, social relations program and refusal skills related to alcohol and drug use. Delivery of a program which involved communication exercises, worksheets, peer teaching and a quiz for cooperative learning, social games, artistic efforts, problem-solving, dilemmas, discussions and small group work was effective. Psychological outcomes in terms of students' self-concept, academic self-concept, coping skills, and teacher reports of social adjustment were used to evaluate effectiveness of programs. No educational outcome was reported in any of the programs reviewed in the literature.

Senior high school or secondary education/school (This is from grade 9 or 10 through grade 12, or from age 14 or 15 to 17 or 18)

There were no systematic reviews which examined mental health promotion programs implemented specifically to senior high school students. However, there was one systematic review which reported a program given to this year level but was aimed at suicide prevention. This will be discussed in the section on preventative approaches.

Transition years (This is the transition from primary/elementary school to intermediate/middle/junior high school, or from intermediate to secondary/senior high school)

Transition programs provided prior to junior high school emphasised skill building related to social competence, decision making, group participation, social awareness, problem-solving, and coping with anxiety and difficult situations. Modelling, role playing, discussion and written assignments were used in skills training. Transition from elementary to junior school and from middle school to high school was facilitated by changing the school ecology to be less threatening to students.

Effectiveness of transition programs were monitored using psychological outcomes such as student self-report of ability to cope and teacher reports of behaviour. Other measures such as students' stress level, anxiety, depression and delinquent behaviour were also utilised. No educational outcome has been reported.

Evidence on preventative approaches

Preventative approaches were obtained from reviews which explicitly reported programs/approaches targeting outcomes related to a specific mental health condition such as anxiety, depression, bullying, violent behaviour or eating disorders.

The key findings presented were categorised into anxiety and depression prevention, eating disorder prevention and disruptive behaviour prevention. It is important to recognise the potential overlap between the approaches used to target different mental conditions. For example, programs that were reported to reduce occurrence of anxiety were similar to the approach used by programs aimed to prevent depression. Hence, preventative approaches which were found to have similar framework or targeted comparable outcomes were grouped together.

Programs that incorporate cognitive behavioural training, problem-solving, developing positive relationships with peers and adults and building psychological resilience were found to be effective in preventing and reducing symptoms of anxiety and depression among school-aged children and adolescents. Emphasis on coping strategies to counter self-destructive feelings was found to be effective in preventing suicidal behaviour.

There is currently limited evidence to suggest that any type of program is effective in preventing eating disorders among children and adolescents.

For disruptive behaviour prevention, social and cognitive skills building which

utilised strategies such as anger management, empathy training, impulse control and social problem-solving skills training led to improved social behaviour among elementary and middle school students. Bullying prevention programs provided to primary and secondary students promoted self-esteem and utilised strategies such as improved supervision during breaks, formation of a bullying prevention committee, implementation of specific rules against bullying and discussions with the students (bullies and victims) and their parents.

Only psychological outcomes were reported as indicators of program effectiveness. No educational outcomes were described.

Summary of critical success factors

If mental health promotion or preventative programs are to be implemented, a whole-school approach should be considered. Active parent participation, adequate teacher training and use of effective teaching strategies are also important. Mental health promotion should consider approaches which were found effective for each developmental stage (i.e. infancy to pre-school, elementary (primary), junior (middle), high school). There are also components of effective preventative approaches specific for a condition (i.e. anxiety & depression, disruptive behaviour) which should form part of mental health programs. A comprehensive, well-planned program or approach targeting multiple outcomes and combining elements of mental health promotion and preventative approaches could lead to improvements in children’s resilience and mental well-being.

Introduction

Background

Mental health is more than the absence of mental disorders. It is a state of well-being 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 the community. Mental health is the foundation for well-being and effective functioning for an individual and for a community (World Health Organization 2001).

Child and adolescent mental health problems are an important public health problem in Australia. It is estimated that one in seven children and young people aged between 4 and 17 are affected (Department of Human Services 2006). Childhood mental health problems often continue into adolescence and then adulthood, leading to a range of adverse outcomes such as school drop-out, substance abuse, poor vocational outcomes, family violence and suicide, low productivity, unemployment and crime (Centre for Community Child Health 2006). These problems incur high human and financial costs for families and society in both the short and long term. It is therefore important to recognise the need to raise early universal awareness through the development of various policies including mental health promotion.

Mental health promotion covers a variety of strategies, all aimed at having a positive impact on mental health. Essentially it aims to reduce factors which may impact upon mental well-being (e.g. family violence and disharmony, peer rejection, homelessness, socio-economic disadvantage, discrimination) and to strengthen factors which are known to enhance mental health (e.g. supportive caring parents, positive school climate, economic security, sense of connectedness). Providing age-appropriate interventions for children and youth is critical to fostering resilience and mental health promoting behaviours, along with good parenting and supportive communities.

The Victorian Mental Health Reform Strategy (2009-2019) identifies the promotion of mental health and well-being as a key reform area. This review has been commissioned to inform one of the strategy proposals to develop a mental health promoting schools and early childhood settings framework.

The term 'mental health promotion' may have a different meaning to different stakeholders in this field as it encompasses vastly diverse, but equally important, fields of health and education. Within the health sector, mental health and well-being may primarily focus on health related outcomes, while within the education sector it may include broader outcomes as social and emotional well-being, educational performance, adaptive behaviour, coping etc.

Approaches to Mental Health Promotion

Mental health promotion and prevention identifies primary, secondary and tertiary preventative approaches. Primary prevention aims to remove the causes of a problem or increase the resistance of individuals to them in order to stop the problem occurring in the first place (Barlow et al 2002). Secondary prevention is concerned with the detection and treatment of early signs of illness, as well as treatment of a full blown disorder (Barlow et al 2002; Merry et al 2004). Tertiary prevention is concerned with minimising disability that arises from illness (Merry et al 2004).

Prevention interventions are further subdivided into universal, selective and indicated (Mrazek and Haggerty 1994). Universal programs are targeted to the general public or a whole population group that has not been identified on the basis of individual risk. Selective interventions are targeted to individuals or a subgroup of the population whose risk of developing mental disorder is significantly higher than average. Indicated interventions are targeted to high-risk individuals who are identified as having minimal but detectable signs and symptoms foreshadowing mental disorder but do not meet DSM-IV diagnostic levels (Mrazek & Haggerty 1994).

Aims

This rapid review aims to address the following questions in relation to schools and early childhood settings:

1. What are the features of the most effective mental health promotion approaches?
 - a. are integrated programs addressing multiple risk factors more effective than those targeting a single risk factor?
2. What are the best indicators for outcome evaluation, and what population-type measures are used?
3. How can these approaches be most appropriately matched against developmental stages? (consider also the most appropriate theoretical construct)
4. What are the critical success factors for these health promotion programs?

Methodology

Methods

A rapid review of the literature was undertaken to provide a brief synthesis and judgment of the available research evidence related to the effectiveness of mental health promotion approaches among children 0-18 years of age. For a detailed description of the methodology, please refer to Appendices 1-3.

Results

Overview of results

The search strategy identified 11 studies for inclusion in the rapid review. Appendix 4 shows the process involved in the selection of studies for this review.

The data presented in all systematic reviews were mostly from programs implemented in the United States, with very few from the United Kingdom, Canada, Israel and Australia. Many of the issues and discussion points may be similar but not necessarily identical to the concerns that arise in Australia.

Two CAHE reviewers independently evaluated the methodological quality of each article using the Critical Appraisal Skills Program (CASP) tools <http://www.phru.nhs.uk/pages/PHD/CASP.htm>. Differences in opinion between reviewers were resolved by discussion with a third Rapid Review Team member. The critical appraisal scores are provided in Appendix 5.

Data from all included systematic reviews were extracted using a standardised template. Appendix 6 provides details of all included publications.

Overall findings

In many respects, the goal of promoting mental health and preventing mental disorders or issues are not mutually exclusive and in practice, there is a great deal of overlap between these two. Whilst this is the case, for the purpose of this rapid review, the findings were categorised and presented as mental health promotion and preventative approaches (for anxiety, depression, bullying, violent behaviour or eating disorders), based on the objectives reported by each of the included systematic reviews.

The findings presented below describe the features of the most effective mental health promotion approaches and the outcome measures used to assess their effectiveness in children and adolescents. The systematic reviews considered in this rapid review described the age groups or developmental stages of study participants; hence key findings were grouped according to these stages. Whilst the literature did not explicitly report a specific approach appropriate to each developmental stage, the evidence provided below constitute what was consistently reported at each stage.

Mental Health Promotion

The evidence on mental health promotion was obtained from reviews which examined programs aimed at improving mental health or well-being of children and adolescents or those which promoted general social, emotional or cognitive skill building. The programs described in the reviews appeared to have targeted multiple protective factors – individual factors (e.g. problem-solving skills, social competence, social skills and good coping style), family factors (e.g. supportive parents, family harmony), school context (e.g. positive school climate), school life events or situations (availability of opportunities at critical transition years). There

was emphasis on enhancing those factors that gave children or adolescents resilience to withstand stressors or negative events. Whilst mental health promotion is also known to reduce risk factors, the programs described in the literature were directed towards improving protective factors rather than addressing the risk factors.

Infancy to pre-school (This stage corresponds to chronological age 0-5 years. Pre-school children are usually aged between 3 and 5 or 6 years.)

Key Findings (Infancy to pre-school)
<ul style="list-style-type: none"> • Effective approaches to mental health promotion consisted of parenting programs which incorporate a behavioural framework. Successful programs consisted of group activities which involved role playing, didactic sessions with a facilitator and viewing of videos with both desirable and problematic behaviours. An educational program which taught children skills related to language, thinking and listening followed by more complex interpersonal problem-solving was also found effective in improving children’s behaviour. • Much of the literature focused on promoting protective factors for mental health rather than explicitly addressing risk factors (single or multiple). Therefore, based on current evidence, it is unclear whether addressing single or multiple risk factors is effective for mental health promotion. • Only psychological outcomes were used to determine effectiveness of programs. Measures of outcomes were based on the mother’s reports of children’s behaviour using a variety of structured questionnaires. Outcomes for the educational program were related to cognitive problem-solving abilities and behaviour such as inhibition and impulsivity. No educational outcome was reported in the literature.

The search yielded two systematic reviews (Barlow et al 2002; Thomas et al 1999) on parenting programs and one which reported on an educational program for pre-schoolers (Greenberg 2001). The aim of Barlow et al’s (2002) systematic review on parenting was twofold: first was to determine whether group-based parenting programs are effective in improving the mental health of children less than three years of age, and second was to assess whether the same intervention has a role in the primary prevention of mental health problems in children of the same age group (Barlow et al 2002). The findings of this review support the short-term use of behavioural parenting programs to *improve mental health*, specifically focussing on emotional and behavioural adjustment, of children under the age of three years. The outcome evaluation was based on mother reports of infant behaviour using the following instruments: Eyberg Child Behaviour Inventory (ECBI), the Behaviour Screening Questionnaire (BSQ), the Child Behaviour Questionnaire (CBQ) and the Dyadic Parent-Child Interaction Coding System (DPICS). However, there is currently insufficient evidence to reach any firm conclusions regarding the role of parenting programs in the *primary prevention* of mental health problems. Only one of the programs evaluated in the review was clearly provided on a primary preventive basis. Whilst this study found that parenting programs can be effective in the primary prevention of sleep problems in infants, the parents who took part in the study were not representative of the

wider population of parents due to the small sample size.

Thomas et al (1999) conducted a systematic review which examined the effectiveness of parenting groups with professional involvement in improving parent and/or child health/development outcomes. The target population was parents of children newborn to six years of age. This review highlighted that behavioural programs based on parental empowerment models were effective immediately after implementation and over time. These programs consisted of the following:

- Weekly sessions (a total of 8–9)
- Parent groups viewing videotapes of desirable and problematic parent-child interactions
- Group leader facilitating a discussion about parent-child interactions, encouraging problem-solving and parental empowerment
- Didactic sessions
- Role playing of desired behaviour

It was shown that programs which include role playing have been more effective in changing child behaviour than general discussion. Children’s behaviour, intelligence quotient, temperament and development were evaluated using a range of outcome measures.

Behaviour	Child Behaviour Checklist (CBCL), Eyberg Child Behaviour Inventory (ECBI), Goal Attainment Scaling (GAS), DPICS-R, CII, RBPC (mother’s perceptions of child behaviour), Behaviour Checklist for Infants and Children (BCIC), Toddler Temperament Scale (TTS), Negative and Positive Behaviour Counts (parental report), Parent Daily Report (PDR).
IQ	Stanford Binet IQ Score and Weschler Preschool & Primary Intelligence Scale (WPPIS)
Temperament	Parent Temperament Questionnaire
Development	Bailey Scale of Infant Development, Receptive Expressive Emergent Language Scale, Vineland Adaptive Behaviour Scales

Greenberg et al (2001) reported the effectiveness of a specific program called Interpersonal Cognitive Problem Solving (ICPS) which taught children fundamental skills related to language, thinking, and listening and progressed to practicing more complex interpersonal problem-solving through dialogues and role-playing. This program resulted in improved cognitive problem-solving abilities and reduced inhibition and impulsivity, with effects lasting through one year of follow-up.

Elementary or primary education/school (This stage generally corresponds to the year after pre-school to grade 6 or 7, or from age 6 to 12 or 13.)

Key Findings (Elementary or primary school)

- Effective approaches to mental health promotion appeared to:
 - Have elements of social and emotional competence promotion through cognitive skill building; encouragement of cooperative and helping activities in school and community; constructive problem-solving; conflict resolution; comprehensive and whole-of-school approach; active parent participation; training of teachers; use of dialogues, discussion, role playing, modelling and games
 - Be implemented for long duration (i.e. one year or longer)
- Targeting multiple risk factors was considered important for many of the programs but whether this is more effective than addressing a single risk factor is not evident in the literature.
- Measures of outcomes were based on student self-reports or teacher ratings or reports of:
 1. Psychological outcomes
 - Self-concept
 - Cognitive and social problem-solving abilities
 - Adaptive behaviour
 - Conflict resolution ability
 - School misbehaviour – impulsivity, aggression
 2. Educational outcomes
 - School attachment

Three systematic reviews reported effectiveness of different universal prevention and mental health promotion programs delivered to elementary students (Wells et al 2001; Greenberg et al 2001; Bayer et al 2008). Two of these reviews examined both targeted and universal programs for children aged 0-8 and 5-18 respectively (Bayer et al 2008; Greenberg et al 2001) and one focused only on universal approaches for elementary to high school students (Wells et al 2001). Only the findings for universal programs delivered specifically to elementary students are reported below.

Several programs with positive outcomes for elementary children were reported. These include Interpersonal Cognitive Problem Solving – ICPS (Greenberg et al 2001), Promoting Alternative Thinking Strategies – PATHS (Wells et al 2001; Greenberg et al 2001), Resolving Conflict Creatively Programme – RCCP (Wells et al 2001; Greenberg et al 2001), Child Development Project – CDP (Wells et al 2001; Greenberg et al 2001), School Development Project – SDP (Wells et al 2001), Good Behaviour Game – GBG (Wells et al 2001; Greenberg et al 2001; Bayer et al 2008), Linking Interests of Families and Teachers – LIFT (Greenberg et al 2001) and Seattle Social Development Project – SSDP (Greenberg et al 2001).

Two of these programs highlighted the use of *cognitive skill building* to promote

interpersonal or social and emotional competence (ICPS; PATHS). Encouragement of cooperative and helping activities in school and community with enhanced understanding of other people was the focus of CDP. RCCP promoted conflict resolution and constructive problem-solving in the curriculum. Comprehensive and whole-of-school approaches which address multiple risk and protective factors and target not just the individual student but also their peers and families were considered important by several programs such as SDP, GBG, LIFT and SSDP. Training of teachers was fundamental to most of the programs (PATHS, RCCP, CDP, and SSDP). Dialogues, discussion, role playing, modelling were common strategies utilised by some of the programs (ICPS, RCCP, and CDP). Parents’ activities were organised in two programs – PATHS and SDP. The majority of programs were ongoing for two to six years of implementation (RCCP, CDP, SDP, GBG, and SSDP). The PATHS program was provided for three terms while the LIFT was given for 20 sessions. No specific duration of implementation was reported for ICPS.

Outcomes reported by the different programs were mostly psychological (cognitive or behavioural), with very few educational outcomes such as those related to school attachment (SSDP). Psychological outcomes range from self-reports of self-concept and conduct problems to teacher reports of inhibition, impulsivity, aggression, and adaptive behaviour. Cognitive problem-solving abilities were also measured in some of the programs (ICPS, PATHS, CDP).

Middle or junior high school (This is any school intermediate between elementary and senior high school. It usually includes grade 6 through 8 or 9, or from age 13 to 15.)

Key Findings (Middle or junior high school)
<ul style="list-style-type: none"> • Effective approaches to mental health promotion utilised components of cooperative learning in small groups, social relations programs and refusal skills related to alcohol and drug use. Delivery of a program which involved communication exercises, worksheets, peer teaching and quiz for cooperative learning, social games, artistic efforts, problem-solving, dilemmas, discussions and small group work was effective. • Much of the literature focused on promoting protective factors for mental health rather than explicitly addressing risk factors (single or multiple). Therefore, based on current evidence, it is unclear whether addressing single or multiple risk factors is effective for mental health promotion. • Only psychological outcomes were used to establish effectiveness of programs. Measures of outcomes were based on student self-reports of self-concept, academic self-concept, coping skills, and teacher reports of social adjustment.

Two systematic reviews considered programs provided to middle school or junior high school students (Greenberg et al 2001; Wells et al 2001). The program reported by Wells et al (2001) utilised a classroom-based approach with strategies that included cooperative learning in small groups, social relations program (provision of conditions that foster positive attitude change and acceptance of other group members) and a combination of both. The delivery of this program involved detailed lesson plans with communication exercises, worksheets, peer

Senior high school or secondary education/school (This is from grade 9 or 10 through grade 12, or from age 14 or 15 to 17 or 18.)

teaching and quiz for cooperative learning, whilst the social program comprised of social games, artistic efforts, problem-solving, dilemmas, discussions and small group work. This program was delivered intermittently for four months and the outcomes measured were social self-concept and academic self-concept.

Another school-based program aimed at promoting social competence and refusal skills related to alcohol and drug use was reported in a systematic review by Greenberg et al (2001). This 20-session curriculum resulted in positive outcomes related to coping skills, ability to generate alternative responses to hypothetical situations and teacher reports of several measures of social adjustment (conflict resolution with peers, impulse control, and popularity).

No systematic review which examined mental health promotion programs implemented specifically to senior high school students was identified. However, there was one systematic review (Wells et al 2001) which reported a program given to this year level but was aimed at suicide prevention. This will be discussed later in the "Preventative Approach, under the Anxiety and Depression section." Greenberg et al (2001) have reviewed programs involving a broad age range (5-18 years) and therefore have considered those which were trialled among high school students. However, the programs reported in the review were targeted to those who were at risk for developing a depressive disorder, at risk of committing suicide, youth exhibiting a combination of anxiety, depression and poor anger control and those with self-reported anxiety. As these are all targeted programs, findings will not be reported in this rapid review.

Transition years (This is the transition from primary school (elementary) to intermediate school [middle or junior high school] or from intermediate to secondary school [senior high school])

Key Findings (Transition years)
<ul style="list-style-type: none"> • Effective approaches to mental health promotion emphasised skill building related to social competence, decision making, group participation, social awareness, problem-solving, and coping with anxiety and difficult situations. Modelling, role playing, discussion and written assignments were effective in skills training. Changing the school ecology to be less threatening to students facilitated transition from elementary to junior school and from middle school to high school. • Much of the literature focused on promoting protective factors for mental health rather than explicitly addressing risk factors (single or multiple). Therefore, based on current evidence, it is unclear whether addressing single or multiple risk factors is effective for mental health promotion. • Effectiveness of transition programs were monitored using psychological outcomes such as student self-report of ability to cope and teacher reports of behaviour. Other measures such as students' stress level, anxiety, depression and delinquent behaviour were also utilised. No educational outcome has been reported.

Two systematic reviews reported outcomes of three programs (Greenberg et al 2001; Wells et al 2001) that facilitated transition from elementary to junior high

Preventative approach

school or from junior high school to senior high school.

Two of the transition programs were provided prior to junior high school and these programs emphasised skill building related to social competence, decision making, group participation, social awareness, problem-solving, and coping with anxiety and difficult situations. One of these programs involved discussion with junior high school students and staff and skills training using modelling, role playing, discussion and written assignments. Outcomes were measured using student self-report of coping with stressors related to junior school transition and teacher reports of behaviour.

Both systematic reviews reported a program which focused on changing the school ecology to be less threatening to students during the transition from elementary to middle school or from middle school to high school. It aimed to reduce the complexity of the new school environment, to redefine the role of the homeroom teacher as more supportive, and to create a stable support mechanism through a consistent set of peers and classmates. The benefits from the program were measured in terms of the students' stress level, anxiety, depression and delinquent behaviour.

The duration of transition programs were variable, with one administered only for eight weeks and other programs provided for one to two years. As to whether this difference in duration has an impact on the magnitude of effectiveness was not reported in the reviews.

Preventative approaches were obtained from reviews which explicitly reported programs/approaches targeting outcomes related to a specific mental health condition such as anxiety, depression, bullying, violent behaviour or eating disorders.

The key findings presented below were categorised into anxiety and depression prevention, eating disorder prevention and disruptive behaviour prevention. It is important to recognise the potential overlap between the approaches used to target different mental conditions. For example, programs that were reported to reduce occurrence of anxiety were similar to the approach used by programs aimed to prevent depression. Hence, preventative approaches which were found to have a similar framework or targeted comparable outcomes were grouped together.

1. Anxiety and depression prevention

Anxiety and depression both affect the mood of a person. Whilst they are different in many aspects, anxiety and depression generate emotions such as hopelessness, despair and anger. Extreme depression, especially when exacerbated by anxiety, can lead to suicidal behaviour. The findings presented below is a synthesis of reviews which examined programs aimed at preventing anxiety, depression and suicide.

There were four systematic reviews which examined the effectiveness of programs designed to prevent anxiety and/or depression among school-aged children and adolescents (Greenberg et al 2001; Merry et al 2004; Waddell et al 2007; Neil & Christensen 2007).

One of the most noteworthy programs which was consistently reported as effective was the FRIENDS program developed in Australia. It employed cognitive behavioural training to promote children's emotional resilience. It involves educational self-development concepts such as self-esteem, problem-solving, psychological resilience, self-expression and building positive relationships with peers and adults. This program consisted of 12 sessions (10 sessions with 2 booster sessions) run by trained teachers during normal class times. A variety of questionnaires/scales were used to monitor outcomes, such as Spence Children's Anxiety Scale, Revised Children's Manifest Anxiety Scale, Anxiety Disorders Interview Schedule for Children and Depression-Children's Depression Inventory. The "Problem Solving for Life" program was another school-based program designed to prevent anxiety and depression among adolescents. This program employed two approaches – cognitive restructuring and problem-solving skills. A variety of outcomes were used to measure its effectiveness: Beck Depression Inventory for depressive symptoms; Anxiety Disorders Interview Schedule for Children for anxiety symptoms; Child and Adolescent Social and Adaptive Functioning Scale for social functioning and Social Problem-Solving Inventory for problem-solving skills. Another program which utilised the same approach but has added *anxiety management* in its methods was the Stress Inoculation Model. Trait anxiety, anger and depression symptomatology were measured to monitor the program's effectiveness.

The Resourceful Adolescent Program was developed to prevent depression in adolescents. It consisted of programs that provided support to adolescents, parents and teachers in order to build psychological resilience or resourcefulness. The student program aimed to improve the coping skills of teenagers while the parent or family program targeted protective factors such as increasing harmony and preventing conflict. The teacher program, on the other hand, promoted *school connectedness*. The benefits from the program were measured using self-reports of depressive symptomatology.

One of the identified systematic reviews (Wells et al 2001) reported the effectiveness of a suicide prevention program trialled among adolescent (high school) students. The program, provided for seven weeks (two-hour duration per week), was based on the notion that a gradual, controlled confrontation and exploration of inner experiences and life difficulties related to suicidal behaviour accompanied by an emphasis on coping strategies can immunise against self-destructive feelings. Outcomes were measured using a student questionnaire which reflected suicidal tendencies, hopelessness, ego identity, and coping ability.

2. Eating disorder prevention

Only one of the included systematic reviews (Pratt & Woolfenden 2002) specifically

examined the effectiveness of prevention programs for eating disorders in children and adolescents. The results of the review based on randomised controlled trials do not allow any firm conclusions to be made about the effectiveness of eating disorder prevention programs in children and adolescents in the general population (Pratt & Woolfenden 2002).

3. Disruptive behaviour prevention

Disruptive behaviour can be defined as any behaviour that disturbs, interferes with, disrupt or prevents any normal operation or function in the school. Classroom misconduct is a good example of disruptive behaviour and may include bullying and violent acts.

Two systematic reviews which examined violence prevention programs among elementary and middle school children were identified (Greenberg et al 2001; Wells et al 2001). The mental health programs utilised an approach that incorporates social and cognitive skills building to promote non-violent conflict resolution and positive communication. One of the effective programs employed strategies such as anger management, empathy training, impulse control and social problem-solving skills. The teaching methods used for this program include role playing, modelling by teachers, skill practice, feedback and reinforcement of appropriate skills. Another program which takes on a similar approach includes activities such as team building, small group work, role playing and relaxation techniques. Behavioural observation, school disciplinary data, decision-making knowledge and use of peer mediation were used to assess anti-social or pro-social behaviour.

The systematic review by Greenberg et al (2001) reported a bullying prevention program which can be implemented in primary and secondary schools. Components of this program include:

- Holding a school conference day to discuss potential intervention activities
- Improved supervision at break times
- Formation of a bullying prevention coordinating committee to oversee the intervention
- Development of a coordinated structure for monitoring student behaviour during periods of increased student interaction
- Establishing and enforcing specific rules against bullying and holding regular classroom meetings to discuss bullying and other anti-social behaviour
- Individual discussion with bullies, victims and parents
- Encouragement of a philosophy to promote self-esteem, supportive values and responsibility for health decisions

Outcomes of this program were reported using a structured instrument – the Bullying and Victimization Questionnaire – and the observed anti-social behaviour (vandalism, fighting, drunkenness, theft and truancy) of students.

Critical success factors

The critical success factors for mental health promotion or primary prevention of mental disorders, whilst not explicitly reported in the included systematic reviews can be inferred from the systematic review findings:

- A **whole-school approach** that involves students, teachers, families (particularly the parents) and the community led to positive mental health outcomes among school-age children.
- Positive evidence of effectiveness was obtained for programs that involved **active parent participation** during the childhood years (infancy-early childhood [pre-school]-elementary).
- Effective mental health promotion programs have utilised varied teaching methods such as **modelling, problem-solving, discussion and role playing**.
- Teachers received **adequate training** to ensure accurate implementation of the program.

The table below highlights some of the key elements underpinning effective programs/approaches for mental health promotion for each developmental stage.

Stage	Elements of programs with evidence of effectiveness
Infancy – pre-school	<ul style="list-style-type: none"> • Parenting groups that utilise behavioural programs based on parental empowerment • Teaching of fundamental skills to pre-schoolers such as those related to language, thinking, listening, and then progressing to more complex interpersonal problem-solving
Elementary or primary education	<ul style="list-style-type: none"> • Promotion of social and emotional competence through affective, behavioural and cognitive skill building • Cooperative and helping activities in the school and community • Constructive problem-solving • Conflict resolution
Middle or junior high school	<ul style="list-style-type: none"> • Cooperative learning in small groups • Social relations program or promotion of social competence • Refusal skills related to alcohol and drug use
Transition years	<ul style="list-style-type: none"> • Skill building related to social competence, decision making, group participation, social awareness, problem-solving, coping with anxiety and difficult situations • Changing of school ecology to be less threatening to students during transition

The table below underscores the key elements of effective preventative programs/approaches.

Condition	Elements of programs with evidence of effectiveness
Anxiety and Depression	<ul style="list-style-type: none"> • Cognitive behavioural training, problem-solving, developing positive relationships with peers and adults and building psychological resilience • For suicidal behaviour – building on coping strategies to counter self-destructive feelings
Disruptive behaviour	<p>Violent behaviour</p> <ul style="list-style-type: none"> • Social and cognitive skills building • Strategies such as anger management, empathy training, impulse control and social problem-solving skills training <p>Bullying</p> <ul style="list-style-type: none"> • Promotion of self-esteem • Strategies such as improved supervision during breaks, formation of a bullying prevention committee, implementation of specific rules against bullying and discussions with the students (bullies and victims) and their parents.

NHMRC Body of Evidence Matrix

The National Health and Medical Research Council (NHMRC) have developed an approach for assessing the body of research evidence across various dimensions, based on which recommendations could be formulated. Below is a summary of evidence obtained from the rapid review of the literature.

Component	Evidence Grading
<p>Evidence base</p> <p><i>The evidence base is assessed in terms of the quantity, level and quality (risk of bias) of the included studies.</i></p>	A
<p>Consistency</p> <p><i>The consistency component of the 'body of evidence' assesses whether the findings are consistent across the included studies.</i></p>	A
<p>Clinical impact</p> <p><i>Clinical impact is a measure of the potential benefit from application of the findings to a population.</i></p>	B
<p>Generalisability</p> <p><i>This component covers how well the subjects and settings of the included studies match those of the recommendations.</i></p>	B
<p>Applicability</p> <p><i>This component addresses whether the evidence base is relevant to the Australian health care setting generally.</i></p>	B

The overall body of evidence using the NHMRC Matrix was good (B). Refer to Appendix 3 for the complete matrix.

Discussion points

The evidence obtained from the systematic reviews highlighted the features of the most effective mental health promotion approaches for children at different developmental stages and also the effective elements of different preventative approaches. Whilst not explicitly reported as critical success factors, the review findings consistently described the fundamentals of mental health promotion and primary prevention strategies.

As indicated in the methods section, this rapid review has taken an approach that involves Steps 1 and 4 of the “**CAHE approach to literature inclusion in Rapid Reviews**” shown in Appendix 1. Step 1 involves review of systematic reviews and this comprised the core body of evidence which addressed the review questions. Step 4 is a case study comparison of specifically identified literature relevant to Victorian context.

As an example of how the evidence obtained from this rapid review can be translated into practice, the Gatehouse project was used as a case study. This project aimed to promote emotional well-being among students in the Victorian secondary schools. Patton et al (2006) tested the efficacy of promoting social inclusion in schools (through the Gatehouse Project intervention) in reducing health risk behaviours and in improving emotional well-being. Four years after the introduction of the intervention, marked health risk behaviours were reported by approximately 15% of students who received the intervention, compared with 20% of those who did not, which was an overall reduction of one quarter. This difference arose from lower rates of substance use, antisocial behaviour, and early initiation of sexual intercourse by students in the intervention schools.

The effectiveness of this approach was supported by findings from a study conducted by Bond et al (2006), which examined associations between social relationships and school engagement in early secondary school and mental health, substance use, and educational achievement. Results have shown that having both good school connectedness and good social connectedness is associated with the best outcomes. These were the premises by which the Gatehouse project has been implemented.

Below are the elements of the Gatehouse Project matched against the findings from the systematic reviews:

Elements of the Gatehouse project (Patton et al 2006)	Evidence from Synthesised Systematic Reviews
<i>Implemented for a two-year period</i>	The Gatehouse project as reported by Patton et al (2006) was trialled among 8 th grade students. The effective programs for this academic level reported in the systematic reviews were either implemented only for four months or have involved 20 sessions. It is not clear in the literature whether

	a longer duration of implementation for this academic level always leads to better outcomes. Among elementary students however, the majority of the successful programs were implemented for one year or longer.
Feedback from a student survey about security (a student's personal sense of safety), communication with teachers, and broader participation in school life	No evidence from the literature can be matched against this element
Within each school, recruitment of staff involved in administration, student welfare, curriculum, or all 3 to a coordinating action team with a focus on school policies and professional practice of teachers	✓ Formation of a coordinating committee (evidence obtained was specific to the bullying prevention program)
Training of teachers in the selected strategies	✓ Teachers received adequate training to ensure accurate implementation of the program.
A curriculum element that focused on problem-solving in situations in which young people commonly experience emotional difficulties	✓ Effective mental health promotion programs have utilised varied teaching methods such as modelling, problem-solving , discussion and role playing.

The components of the intervention described by Patton et al (2006) are generally supported by evidence from systematic reviews.

In summary, if mental health promotion or preventative programs are to be implemented, a whole-school approach should be considered. Active parent participation, adequate teacher training and use of effective teaching strategies are also important. Mental health promotion should consider approaches which were found effective for each developmental stage (i.e. infancy to pre-school, elementary (primary), junior (middle), high school). There are also components of effective preventative approaches specific for a condition (i.e. anxiety & depression, disruptive behaviour) which should form part of mental health programs. A comprehensive, well-planned program or approach targeting multiple outcomes and combining elements of mental health promotion and preventative approaches could lead to improvements in children's resilience and mental well-being.

Identified gaps in the literature

This rapid review also determined whether there was information regarding the following:

1. Whether the interventions promote health equity
 - There is an absence of data reporting whether or not mental health

promotion programs promote health equity.

2. Cost effectiveness of the interventions

- The majority of the included systematic reviews did not report cost-effectiveness of the different mental health programs. This area has been identified as requiring further research and analysis.
 - There was one systematic review which briefly reported cost-effectiveness and this was focused only on parent education programs (Bayer et al 2008). According to this review, group programs were found to be up to eight times more cost-effective than individual programs alone.
3. Most effective way to link this type of intervention with other mental health promotion activities, other chronic disease prevention activities and also early intervention and therapeutic approaches to maximise existing resources, capacity, systems and partnerships.

- The evidence obtained from systematic reviews did not provide sufficient information to address this issue.

Limitations

There are some key limitations to this rapid review. Firstly, owing to the nature of rapid reviews, selection and interrogation of literature was controlled (i.e. limited only to the best available evidence). Secondly, whilst all attempts were made to ensure rigour in the searching process, it is possible that new and emerging evidence may be identified in the future. The advisory group was contacted as part of the validation of the search and literature retrieval process. Due to the transparent and rigorous nature of the review process, and the inclusion of numerous iterative steps in validating key processes involved in this review, it is postulated that the impact of any missing publications has been minimised.

References

Background literature

Barlow J, Stewart-Brown S (2000): Behaviour problems and parent education programs. *Developmental and Behavioral Pediatrics*; 21: 356–370.

Centre for Community Child Health (2006): *Mental health problems in children on the rise*. Melbourne: Royal Children's Hospital.

DeJong W (1994): *Building the peace: The resolving conflict creatively program*. Washington, DC: U.S. Department of Justice, National Institute of Justice.

Department of Human Services (2006): *Victorian Child Health and Wellbeing Survey*. Melbourne: Department of Human Services.

Mzarek PJ, Haggerty RJ (1994): *Reducing risks for mental disorders: Frontiers for preventive intervention research*. Washington DC: National Academy Press.

Sawyer MG, Arney FM, Baghurst PA, Clark JJ, Graetz BW, Kosky RJ, Nurcombe B, Patton GC, Prior MR, Raphael B, Rey JM, Whaites LC, Zubrick SR (2001): The mental health of young people in Australia: key findings from the child and adolescent component of the national survey of mental health and well-being. *Australia and New Zealand Journal of Psychiatry*; 35(6): 806-14.

Stewart-Brown S (1998): Public health implications of childhood behaviour problems and parenting programmes. In Buchanan A, Hudson B (eds) *Parenting, Schooling & Children's Behaviour: Interdisciplinary Approaches*. Aldershot: Ashgate Publishing.

Turner W, Macdonald G, Dennis JA (2007): Behavioural and cognitive behavioural training interventions for assisting foster carers in the management of difficult behaviour. *Cochrane Database of Systematic Reviews*; Issue 1: Art. No.: CD003760.

Department of Human Services Victoria (2009): *Victorian Mental Health Reform Strategy 2009*. Melbourne: Mental Health and Drugs Division, Department of Human Services.

Welsh J, Bierman K (1995): *Social Competence*. *Gale Encyclopaedia of Childhood and Adolescence*. Detroit: Thomson Gale. Available: http://findarticles.com/p/articles/mi_g2602/is_0004/ai_2602000487/ Accessed 2009 August 10.

World Health Organization (2001): *World Health Report 2001 – Mental Health: New Understanding, New Hope*. Geneva: World Health Organization. Available: <http://www.who.int/whr/2001/en/index.html> Accessed 2009 June 11.

Technical literature

Burls A (2009): *What is critical appraisal?* Newmarket, UK: Hayward Group. Available: http://www.medicine.ox.ac.uk/bandolier/painres/download/whatis/What_is_critical_appraisal.pdf Accessed 2009 August 11.

National Health and Medical Research Council (2008): *NHMRC additional levels of evidence and grades for recommendations for developers of guidelines: Stage 2 consultation*. Available: http://www.nhmrc.gov.au/guidelines/_files/Stage%20%20Consultation%20Levels%20and%20Grades.pdf Accessed 2009 June 11.

Merlin T, Weston A, Toher R (2009): Extending an evidence hierarchy to include topics other than treatment: revising the Australian 'levels of evidence'. *BMC Medical Research Methodology*; 9:34.

Public Health Resource Unit (2007): Critical Appraisal Skills Program (CASP) website. Available: <http://www.phru.nhs.uk/pages/PHD/CASP.htm> Accessed 2009

Watt A, Cameron A, Sturm L, Lathlean T, Babidge W (2008a): Rapid reviews versus full systematic reviews: An inventory of current methods of practice in health technology. *International Journal of Technology Assessment in Health Care*; 24(2): 133-139.

Articles for case study comparison

Bond L, Butler H, Thomas L, Carlin J, Glover S, Bowes G, Patton G (2006): Social and School Connectedness in Early Secondary School as Predictors of Late Teenage Substance Use, Mental Health, and Academic Outcomes. *Journal of Adolescent Health* 40: 357.e9- 357.e18.

Patton G, Bond L, Carlin J, Thomas L, Butler H, Glover S, Catalano R, Bowes G (2006): Promoting Social Inclusion in Schools: A Group-Randomized Trial of Effects on Student Health Risk Behavior and Well-Being. *Journal of Public Health*; 96: 1582–1587.

Included articles

Adi Y, Kiloran A, Janmohamed K, Stewart-Brown S (2007): *Systematic review of the effectiveness of interventions to promote mental wellbeing in primary schools*. Coventry, UK: University of Warwick.

Barlow J, Parsons J, Stewart-Brown S (2002): *Systematic review of the effectiveness of parenting programmes in the primary and secondary prevention of mental health problems*. Oxford, UK: University of Oxford.

Bayer J, Hiscock H, Scalzo K, Mathers M, Macdonald M, Wake M (2008): *Growing the evidence base for early intervention for young children with social, emotional and/or behavioural problems: systematic literature review*. Melbourne: Victorian Department of Human Services.

Greenberg MT, Domitrovich C, Bumbarger B (2001): The Prevention of Mental Disorders in School-Aged Children: Current State of the Field. *Prevention & Treatment*; 4(1): 1-62.

Lister-Sharp D, Chapman S, Stewart-Brown S, Sowden A (1999): Health promoting schools and health promotion in schools: Two systematic reviews. *Health Technology Assessment*; 3(22).

Merry SN, McDowell HH, Hetrick SE, Bir JJ, Muller N (2004): Psychological and/or educational interventions for the prevention of depression in children and adolescents. *Cochrane Database of Systematic Reviews*; Issue 2. Art.No.:CD003380.DOI: 0.1002/14651858.CD003380.pub2.

Neil AI, Christensen H (2007): Australian school-based prevention and early intervention programs for anxiety and depression: a systematic review. *Medical Journal of Australia*; 186: 305–308.

Pratt BM, Woolfenden S (2002): Interventions for preventing eating disorders in children and adolescents. *Cochrane Database of Systematic Reviews*; Issue 2. Art. No.: CD002891. DOI: 10.1002/14651858.CD002891.

Thomas H, Camiletti Y, Cava M, Feldman L, Underwood J, Wade K (1999): *Effectiveness of Parenting Groups With Professional Involvement In Improving Parent and Child Outcomes Family Health Child Health*. Hamilton, ON, Canada: Ontario Ministry of Health, Region of Hamilton-Wentworth, Social and Public Health Services Division.

Waddell C, Hua JM, Garland OM, Peters RD, McEwan K (2007): Preventing mental disorders in children: a systematic review to inform policy making. *Canadian Journal of Public Health*; 98(3):166-73.

Wells J, Barlow J, Stewart-Brown S (2003): A systematic review of universal approaches to mental health promotion in schools. *Health Education*; 103(4): 197-220.

Glossary of terms

Anxiety	A condition characterised by an excessive and persistent sense of apprehension or excessive worry with symptoms such as restlessness, poor concentration, irritability, sleep or eating problems, crying, or clinging. For a child to be diagnosed with this disorder, the distress must be significant enough to cause functional impairment. (Greenberg et al 2001)
Behavioural program	Uses an approach which assumes that all behaviour is learned and that an individual's behaviour is dependent on their experiences and interactions with the environment
Cognitive behavioural training	Combines behavioural (e.g. reinforcement, reward, punishment) and cognitive techniques (e.g. challenging negative automatic thoughts) to identify and correct problematic thinking, emotional or behavioural patterns that are associated with dysfunctional behaviour (Turner et al 2007)
Constructive problem-solving	Suggests dealing with conflict non-violently; includes perspective taking, decision making and negotiation. This definition is based on the program philosophy of "Resolving Conflict Creatively Program" (DeJong 1994)
Depression	A condition characterised by a pervasive mood disturbance in which the child or adolescent may experience sadness or irritability, a lack of interest or energy, hopelessness, feelings of worthlessness, inappropriate guilt, psychomotor agitation or retardation, or disturbance in sleep, appetite or concentration (Greenberg et al 2001)
Didactic Sessions	Instructional or teaching sessions
Educational outcome	Refers to school performance such as that reflected in the students' grades/markings, learning difficulties and attachment to school
Emotional competence	A person's ability to recognise, interpret, and respond constructively to emotions in themselves and others
Mental health	A state of well-being in which the individual realises their own abilities, can cope with the normal stresses of life, can work productively and fruitfully and is able to make a contribution to the community (World Health Organization 2001)
Mental health promotion	Enabling people to increase control over and to improve and maintain their optimal well-being for functioning in everyday life; it includes promoting positive mental health and preventing mental health problems

Parental empowerment	Refers to equipping parents with knowledge and skills with the aim to improve confidence in their own abilities
Primary prevention	Aims to remove the causes of a problem or increase the resistance of individuals to them in order to stop the problem occurring in the first place (Barlow et al 2002)
Protective factors	Factors (may be individual, family/social, school context, life events/situations, community or cultural factors) which promote mental health and well-being or increase the resistance to mental illness
Psychological outcomes	Those outcomes which reflect behaviour, emotional and social skills, cognitive problem-solving skills, conflict resolution abilities, level of coping or adjustment and mood
Psychological resilience	An individual's capacity to withstand stressors without manifesting psychological dysfunction
Risk factors	Factors which increase the likelihood of developing mental illness (may be individual, family/social, school context, life events/situations, community or cultural factors)
School ecology	Refers to the school environment and the interactions of people with each other and with their environment
Self-concept	The composite of ideas, feelings and attitudes that a person has about their own identity, worth, capabilities and limitations
Social awareness	The ability to sense, understand, and react to others' emotions, including an individual's complex social structure.
Social competence	Refers to the social, emotional and cognitive skills and behaviours children need for successful social adaptation (Welsh & Bierman 1995)
Social problem-solving skills	Skills that are used to analyse, understand and prepare to respond to everyday problems, decisions and conflicts
Universal programs	These are programs targeted to the general public or to a whole population group that has not been identified on the basis of individual risk (Greenberg et al 2001)
Whole-of-school approach	An approach involving all the teachers and all the students in the school in addition to changing aspects of the social environment of the school and involving the wider community.

Appendices

Appendix 1: Methodology

Methods

A rapid review of the literature was undertaken to provide a brief synthesis and judgment of the available research evidence related to the effectiveness of mental health promotion approaches among children 0-18 years of age.

A staged approach was used to interrogate the best available research evidence. High level secondary evidence was sought, as these evidence types are the most comprehensive and believable sources of research evidence (Merlin et al 2009). Additional to this, lower level and corroborating evidence was identified if it added context to the higher level evidence base. The CAHE approach to identifying and valuing literature in a Rapid Review (Appendix 2) was applied (using Steps 1 and 4).

Inclusion/exclusion criteria

In agreement with the Steering Group, specific criteria for inclusion in this review were considered using the PECOT framework. Only English articles published in the past ten years were included in order to capture the most recent scientific evidence on mental health programs.

Participants	<i>Children aged 0-18 years (to exclude those who are at risk or those who have already developed mental health conditions)</i>
Exposure	<i>Mental health promotion (universal approach to primary prevention) interventions conducted in schools and early childhood settings. These interventions should address risk and protective factors</i>
Comparator	<i>Other health promotion interventions delivered in school and early childhood settings, no intervention or usual practice</i>
Outcomes	<p><i>A range of outcomes will be considered but will not be limited to:</i></p> <ul style="list-style-type: none"> <i>• School performance, attendance or any other educational outcomes</i> <i>• Psychological outcomes (self-esteem level, behavioural changes, sense of belonging, level of adjustment, social skills, psychological well-being (e.g. K10 scores), personal resilience, positive family relationships – as per suggested criteria)</i> <i>• Reduced risk factors e.g. racism , discrimination, family dysfunction, bullying</i> <i>• Cost-effectiveness</i>
Time	<i>Short and long term</i>

**Search strategy
(Key words and
databases
searched)**

A combination of search terms (Keyword 1, 2 and 3) was used to identify and retrieve peer-reviewed articles from databases highlighted below.

Keyword 1	Keyword 2	Keyword 3
Mental health promotion Mental health approach Universal OR Primary prevention Parenting AND mental health Education-based approach AND mental health	Infan* Child* Adolescen* Student* Young people Youth*	Well-being Adjustment Attachment Resilienc* Risk Emotional skills Social skills Coping Sense of belonging Social discrimination Bully*

It must be recognised that the term “mental health promotion” may have a different meaning to different stakeholders in this field as it encompasses vastly diverse, but equally important, fields of health and education. Within the health sector, mental health well-being may primarily focus on health-related outcomes, while within the education sector it may include broader outcomes as social and emotional well-being, educational performance etc. These differences have been recognised in this rapid review and literature searching and retrieval has considered these differences.

The following databases were searched for relevant articles:

- Academic search premiere
- Biomed Central Gateway
- CINAHL database
- Cochrane Library
- Current contents connect
- CSA Illumina
- DARE
- EMBASE
- ERIC
- Google
- Meditext
- MEDLINE
- PsychInfo
- PsychArticles
- Psychology a SAGE full-text collection
- PubMed
- Science Direct
- Scopus
- Web of knowledge
- Web of science
- TRIP Database/ DARE
- HighWire Press

The titles and abstracts identified from the above search strategy were assessed for eligibility by the CAHE researchers and stakeholders from the Department of Human Services, Victoria. In order to avoid duplication and “double counting”, umbrella reviews (review of reviews) were excluded. These umbrella reviews were utilised to identify other relevant articles by pearling their reference lists. The full text copy of eligible articles was retrieved for full examination.

Critical Appraisal

Two CAHE reviewers independently evaluated the methodological quality of all the included articles using the Critical Appraisal Skills Program (CASP) tools. Differences in opinion were resolved by discussion.

Data Extraction

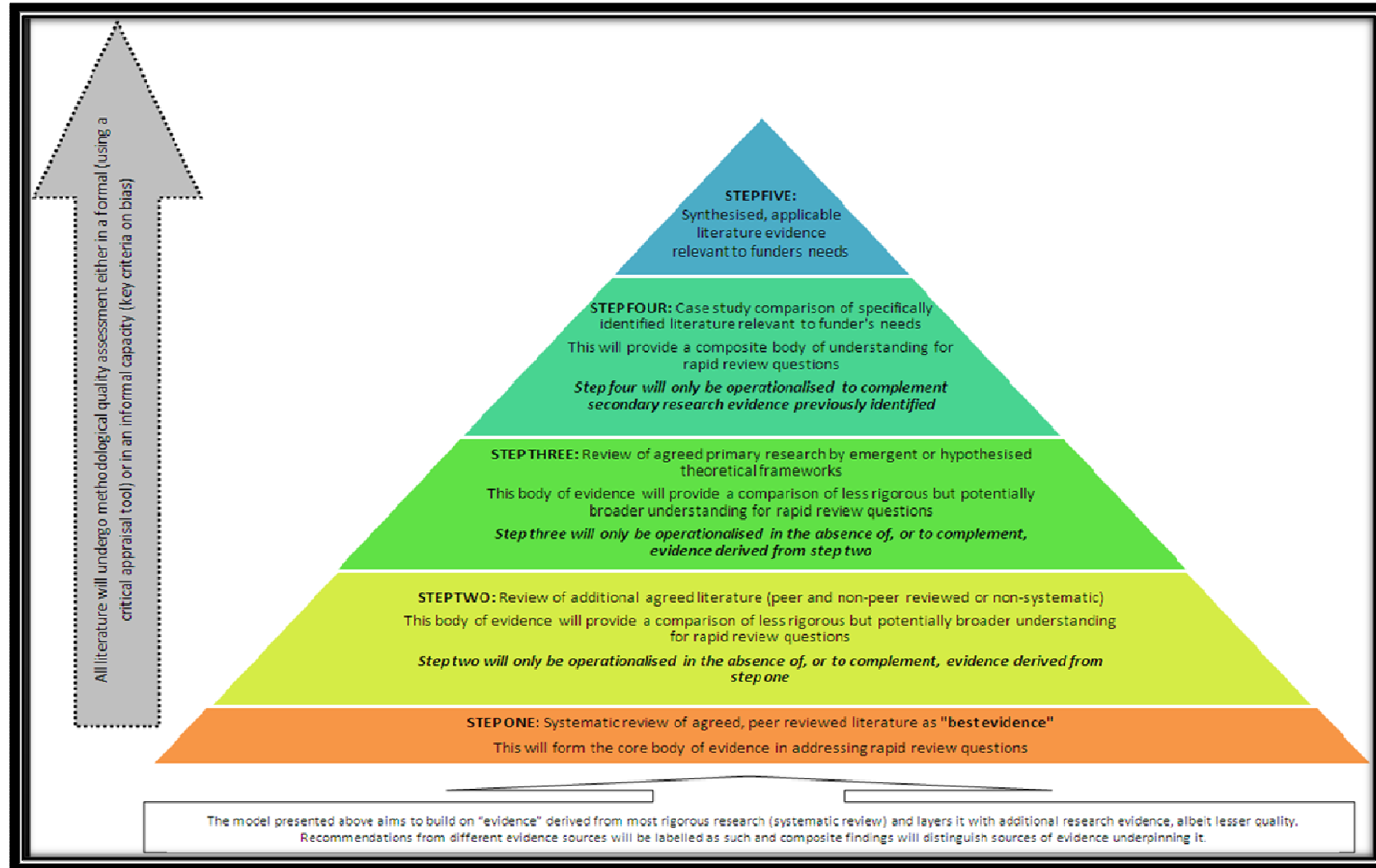
A data extraction tool was specifically developed for this review. Data were extracted from each of the included articles, such as:

- Author, year of publication
- Setting/geographical origin of the article
- Participants – in reference to the developmental stage
- Components of the effective mental health program (may include but not limited to framework, specific elements, parameters)
- Outcome measures

Data Synthesis

Findings from the included publications and their methodological quality (based on critical appraisal scores) were synthesised in a narrative summary. Synthesis of the findings was categorised into developmental stages, i.e. infancy to early childhood pre-school, elementary, middle school, and high school. The strength of the body of evidence was determined based on the Australian National Health and Medical Research Council (NHMRC) Evidence Grading Matrix (Refer to Appendix 3).

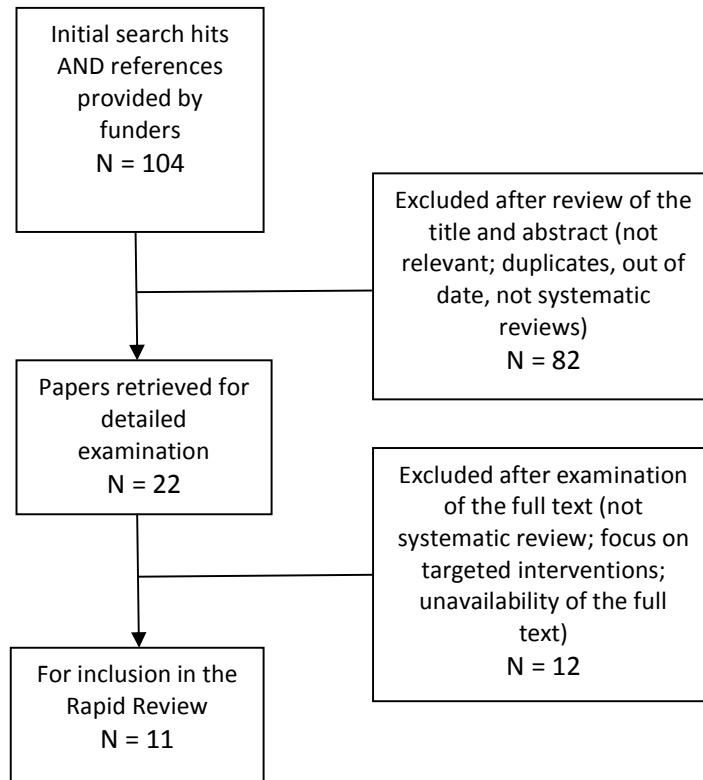
Appendix 2: CAHE approach to literature inclusion in Rapid Reviews



Appendix 3: NHMRC evidence grading table

	A	B	C	D
Component	Excellent	Good	Satisfactory	Poor
Volume of evidence	several level I or II studies with low risk of bias	one or two level II studies with low risk of bias or a SR/multiple level III studies with low risk of bias	level III studies with low risk of bias, or level I or II studies with moderate risk of bias	level IV studies, or level I to III studies with high risk of bias
Consistency	all studies consistent	most studies consistent and inconsistency may be explained	some inconsistency reflecting genuine uncertainty around clinical question	evidence is inconsistent
Clinical impact	very large	substantial	moderate	slight or restricted
Generalisability	population/s studied in body of evidence are the same as the target population for the guideline	population/s studied in the body of evidence are similar to the target population for the guideline	population/s studied in body of evidence different to target population for guideline but it is clinically sensible to apply this evidence to target population	population/s studied in body of evidence different to target population and hard to judge whether it is sensible to generalise to target population
Applicability	directly applicable to Australian healthcare context	applicable to Australian healthcare context with few caveats	probably applicable to Australian healthcare context with some caveats	not applicable to Australian healthcare context

Appendix 4: Flowchart of review selection process



Appendix 5: Critical appraisal

	Did the review ask a clearly focused question?	Did the review include the right type of study?	Did the reviewers try to identify all studies?	Did the reviewers assess the quality of the included studies?	If the results of the studies have been combined, was it reasonable to do so?	How are the results presented and what is the main result?	How precise are these results?	Can the results be applied to the local population?	Were all important outcomes considered?	Should policy or practice change as a result of the evidence contained in this review?
Wells 2003	Yes	Yes	Yes	Yes	Yes	Results were presented in tables summarising the different programs and the percentage of positive results in terms of the outcomes measured. Programs with more than 70% of positive outcomes were: School Transition Environmental Project, School Developmental Project and the Suicide Prevention Project. Overall mental health-promoting interventions were more likely to show at least moderately positive results than the mental illness prevention programs. The interventions that were moderately or more successful were more likely to measure self-concept, emotional awareness and positive- interpersonal behaviours, and the interventions that were likely less than moderately successful were more likely to measure conduct problems and anti-social behaviour.	Precise since percentages have been computed, though statistical pooling was not possible due to variations in outcomes.	Yes	Yes	Yes
Merry 2009	Yes	Yes	Yes	Yes	Yes	Results were presented as SMD (standardised mean difference) and CI (confidence intervals) and	Precise since standard mean differences and ORs (odds	Yes	Yes	Yes

Did the review ask a clearly focused question?	Did the review include the right type of study?	Did the reviewers try to identify all studies?	Did the reviewers assess the quality of the included studies?	If the results of the studies have been combined, was it reasonable to do so?	How are the results presented and what is the main result?	How precise are these results?	Can the results be applied to the local population?	Were all important outcomes considered?	Should policy or practice change as a result of the evidence contained in this review?
					<p>RD (risk difference). Universal programs were not shown to be effective (SMD -0.21, CI -0.48, 0.06) but a significant effect remained when data from both targeted and universal programs were pooled (SMD -0.26, CI -0.36, -0.15). At follow-up, although individual studies showed effectiveness at different times, pooled data showed no significant effect for either universal or targeted programs at any other time point except at 36 months, when one study of a targeted intervention showed a significant difference between groups (SMD -0.29, CI -0.56, -0.01) (Seligman 1999). The issue of whether to study targeted or universal programs remains unresolved. it was also reported for two studies of universal interventions (RD -0.08, CI -0.15, -0.01) (Cardemil 2002a; Cardemil 2002b) that there is a significant difference between groups in the diagnoses of depression.</p>	<p>ratio) were reported.</p>			

	Did the review ask a clearly focused question?	Did the review include the right type of study?	Did the reviewers try to identify all studies?	Did the reviewers assess the quality of the included studies?	If the results of the studies have been combined, was it reasonable to do so?	How are the results presented and what is the main result?	How precise are these results?	Can the results be applied to the local population?	Were all important outcomes considered?	Should policy or practice change as a result of the evidence contained in this review?
Greenberg et al 2001	Yes	Yes	Yes	No	Can't tell	Results were presented in narrative form.	Can't really tell if results are precise.	Yes	Yes	Can't tell
Barlow 2002	Yes	Yes	Yes	Yes	Yes, for some that can be combined.	Results were presented as percentages, effect sizes, and confidence intervals of pooled data for those that can be combined. Effect size was computed for the RCTs (randomised controlled trials). Meta-analysis using a fixed effect model of the RCTs resulted in a significant difference favouring the intervention group -0.69 [-1.11, -0.28]. Three studies claimed improvements on the intervention group and were maintained at follow-up at least 6 weeks post-intervention.	Precise since standard mean differences and ORs were reported.	Yes	Yes	Yes
Neil and Christensen 2007	Yes	Yes	Yes	Yes	Yes, but some were reported in narrative.	Results were presented as effect size using Cohen's d for those which can be extracted. Results for universal programs were similar, with improvements associated with 60% of programs for anxiety and 58% of those for depression.	Can't tell	Yes	Yes	Yes, possibly

	Did the review ask a clearly focused question?	Did the review include the right type of study?	Did the reviewers try to identify all studies?	Did the reviewers assess the quality of the included studies?	If the results of the studies have been combined, was it reasonable to do so?	How are the results presented and what is the main result?	How precise are these results?	Can the results be applied to the local population?	Were all important outcomes considered?	Should policy or practice change as a result of the evidence contained in this review?
Wadell 2007	Yes	Yes	Yes	Yes	Statistical pooling not really possible.	Data were summarised in tables. The effect sizes for Tri-ministry in decreasing conduct problems were 0.12 (from the teacher's report) and 0.16 (from the parents report). "Friends" was reported to significantly prevent anxiety but no effect size or OR was provided. "Problem solving for life" was not able to report any significant prevention of depression.	Can't tell	Yes	Yes	Can't tell since the evidence just showed effectiveness of 2 universal programs in the prevention of conduct problems and anxiety while prevention of depression warrants more research.
Lister-Sharp 1999	Yes	Yes	Yes	Yes, but no mention of what criteria were used.	Can't tell	Data was presented in narrative form.	Can't tell	Yes	Yes	Yes
Thomas et al 1999	Yes	Yes	Yes	Yes	Can't tell because pooling of data not possible.	Data were presented in narrative form. P-values were reported to indicate significant difference in favour of the intervention group.	P-values were reported to indicate significant difference or improvement.	Yes	Yes	Yes

	Did the review ask a clearly focused question?	Did the review include the right type of study?	Did the reviewers try to identify all studies?	Did the reviewers assess the quality of the included studies?	If the results of the studies have been combined, was it reasonable to do so?	How are the results presented and what is the main result?	How precise are these results?	Can the results be applied to the local population?	Were all important outcomes considered?	Should policy or practice change as a result of the evidence contained in this review?
Pratt & Woolfenden 2002	Yes	Yes	Yes	Yes	Yes	Data were pooled when possible. No significant difference in BMI (body mass index) were found between intervention and control group ([WMD -0.10, -0.45 to 0.25, 95% CI]. No significant difference was found between groups in the Eating Attitudes Test [SMD 0.01, -0.13 to 0.15, 95% CI]. Considering the Bulimia scale, no significant difference between groups was seen for either overall sample groups [SMD -0.03, -0.16 to 0.10, 95% CI] or high-risk participants [SMD -0.28, -0.63 to 0.06, 95% CI] when the studies were pooled. A significant difference between intervention and control groups was seen in media literacy and advocacy as assessed by SATAQ (Socio-cultural Attitudes Towards Appearance Questionnaire) indicating that the two interventions resulted in less internalisation or acceptance of societal ideals relating to appearance [SMD -0.28, -0.51 to -0.05, 95% CI]. However, no significant differences were found between groups on the	It is precise with the reporting of WMD (weighted mean difference), SMD (standardised mean difference) and 95% CI	Yes	Yes	No, there is insufficient evidence for the effectiveness of eating disorder prevention programs.

	Did the review ask a clearly focused question?	Did the review include the right type of study?	Did the reviewers try to identify all studies?	Did the reviewers assess the quality of the included studies?	If the results of the studies have been combined, was it reasonable to do so?	How are the results presented and what is the main result?	How precise are these results?	Can the results be applied to the local population?	Were all important outcomes considered?	Should policy or practice change as a result of the evidence contained in this review?
Bayer et al 2008	Yes	Yes	Yes	Yes	Not applicable	<p>Global Self-worth subscale of the Self-Perception Profile [SMD -0.05, -0.44 to 0.34, 95% CI] and the Body Image Assessment Procedure (silhouettes) [WMD 0.02, -0.37 to 0.42, 95% CI]. Where the focus of intervention was on improving self-esteem, no significant differences were found between groups in scores on the Close Friendships [WMD -0.01, -0.09 to 0.06, 95% CI] and Social Acceptance [WMD -0.03, -0.10 to 0.04, 95% CI] subscales of the Self-Perception Profile (after data were pooled and compared at three-month follow-up).</p> <p>Results were presented in a narrative form and in tables that report findings for each of the reviewed programs. Main findings: there are different approaches to prevention of child behavioural, emotional and social problems – multi-systemic, individual and group; group approaches tend to be less costly, and the balance of evidence indicates possible effectiveness of behaviour, social and emotional problems.</p>	Can't tell	Yes	Yes	Yes

	Did the review ask a clearly focused question?	Did the review include the right type of study?	Did the reviewers try to identify all studies?	Did the reviewers assess the quality of the included studies?	If the results of the studies have been combined, was it reasonable to do so?	How are the results presented and what is the main result?	How precise are these results?	Can the results be applied to the local population?	Were all important outcomes considered?	Should policy or practice change as a result of the evidence contained in this review?
Adi et al 2007	Yes	Yes	Yes	Yes	Not applicable	Qualitative synthesis <ul style="list-style-type: none"> Teachers are clearly well trained and supervised. They are usually trained both in the new curriculum to be offered and in behaviour management (Adi et al 2007) Provision of comprehensive curriculum in the development of skills which enable resilience to mental health problems including social skills, emotional literacy and problem-solving (Adi et al 2007) Parenting support – engage parents in supporting the development of their children’s academic skills (literacy and numeracy) and increase parental involvement in and support for school life (Adi et al 2007). 	Can’t tell	Yes	Yes	Yes

Appendix 6: Data extraction

Promotion of Mental Health

Developmental Stage	Programs	Approach	Contents	Delivery/Duration	Indicators for Outcome Evaluation
Parenting Programs					
<p>Infancy to early childhood (0-3 years old) – Barlow et al 2002 – studies from USA and UK</p> <p>(0-6 years old) – Thomas et al 1999 – studies were mostly from USA, few from Canada and UK</p>	<ul style="list-style-type: none"> • There is currently <i>insufficient evidence to reach any firm conclusions regarding the role of parenting programs</i> in the primary prevention of mental health problems. • There is some evidence for the effectiveness of <i>parenting programs to improve the short-term mental health</i>, i.e. emotional and behavioural adjustment and sleep patterns, of children under the age of 3 years. • Successful group-based behavioural parenting programs: <ul style="list-style-type: none"> – Implementation duration: 8 weeks for one; 10 hours over 4 sessions in another study; 4 sessions in another – Outcomes used: the Eyberg Child Behaviour Inventory (ECBI), the Behaviour Screening Questionnaire (BSQ), the Child Behaviour Questionnaire (CBQ) and the Dyadic Parent-Child Interaction Coding System (DPICS). • There is evidence from the literature that programs utilising <i>parenting group programs with professional intervention</i> demonstrated positive changes in child behaviour. These <i>behavioural programs</i> based on parental empowerment models were effective immediately after the intervention (programs) and over time. • Effective programs consisted of: <ul style="list-style-type: none"> – Weekly sessions (8-9) – Parent groups viewing videotapes of desirable and problematic parent-child interactions – Group leader facilitating a discussion about parent-child interactions, encouraging problem-solving and parental empowerment – Didactic sessions – Role playing of desired behaviour (more effective than general discussion) 				
School-based Programs					
Pre-school	<ul style="list-style-type: none"> • Interpersonal Cognitive Problem Solving (ICPS) – <u>USA</u> (Greenberg et al 2001) 	<ul style="list-style-type: none"> • Interpersonal cognitive skill building 	<ul style="list-style-type: none"> • Fundamental skills related to language, thinking, and listening • Interpersonal problem-solving 	<ul style="list-style-type: none"> • Teacher delivered program • Dialogues • Role playing 	<ul style="list-style-type: none"> • Cognitive problem-solving abilities • Inhibition • Impulsivity

Developmental Stage	Programs	Approach	Contents	Delivery/Duration	Indicators for Outcome Evaluation
Elementary	<ul style="list-style-type: none"> Interpersonal Cognitive Problem Solving (ICPS) (Greenberg et al 2001) – USA 	<ul style="list-style-type: none"> Interpersonal cognitive skill building 	<ul style="list-style-type: none"> Fundamental skills related to language, thinking, and listening Interpersonal problem-solving 	<ul style="list-style-type: none"> Teacher-delivered program Dialogues Role playing 	<ul style="list-style-type: none"> Cognitive problem-solving abilities Inhibition Impulsivity
	<ul style="list-style-type: none"> Promoting Alternative Thinking Strategies (PATHS) (Wells et al 2001; Greenberg et al 2001; Adi et al 2007) – USA 	<ul style="list-style-type: none"> Social/emotional competence promotion through cognitive skill building 	<ul style="list-style-type: none"> Teaching students to identify, understand and self-regulate their emotions Programs extend to parents and beyond classroom 	<ul style="list-style-type: none"> Didactic instruction Role playing Class discussion Modelling Social and self-reinforcement Worksheets 3 school terms 	<ul style="list-style-type: none"> Social problem-solving Emotional understanding Self-report of conduct problems Teacher ratings of adaptive behaviour Cognitive abilities (social planning) Impulsivity
	<ul style="list-style-type: none"> Resolving Conflict Creatively Programme (Wells et al 2001; Greenberg et al 2001) – USA 	<ul style="list-style-type: none"> Conflict resolution curriculum Peer mediators 	<ul style="list-style-type: none"> Listening Assertiveness Negotiation Problem-solving 	<ul style="list-style-type: none"> Training of teachers (self-selected) in curriculum Curriculum using role-play, discussion, brainstorming Selected children trained as peer mediators Ongoing up to 3 years and up to 55 curriculum sessions/year 	<ul style="list-style-type: none"> Aggressive cognitions Hostile attributional biases Interpersonal negotiating strategies – competent and aggressive Self-reported conduct problems
	<ul style="list-style-type: none"> Child Development Project (Wells et 	<ul style="list-style-type: none"> Encouraging co-operative and helping activities in school 	<ul style="list-style-type: none"> School-wide community building activities 	<ul style="list-style-type: none"> Training of teachers, school staff (use of cooperative learning 	<ul style="list-style-type: none"> Social problem-solving Conflict resolution

Developmental Stage	Programs	Approach	Contents	Delivery/Duration	Indicators for Outcome Evaluation
	al 2001; Greenberg et al 2001) – USA	and community <ul style="list-style-type: none"> • Developing prosocial norms and behaviour • Enhancing understanding of others 	that will promote school bonding <ul style="list-style-type: none"> • Parent involvement activities (interactive homework assignments which reinforce the family-school partnership) 	and a language arts model that fosters cooperative learning, as well as developmental approach to discipline that promotes self-control by engaging students in classroom norm setting and providing them with opportunities to actively participate in classroom decision making) <ul style="list-style-type: none"> • Classroom activities using stories, role plays, games, etc (based on manual) • Modelling of behaviour by teachers/curricular materials • Positive discipline by teachers • Student involvement in co-operative/helping strategies • Ongoing and continuous 	<ul style="list-style-type: none"> • Assessed in interviews using hypothetical situations

Developmental Stage	Programs	Approach	Contents	Delivery/Duration	Indicators for Outcome Evaluation
	<ul style="list-style-type: none"> School Development Project (Wells et al 2001) – USA 	<ul style="list-style-type: none"> Comprehensive school plan developed and monitored School climate issues and individual concerns addressed Parents participate in planning and decision making Increased community involvement 		<ul style="list-style-type: none"> School management team Mental health team Parents’ program Community-based projects Ongoing 	<ul style="list-style-type: none"> Self-concept
	<ul style="list-style-type: none"> Good Behavior Game (Greenberg 2001; Bayer et al 2008) – USA 	<ul style="list-style-type: none"> Whole-of-school social skills curriculum Team-based program designed to improve children’s social adaptation to the classroom related to rules and authority 	<ul style="list-style-type: none"> Requires 12-40 hours training for teachers 	<ul style="list-style-type: none"> 2 years 	<ul style="list-style-type: none"> Teachers’ rating of aggression, peer rating of aggression for boys and teacher ratings of shy behaviour
	<ul style="list-style-type: none"> Linking Interests of Families and teachers (LIFT) (Greenberg et al 2001)– USA 	<ul style="list-style-type: none"> Decrease risk and increase protective factors related to future violence and delinquency Focus on the home, individual student, classroom and peer group 	<ul style="list-style-type: none"> At home: LIFT works to teach parents effective forms of discipline and supervision, including consistent limit-setting and parental involvement At school: Program involves increasing 	<ul style="list-style-type: none"> At school – 20 sessions 	<ul style="list-style-type: none"> Playground aggression

Developmental Stage	Programs	Approach	Contents	Delivery/Duration	Indicators for Outcome Evaluation
	<ul style="list-style-type: none"> Seattle Social Development Project (Greenberg et al 2001, Adi et al 2007) – USA 	<ul style="list-style-type: none"> Addresses multiple risk and protective factors across both individual and ecological domains (individual, school and family) Emphasis on creating and maintaining strong school and family bonds 	<p>students’ social and problem-solving skills and helping them resist negative peer groups</p> <ul style="list-style-type: none"> Uses a version of the Good Behaviour game Combines modified teacher practices and parent training across a six-year intervention Teachers training has 3 components: classroom-based cognitive and social skills training in 1st and 6th grade and parent training that emphasised child behaviour management in 1st or 2nd grade, academic support in 2nd or 3rd grade, and preventing drug use and antisocial behaviour in 5th or 6th grade 	<ul style="list-style-type: none"> 6-year intervention 	<ul style="list-style-type: none"> Attachment to school Self-reported achievement School misbehaviour

Developmental Stage	Programs	Approach	Contents	Delivery/Duration	Indicators for Outcome Evaluation
	Summary of program components/characteristics as reported by Adi et al (2007): <ul style="list-style-type: none"> • Teachers are clearly well trained and supervised. They are usually trained both in the new curriculum to be offered and in behaviour management. • Provision of comprehensive curriculum in the development of skills which enable resilience to mental health problems including social skills, emotional literacy and problem-solving • Parenting support - engage parents in supporting the development of their children’s academic skills – literacy and numeracy – and increase parental involvement in and support for school life (Adi et al 2007). 				
Middle school/junior high school	<ul style="list-style-type: none"> • Positive Youth Development (PYD) (Greenberg et al 2001)- USA 	<ul style="list-style-type: none"> • Promotion of general social competence and refusal skills related to alcohol and drug use 		<ul style="list-style-type: none"> • 20 session curriculum 	<ul style="list-style-type: none"> • Coping skills • Ability to generate alternative responses to hypothetical situations • Teacher reports of several measures of social adjustment (conflict resolution with peers, impulse control, popularity)

Developmental Stage	Programs	Approach	Contents	Delivery/Duration	Indicators for Outcome Evaluation
	<ul style="list-style-type: none"> Social and academic self-concept (Wells et al 2001) – <u>Israel</u> 	<ul style="list-style-type: none"> Co-operative learning: small-group learning methods Social program: conditions to foster positive attitude change and acceptance of other group members Combined co-operative and social program 		<ul style="list-style-type: none"> Detailed lesson plans developed for literature and history (i.e. communication exercises, worksheets, peer teaching, quiz) (4 hours/week for 12 weeks) Social games, artistic efforts, problem-solving, dilemmas, discussions, small-group work (2 hours/week for 15 weeks) Combination of above (social program 10 hours over 2 weeks, then co-operative learning introduced) 	<ul style="list-style-type: none"> Social self-concept Academic self-concept
Transition	<ul style="list-style-type: none"> Improving Social Awareness – Social Problem Solving (ISA-SPS) (Greenberg et al 2001) – <u>USA</u> 	<ul style="list-style-type: none"> Skill building to promote social competence, decision making, group participation and social awareness Promote resilience to stresses related to school change 		<ul style="list-style-type: none"> 2-year program given prior to transition to middle school 	<ul style="list-style-type: none"> Self-report of coping with stressors related to middle school transition Teacher reports of behaviour

Developmental Stage	Programs	Approach	Contents	Delivery/Duration	Indicators for Outcome Evaluation
	<ul style="list-style-type: none"> STEP (School Transition Environmental Project) (Wells et al 2001; Greenberg et al 2001) – USA 	<ul style="list-style-type: none"> Changing school ecology to be less threatening—addressing contextual variables in the child’s home or school Re-defining the role of the homeroom teacher Stable support mechanism from peers and classmates 		<ul style="list-style-type: none"> Timetable changed so more lessons shared by same peer group and less distance to travel between classes Home-room teachers given more central administrative/pastoral control More contact made with students’ families One school year 	<ul style="list-style-type: none"> Stress level Anxiety Depression Delinquent behaviour
	<ul style="list-style-type: none"> Coping with junior high curriculum (Wells et al 2001) – USA 	<ul style="list-style-type: none"> Information about junior high school Skill development 	<ul style="list-style-type: none"> Problem-solving skills Skills for coping with difficult situations Coping with anxiety 	<ul style="list-style-type: none"> Discussion with junior high school students and staff (1 session) Skills training using modelling, role-play, discussion, written assignments (8 sessions over 8 weeks) 	<ul style="list-style-type: none"> Social problem-solving skills Assertiveness Depression Anxiety Self-esteem Readiness for junior high

Prevention of Mental Disorder

A. Anxiety

Developmental Stage	Programs	Approach	Contents	Delivery/Duration	Indicators for Outcome Evaluation
<p>Primary (elementary) and secondary (middle) school</p>	<ul style="list-style-type: none"> Friends (age 10-12 OR 15-16) (Waddell et al 2007; Neil & Christensen 2007) – Australia 	<ul style="list-style-type: none"> Cognitive behavioural training Promotes important educational self-development concepts such as self-esteem, problem-solving, psychological resilience, self-expression, and building positive relationships with peers and adults 		<ul style="list-style-type: none"> Run by trained teachers in normal class times Consists of 10 sessions plus 2 booster sessions Includes parent sessions with teachers 	<ul style="list-style-type: none"> Anxiety symptoms using Spence Children’s Anxiety Scale Chronic Anxiety using Revised Children’s Manifest Anxiety Scale Anxiety Disorders Interview Schedule for Children (diagnostic measure) Successful up to 12-month follow-up, in other trials even beyond 24 months

B. Depression

Developmental Stage	Programs	Approach	Contents	Delivery/Duration	Indicators for Outcome Evaluation
(Adolescents: 12-15 years old)	<ul style="list-style-type: none"> Resourceful Adolescent Program (Neil & Christensen 2004; Merry et al 2004) - Australia 	<ul style="list-style-type: none"> Builds psychological resilience or resourcefulness 	<ul style="list-style-type: none"> RAP-A (school-based program for 12 to 15 year olds that aims to improve the coping skills of teenagers) RAP-P (targets family protective factors such as increasing harmony and preventing conflict) RAP-T (aims at assisting teachers to promote school connectedness) 	<ul style="list-style-type: none"> The three components of the program can be run independently or together. (11 sessions for 11 weeks, lasting for 50 minutes per session) 	<ul style="list-style-type: none"> Self-report of depressive symptomatology
	<ul style="list-style-type: none"> Stress Inoculation Model (Merry et al 2004; Greenberg et al 2001) – USA 	<ul style="list-style-type: none"> Cognitive restructuring, problem-solving, and anxiety management 		<ul style="list-style-type: none"> 8 days (13 sessions) 	<ul style="list-style-type: none"> Anger symptomatology (state anger, trait anger, anger expression) Trait Anxiety Depression-Reynolds Adolescent Depression Scale

	<ul style="list-style-type: none"> • Problem Solving for Life (Neil & Christensen 2007) 	<ul style="list-style-type: none"> • Cognitive restructuring and problem-solving skills 	<ul style="list-style-type: none"> • 8 sessions (45 minutes per session) 	<p>Depression-Beck Depression Inventory (BDI), Structured Diagnostic Interview with High-Risk Students (ADIS-C). New or continuing episodes of depression during the follow-up period – Longitudinal Follow-up Evaluation (LIFE) General psychopathology – Youth Self Report (YSR). Social functioning – The Child and Adolescent Social Adaptive Functioning Scale (CASAFS). Problem-solving – Social Problem-Solving Inventory – Revised Short Form (SPSI-R). Attributional style – The Children’s Attributional Style Questionnaire (CASQ-R). Negative life events – Life Events Record modified.</p> <ul style="list-style-type: none"> • Family conflict – Family Conflict sub-scale of the Colorado Self-Report of Family Functioning Inventory (CSRFFI).
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	<ul style="list-style-type: none"> Friends (age 10-12 OR 15-16) (Neil & Christensen 2004; Merry et al 2004) – <u>Australia</u> 	<ul style="list-style-type: none"> Cognitive behavioural training Promotes important educational self-development concepts such as self-esteem, problem-solving, psychological resilience, self-expression, and building positive relationships with peers and adults 	<ul style="list-style-type: none"> Consists of 10 sessions plus 2 booster sessions 	<ul style="list-style-type: none"> Depression – Children’s Depression Inventory.
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C. Violence

Developmental Stage	Programs	Approach	Contents	Delivery/Duration	Indicators for Outcome Evaluation
Elementary	<ul style="list-style-type: none"> Second Step (Greenberg et al 2001; Wells et al 2001) – <u>USA</u> 	<ul style="list-style-type: none"> Nonviolent conflict resolution or decision making skills 	<ul style="list-style-type: none"> Anger management Empathy training Impulse control Social problem-solving skills 	<ul style="list-style-type: none"> Curriculum using role-play, modelling by teachers, skill practice, feedback and reinforcement of appropriate skills (6 months; 1–2 35 minute lessons per week) 	<ul style="list-style-type: none"> Behaviour (aggression, neutral or pro-social behaviour as measured by observation)
Middle school/junior high school	<ul style="list-style-type: none"> Responding in Peaceful and Positive Ways (RIPP) program (Greenberg et al 2001) – <u>USA</u> 	<ul style="list-style-type: none"> Social/cognitive skill building to promote conflict resolution and positive communication 		<ul style="list-style-type: none"> Team building Small group work Role playing Relaxation techniques 	<ul style="list-style-type: none"> Decision-making knowledge Use of peer mediation School disciplinary data (weapon carrying, in-school suspensions)

D. Eating disorder

Only one of the included systematic reviews specifically examined the effectiveness of a prevention programs for eating disorders in children and adolescents. The results of the review based on randomised controlled trials **do not allow any firm conclusions to be made about the effectiveness of eating disorder prevention programs** in children and adolescents in the general population (Pratt & Woolfenden 2002).

E. Bullying

Developmental Stage	Programs	Approach	Contents	Delivery/Duration	Indicators for Outcome Evaluation
Elementary and middle school	<ul style="list-style-type: none"> Bullying Prevention Program (Greenberg et al 2001) – USA 	<ul style="list-style-type: none"> Holding a school conference day to discuss results of survey and potential intervention activities Formation of a bullying prevention coordinating committee to oversee the intervention Development of a coordinated structure for monitoring student behaviour during periods of increased student interaction Establishing and enforcing specific rules against bullying and holding regular classroom meetings to discuss bullying and other anti-social behaviour Individual discussion with bullies, victims and parents 		<ul style="list-style-type: none"> School level – school conference Classroom level – regular classroom meetings Individual level – individual discussions with bullies 	<ul style="list-style-type: none"> Bullying and victimisation questionnaire Observed anti-social behaviour (vandalism, fighting, drunkenness, theft and truancy)
Secondary school	<ul style="list-style-type: none"> Bullying Prevention Program (Greenberg et al 2001) – USA 	<ul style="list-style-type: none"> Increased attention to supervision in the breaks between lessons Encouragement of a philosophy to promote self-esteem, supportive values and responsibility for health decisions 		Same as above	<ul style="list-style-type: none"> Student survey

F. Suicide Prevention

<p>Senior high school</p>	<ul style="list-style-type: none"> • Suicide prevention (Wells et al 2001) - Israel 	<ul style="list-style-type: none"> • Mental illness prevention • Classroom-based approach 	<ul style="list-style-type: none"> • Three components: description of experience, working through the discussed experience, coping with the problem/inner experience 	<ul style="list-style-type: none"> • Student workshops • Seven-week workshop for school counsellors • Seven weekly classes of two hours' duration 	<ul style="list-style-type: none"> • Suicidal tendencies • Ego identity • Hopelessness • Coping
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