

Do Universal School-based Mental Health Promotion programmes improve the Mental Health and Emotional Well-being of young people? A literature review

Clare A. O'Connor, Judith Dyson, Fiona Cowdell, Roger Watson

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ABSTRACT

Aim

To examine evidence—using a range of outcomes— for the effectiveness of school-based mental health and emotional well-being programmes.

Background

It is estimated that 20% of young people experience mental health difficulties every year. Schools have been identified as an appropriate setting for providing mental health and emotional well-being promotion prompting the need to determine whether current school-based programmes are effective in improving the mental health and emotional well-being of young people.

Methods

A systematic search was conducted using the health and education databases, which identified 29 studies that measured the effectiveness of school-based universal interventions.

PRISMA guidelines were used during the literature review process.

Results

Thematic analysis generated three key themes: i) help seeking and coping; ii) social and emotional well-being; and iii) psycho-educational effectiveness.

Conclusion

It is concluded that whilst these studies show promising results there is a need for further robust evaluative studies to guide future practice.

Relevance to Clinical Practice

All available opportunities should be taken to provide mental health promotion interventions to young people in the school environment, with a requirement for educational professionals

to be provided the necessary skills and knowledge to ensure that the school setting continues to be a beneficial environment for conducting mental health promotion.

Keywords: mental health, emotional well-being, young people, schools, psycho-education, help-seeking, coping, social skills, health promotion interventions

What does this paper contribute to the wider global clinical community?

- Schools have been identified as an alternative or additional environment to the more typical health care setting, with this literature review providing further evidence of the effectiveness of school-based mental health interventions.
- This literature review also demonstrates the importance of ensuring that schools are provided with quality evidence-based programmes that can be effectively implemented and sustained.

INTRODUCTION

Children and adolescents constitute almost a third of the global population and it is estimated that approximately 20% of them experience some form of Mental Health (MH) difficulty (United Nations Children’s Fund (UNICEF), 2008). The failure to address MH difficulties is a public health issue with widespread and life-long consequences (World Health Organisation (WHO), 2003). To address this it is suggested that there need to be more MH promotion interventions which are robustly evaluated. MH promotion can be defined as:

“...actions to create living conditions and environments that support mental health and allow people to adopt and maintain healthy lifestyles. These include a range of actions to increase the chances of more people experiencing better mental health.”

(WHO, 2016 pp.1)

The terms ‘mental health’ and ‘emotional wellbeing’ are used interchangeably within the literature and are considered to have similar properties. For this review, the terms “children”, “adolescents” and “young people” will be used interchangeably as they encompass the age range of the population of interest, 5-18 years old.

This paper investigates promotional programmes designed to support MH and emotional wellbeing (EW) in children. Children’s public health embraces physical, social, mental and emotional wellbeing dimensions. MH and EW is defined as:

“being happy and confident and not anxious or depressed...the ability to be autonomous, problem-solve, manage emotions, experience empathy, be resilient and attentive” (National Institute for Health and Care Excellence (NICE), 2013 pp.5).

Because each dimension of health interacts, a positive effect on physical health is likely to also improve a person's MH and EW and vice versa (Ewles and Simnett, 2003). From this perspective, the World Health Organisation (WHO) identifies the need for a holistic approach to the wellbeing of young people as MH problems can have a negative effect on all areas of development. These include the ability to manage thoughts and emotions, the ability to build social relationships, the aptitude to learn and the subsequent consequences of failure to do so (WHO, 2013).

The burden of MH in young people is substantial (UNICEF, 2008; WHO, 2003), which is a clear motivation for providing MH and EW promotion in additional or alternative environments rather than simply focusing on healthcare settings. In 2016, WHO published further guidance on MH promotion in their fact sheet 'Mental Health: Strengthening our response'. The fact sheet supports the use of intersectoral strategies and provides specific ways in which MH can be promoted, including the use of school-based MH promotional programmes (WHO, 2016).

Further to this, in a recent report by the Education Policy Institute's Commission (EPIC) there is an acknowledgement of the short falls of current MH services for young people and it is recommended that schools and teachers should be utilised in the process of transforming young people's MH care. One of the suggested initiatives in the report is the use of joint training for Child and Adolescent Mental Health Services (CAMHS) staff and teaching staff. This initiative is already being piloted in 22 areas of the UK and aims to ensure that all professionals in a position of responsibility have an understanding of the MH needs of young people and how these may be supported. It is expected that initiatives such as the one above would reduce the number of referrals to MH services that specialists in areas such as

CAMHS would consider inappropriate. There is often a “disconnect” between what non-MH practitioners or members of the public compared with MH practitioners consider “appropriate”. Training non-MH practitioners, such as teachers, in techniques such as listening and mental health first aid (for example) may reduce referrals and reduce MH services waiting times; whilst also enabling education professionals to feel that they are receiving the required training and support for meeting the needs of the young people in their care (Frith, 2016).

According to Marks (2012), schools are the optimal environment to deliver MH programmes for children and young people outside of healthcare settings as they are safe, cost-effective and flexible places in which a diverse range of interventions can be offered. Alexander (2003), states that schools and the education system play an important role in MH promotion as it may contribute to making schools a healthier environment which benefits the pupils, staff and the wider community. Similarly, NICE (2009) identifies that educational establishments can and should provide a safe environment which nurtures self-worth and efficacy. Established relationships between the child and one or more of their teachers, along with regular contact between these two groups suggests both trust and accessibility.

The Office of National Statistics (2004) suggest a child or young person with impaired well-being is more likely to be excluded from school, to become disengaged from the education process and to experience academic underachievement. It is also clear within a recent report by The Centre for Mental Health that the effect of MH problems for young people will rarely cease to exist for an individual during their school age years, but in fact will continue into adult life. This report also calls for schools to be utilised as an environment for providing MH promotion; and recognises that schools that provide a ‘whole-school approach’ to promoting

MH have the best outcomes (Khan, 2016). For a whole-school approach to be engaged the school must commit to creating a health promoting environment, with all staff supporting the initiative and ensuring that MH and social and emotional well-being is placed throughout the school's curriculum (Weare and Nind, 2011). For each school, the best outcome results in meeting the individual needs of the students, particularly in terms of the social and emotional well-being and the reduction of any identified risk factors (Khan, 2016).

Therefore, if schools are deemed to be an appropriate additional or alternative to healthcare settings for MH and EW programmes then this focuses the need to answer the research question: Are current school-based MH programmes effective for promoting the MH and EW of young people?

School-based MH and EW programmes can generally be divided into two different categories, universal interventions and targeted interventions. Universal interventions are those that target general population groups, for example in schools this may be the whole school or all within an age range. Targeted interventions are designed to be delivered to specific groups or individuals who have been identified to need specific support or treatment due to an existing illness, vulnerability or risk factor.

Generally, there is little information about exactly how and where universal interventions are delivered. Provision depends on individual schools and organisations largely rather than national initiatives, and in a recent report by 'Young Minds', current provision in schools was referred to as 'inconsistent' (Young Minds, 2017). However, it is noted that one specific form of school-based MH promotion that is more widely undertaken and that has been more thoroughly researched is 'Social and Emotional Learning' (SEL). SEL interventions are a

form of MH and well-being promotion that have been undertaken in schools across the UK, USA and Europe (Elias et al, 1997).

One example of Social and Emotional Learning is the programme Social and Emotional Aspects of Learning (SEAL). It is a programme which aims to enhance personal development of young people by providing a framework and ideas for teaching social and emotional learning in pre-existing lessons and across the school curriculum (PSHE association, 2014). It has been subject to a national evaluation conducted by Humphrey et al, (2010) through a quasi-experimental study that compared the use of SEAL in 22 schools with 19 comparison schools. The evaluative study aimed to assess the impact of SEAL on the pupils receiving and the staff providing it, whilst also examining the implementation of the SEAL programme. In the implementation arm of the study the authors found a lack of consistency however they acknowledged that this showed little effect on the outcomes for the pupils. Most importantly, the impact of SEAL provided in the sample schools was disappointing; data showed that the programme failed to have an impact on the social and emotional skills, MH difficulties, behaviour problems or pro-social behaviours of pupils.

The results of the evaluation above are not encouraging when considering the effectiveness of school-based MH promotion; however, the authors report that the study findings provided an opportunity for review and reflection and did recognise that their study did not follow the trend that had been shown in alternative reviews of SEL programmes (Humphrey et al, 2010).

Most recent published reviews relating to MH and EW interventions in schools focus on targeted rather than universal programmes (Lösel and Beelman, 2003; Wilson and Lipsey, 2007; Wilson et al, 2001). Only three papers were identified that related to universal interventions (Durlak et al, 2011; Sklad et al, 2012; Wells et al, 2003).

Wells et al, (2003) conducted a systematic review of universal approaches to mental health promotion in schools. Following the review of 17 papers, which considered 16 different school-based interventions the authors found positive evidence that universal school-based interventions were effective, particularly those that used a long-term intervention with a whole school approach. It should be recognised however that this was a small review and is now dated.

Durlak et al, (2011) and Sklad et al, (2012) each conducted a meta-analysis of existing literature on school-based universal SEL programmes. Each meta-analysis demonstrated positive results, with participants of SEL interventions showing enhanced social and emotional competencies. However, both meta-analyses focused specifically on SEL interventions and excluded all other types of school-based mental health promotion.

Therefore, a need was identified for a review that focused on school-based universal MH and EW programmes that could add to the existing literature provided by Durlak et al, (2011), Sklad et al., (2012) and Wells et al., (2003). It is clear from the previous literature review by Wells et al, (2003) that there is a range of potential outcomes from universal school-based interventions. To gain further clarity it was deemed reasonable to initially take the widest possible view in this literature review. It should however be noted that with such an approach, the resulting research question and research aim would have limited specificity.

AIMS

To examine evidence—using a range of outcomes— for the effectiveness of school-based mental health and emotional well-being programmes.

METHODS

Research Question

Are current school-based MH promotional programmes effective for promoting the MH and EW of young people?

Search strategy

A systematic search was conducted using the health and education databases CINAHL, Medline, PsycInfo, ERIC and Education Research Complete. The search terms were used as follows: “young people” OR “young person” OR “child*” OR “kid*” OR “adolescen*” OR “youth*” OR “teen*” AND “school*” OR “school-based” OR “college” OR “sixth form” OR “kindergarten” AND “mental health promotion” OR “mental health prevention” OR “social emotional learning” OR “psychoeducation” OR “intervention” OR “emotional well-being” OR “mental health” OR “mental health stigma” OR “coping” OR “resilience” OR “help-seeking” OR “stress management”.

Inclusion and exclusion criteria

Inclusion criteria: English language, published 1995-2015, reports of universal interventions, participants aged 5 to 18, and conducted in the school environment. Exclusion criteria: Reports of targeted interventions and those conducted in non-school environments. Papers evaluating SEL interventions prior to 2008 that have been included in the two SEL reviews mentioned above (Durlak et al, 2011; Sklad et al, 2012). During the literature review process it was decided to include the SEL reviews by Durlak et al, 2011 and Sklad et al, 2012 to enable synthesis of results.

Study Selection

Figure 1 identifies the number of papers identified and rejected at each stage of the review process using a PRISMA diagram (PRISMA, 2009). An initial 807 papers were identified

and these were reduced to 29 after excluding duplicates or general interest articles that did not report primary research. To ensure thoroughness citation searches of included articles were conducted. PRISMA guidelines were designed to aid author reporting in systematic reviews and meta-analyses; therefore, the PRISMA checklist has been used during this literature review process (<http://www.prisma-statement.org/Default.aspx>; accessed 8 September 2017).

Study Characteristics

Twenty-five studies used a quantitative approach, one qualitative and three were mixed methods. The designs of the studies included, two meta-analysis studies, six randomised controlled trials, or cluster randomised control trials, one controlled prospective longitudinal study, one semi-structured interviews, one quasi-experimental design, eight pre-test, post-test with control group designs, five pre-test, post-test without control group designs and two time series designs. Studies took place across 12 countries. Sample sizes varied from 28-4443 and children from across the 5-18 age range were involved. The age range of the participants in the studies included, 11 with primary school age children (5-10 years old) and 13 with secondary school age children (11-18 years old). Three of the studies selected participants that crossed both primary school age and secondary school age (7 to 14 years of age). In the two research papers that conducted a meta-analysis, the studies included both primary school age children and secondary school age children.

The interventions varied, Social and Emotional Learning (SEL) was the most common (12 out of 29 included studies) however there were also, stress management interventions, mindfulness interventions, anxiety and coping skills interventions, and MH education and anti-stigma interventions. The detail in which the interventions were described also differed,

information regarding the specific elements of the intervention and how it was provided and by whom, was considerably more limited in a small number of the included papers.

Due to the variety of interventions and outcome indicators, differing outcome measures were employed by the included 29 studies. Twenty-four studies used rating scales, 22 of which reported being validated. The subject completing the outcome measure differed greatly also, most of studies (16) used measures completed by the students, however 10 of the studies also used measures completed by teachers and four of the 29 studies included parent reported measures. Thirteen out of 29 studies reported the theoretical underpinning of the intervention. Of the studies that reported a theoretical underpinning, the most frequent was that of social learning and/or cognitive behavioural theory.

Due to the heterogeneity of the methods and outcomes in the studies described above, meta-analysis was precluded, however this still allowed for description of the studies, their results and limitations and for qualitative synthesis.

Quality appraisal

Quality appraisal was conducted using an appropriate CASP checklist (Critical Appraisal Skills Programme, 2013) by one person. There are CASP checklists for both qualitative and quantitative research designs, however if an appropriate checklist was not available then appraisal took place using checklist points from more than one checklist, such as for the mixed methods research papers. Each study was also appraised in relation to whether the intervention has been theoretically informed as recommended in the Medical Research Council (MRC) guidelines on developing and evaluating complex interventions (Craig et al, 2008). The 'Template for Intervention Description and Replication (TIDieR) Checklist' was

also used during the appraisal process to determine whether there was sufficient information provided by each author to allow for a true evaluation of effectiveness and the ability to replicate. Particular interest was taken in considering adherence and fidelity of the interventions and any omissions were noted as exceptions to quality. (Hoffmann et al, 2014). A brief quality appraisal, including exceptions to quality, reported validity of outcome measures and theoretical underpinning of interventions can be found in Table 1.

RESULTS

Results of individual studies

A brief description of results of the individual studies can be found in Table 1.

Synthesis of Results

Thematic analysis using a process of coding and categorising was completed to identify and analyse patterns within the data. A six-step process was undertaken: familiarisation with the data; generating initial codes; searching for themes; reviewing themes; defining and naming themes; and producing the report. This process was informed by the Braun and Clarke (2006) method of thematic analysis. It was evident from initial generating of codes and definition of themes that these would be based on the different outcome measures. The final themes were: i) help seeking and coping; ii) social and emotional well-being and iii) psycho-educational effectiveness. Each is presented in turn. ;

Help seeking and coping

Help-seeking and coping skills were identified as outcome measures in 14 of the 29 studies. Reduction in stress post intervention was reported by nine authors (Campion and Rocco, 2009; De Anda, 1998; De Villiers and Van Den Berg, 2012; De Wolfe and Saunders, 1995;

Hampel et al, 2007; Kraag et al, 2009; Kuyken et al, 2013; Metz et al, 2013; Schonert-Reichl et al, 2015), whilst five (Collins et al, 2013; King et al, 2011; Merrell et al, 2008; Mishara and Ystgaard, 2006; Rickwood et al, 2004) found no improvement. Four authors, Mishara and Ystgaard, 2006; De Anda, 1998; Kraag et al, 2009; and Merrell et al, 2008) reported increases in the coping skills and strategies used by children that received interventions. De Anda (1998) and Collins et al, (2013) reported a decrease in maladaptive coping skills. King et al, (2011) found that students were more likely to seek help post intervention by approaching a friend, family member or professional if they felt suicidal or depressed. Similarly, Rickwood et al, (2004) found a small increase in help-seeking behaviours after the introduction of their MH promotion programme.

Social and emotional wellbeing

Twenty of the 29 included papers measured one or more aspects of social and emotional well-being. The effectiveness of a MH Promotion programme on the social skills of children was evaluated by five authors (Kimber et al, 2008, Kramer et al, 2009; De Wolfe et al, 1995; Harlacher et al, 2010; Mishara and Ystgaard, 2006) although different outcome measures were used in each case. Four of the authors found a significant increase in social skills and functioning when comparing pre- and post-test scores and Durlak et al, 2011 and Sklad et al, 2012 both found (through meta-analysis) that the included studies showed results of enhanced social skills and increased levels of positive social behaviour following a SEL intervention. However, Kimber et al (2008) found no differential effect on social skills, and positive results regarding prosocial behaviours (such as showing concern for others or behaving in a way that helps or supports another person) were not indicated by Wigelsworth et al, (2013) or Jones et al, (2010).

Campion and Rocco, (2009) and De Villiers and Van Den Berg, (2012) observed improvements in emotional regulation whilst Campion and Rocco, (2009) and Barnes et al, (2012) reported particular improvement in anger management and anger control. An increase in emotional competency and control was noted by Ashdown et al, (2012), Domitrovich et al, (2007) and Schonert-Reichl et al, (2015) following their interventions. These results were like those of Durlak et al, (2011) who found that SEL interventions reduced levels of emotional distress.

Five of the included studies noted the impact of their intervention on symptoms of anxiety and depression (Barnes et al, 2012; Bothe et al, 2014; Collins et al, 2013; Kuyken et al, 2013; Schonert-Reichl et al, 2015). Barnes et al, (2012), Bothe et al, (2014) and Collins et al, (2013) each reported evidence of reduced anxiety levels with Bothe et al (2014) also identifying sustained reduction of anxiety at 12-month follow up. Positive effects on symptoms of depression were noted by Schonert-Reichl et al, (2015) and Kuyken et al, (2013) with the latter study demonstrating sustained improvements at 3-month follow up.

Psycho-educational effectiveness

The third theme apparent within eight studies was relating to providing the participants with an increased knowledge of MH and illness and changing negative attitudes and beliefs. Four authors (Sakellari et al, 2014; Essler et al, 2006; Rickwood et al, 2004; Economou et al, 2012) reported that a psycho-educational intervention increased knowledge of MH.

Economou et al, (2012) and Essler et al, (2006) also explored whether a psycho-educational intervention would change negative attitudes and beliefs. Economou et al, (2012) identified results that showed that the number of participants using positive terms increased after the intervention however, Essler et al, (2006) noted that following their intervention there was

some evidence of an increase in negative attitudes associated with MH stigma. Merrell et al, (2008) Harlacher et al, (2010) and Whitcomb et al, (2012) reported increased knowledge about emotional health and situations.

DISCUSSION

This literature review considered the effectiveness of school-based universal MH and EW programmes for young people. Three themes were generated from the literature; help-seeking and coping, emotional and social well-being and psycho-educational effectiveness. The principle findings are that most studies reported that school-based MH and EW programmes have some positive effect on young people however three studies noted either a negative effect or no effect at all (Essler et al, 2006; Jones et al, 2010; Wigglesworth et al, 2013). The overall findings of this literature review suggest that there is a varied range of interventions that can be implemented with positive effect. These findings are comparative to those of existing literature reviews regarding the use of MH and EW promotional programmes, such as those of Durlak et al, (2011) and Sklad et al, (2012). Whilst these authors focused specifically on Social and Emotional Learning (SEL) programmes they each found that the use of this school-based programme was effective in promoting the MH and EW of young people.

When considering the quality of the included papers, there were both strengths and limitations. One limitation is with the sample sizes of some of the included studies. Mishara and Ystgaard, (2006), Economou et al, (2012), Jones et al, (2010), Wigglesworth et al, (2013), Kimber et al, (2008) and Rickwood et al. (2004) each used a large sample therefore increasing the external validity of the results. However, Ashdown et al, (2012), Barnes et al, (2012), Bothe et al, (2014), De Anda, (1998), Kramer et al, (2009), Sakellari et al, (2014) and Whitcomb et al, (2012) all used samples that were relatively small and therefore it should be

recognised that it is difficult to generalise their results to the wider population. High levels of attrition was also an issue for four of the included 29 studies (Barnes et al, 2012; Collins et al, 2013; Kimber et al, 2008; King et al, 2011). Differing biases in the studies should be acknowledged. For example, Kramer et al, (2009) acknowledge that children and their families were recruited from schools that had already agreed to implement the programme, suggesting that the school already had some confidence in its effectiveness whilst Mishara and Ystgaard, (2006) used “old” data for their control group and the internal reliability of the social skills questionnaire as an outcome measure was deemed insufficient. Possible social desirability bias was questioned as a limitation in the study by Essler et al, (2006) particularly in terms of participants wanting to make an impression on their teachers and peers. In terms of the interventions, intervention fidelity was compromised in the studies conducted by Campion and Rocco, (2009), Jones et al, (2010) Kraag et al, (2009), and Wigelsworth et al, (2013) and a similar bias was evident in the Hampel et al, (2007) study, as the intervention was delivered and evaluated by the existing class teachers.

This review has included all available primary research that met the inclusion criteria thus allowing a broad understanding of the available evidence. However, there were some limitations within the review. Although meta-analysis was not possible our synthesis of the heterogeneous papers was pragmatic and of value in gaining knowledge from the available literature (Pope et al, 2007).

It is recognised that it has not been possible to conclude that any one intervention is superior to another partly due to the varying research methods and outcome measures. Most included studies used outcome measures that can be characterised as person reported outcome measures (PROMS). The purpose of PROMS is for the researcher to be able to gain an insight into participant perceptions (Medical Research Council, 2009). The value of PROMS

within this literature review is that they offer an insight that can not necessarily be gained through observation or other outcome measures. It is noted that child reported PROMS need a level of tentativeness in interpretation (Wolpert et al, 2012).

The theoretical underpinning for the different MH and EW programmes was not always apparent although it is now recognised that complex interventions should always be underpinned by clear theoretical frameworks (McQueen and Jones, 2007; Michie et al, 2005). If a theoretical basis is not acknowledged during the development and design stages then it is likely to result in a weaker intervention (Craig et al, 2008). The level of detail provided regarding each individual intervention varied, from very specific information relating to the different elements of the intervention, to a simple brief description. The theoretical underpinning of the included studies was also considered further in relation to the specific results or overall success of the interventions however, no pattern was found.

The inclusion of studies other than RCTs has enabled a wider and richer review. As with other literature reviews regarding MH and EW programmes, (Wells et al, 2003; Durlak et al, 2011; Sklad et al, 2012) a large number of studies were excluded at each stage of the process and only 29 papers met the inclusion criteria. However, a distinct difference in this review to those previously conducted (Lösel and Beelman, 2003; Kutcher and Wei, 2012; Tenant et al, 2007; Wilson and Lipsey, 2007; Wilson et al, 2001) is that it has focused solely on universal interventions.

The findings of this literature review and the recognition of its strengths and weakness has highlighted research questions that need to be addressed to build the evidence base for universal school-based MH and EW interventions including:

- What is the comparative effectiveness of different theory based interventions in the short and longer term?
- What are the most appropriate outcomes measures for measuring the effectiveness of different types of intervention?

CONCLUSION

We tentatively conclude that school-based universal MH and EW programmes is of value for young people but further evaluative studies are necessary before implementation.

This literature review has synthesised the available evidence concerning the effectiveness of school-based interventions in improving the MH and EW of young people. Three areas of effectiveness were identified; i) help seeking and coping, ii) social and emotional wellbeing and iii) psycho-educational effectiveness. This review has identified the need for further evaluative studies to provide the necessary evidence base to inform nurses, educationalists and public health practitioners.

RELEVANCE TO CLINICAL PRACTICE

The purpose of this review was to determine whether school-based MH promotion is effective and therefore could be used as an alternative or addition to typical healthcare settings. It has already been recognised that the healthcare sector alone is not sufficient if we are to improve the MH and EW of young people and there has been acknowledgement that schools can play a vital role in transforming MH provision for young people (Firth, 2016; Khan, 2016; WHO, 2016).

The findings of the review have shown positive effects of school-based MH promotion on such areas as coping skills, help-seeking skills, social skills, emotional regulation and reduction of symptoms associated with low level depression and anxiety. Any improvements to MH and emotional well-being will reduce the likelihood of MH problems developing, or improve the ability to cope with MH problems in the future, whether that be through such things as stress management or positive help seeking. Considering this it is essential that all available opportunities are taken to provide MH and EW promotional interventions to young people in the school environment particularly through a whole school approach.

Furthermore, this review identifies a requirement for educational professionals and all other school staff to be provided with the necessary skills and knowledge to be able to ensure that the school setting continues to be a beneficial environment for providing MH and EW promotion. This highlights the need for multi-agency working and strong links between the education and healthcare professions. If joint training is provided to MH professionals and school staff as recommended in the 2016 EPIC report then there is a greater chance of improving the MH support provided to young people and reducing the amount of inappropriate referrals to MH teams which in turn reduces waiting lists. This training would also enable school staff to be better equipped to provide school-based promotion programmes such as those reviewed in this literature review.

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Figure 1: PRISMA Illustrating Search Results at Each Stage

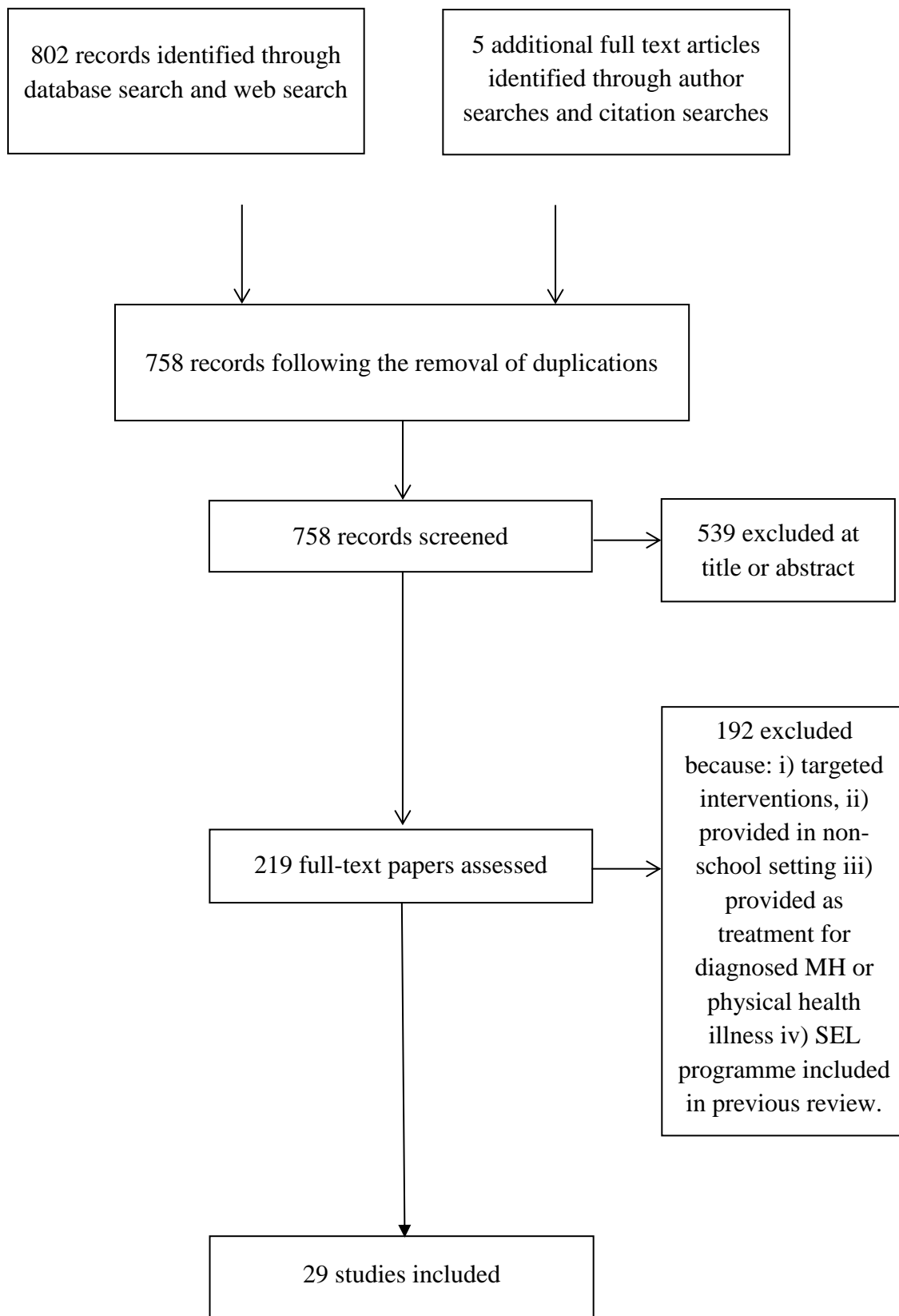


Table 1: Table Detailing all Included Papers and Quality Appraisal

| First author, date and country | Design | Intervention | Participants | Outcome measures and reported validity | Main results | Exceptions to Quality | Theoretical Underpinning of Intervention |
|---------------------------------------|--|---|---------------------|---|---|--|--|
| Ashdown 2012 Australia | Cluster Randomised Control Trial (RCT) | Social and emotional learning (SEL) programme | n=99, 5-7 years | Well-being and social skills rating scales completed by a teacher pre and post intervention. Each measure reported valid for use with children. | Improved social and emotional competence and well-being, a reduction in problem behaviours, and an increase in reading achievement. | Relatively small sample size limiting generalisation. No blinding of the two teachers which may have biased ratings of participants. | Social learning theory and cognitive-behaviour theory. |
| Barnes 2012 America | RCT | Life skills training | n=159, 14-16 years | Anger and anxiety scales pre and post intervention completed by students. Three and six month follow up. Blood pressure measured pre and post test. Instruments chosen were validated for use with adolescents. | Reduced anger, anxiety and blood pressure. Improved anger control. | Relatively small sample with high level of attrition. Single blinded, participants not blinded to the intervention. | Not reported. |

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| Bothe 2014 America | Controlled prospective longitudinal study | Stress management | n=28, 8 years | Anxiety scale completed by students and heart rate measured pre and post intervention and one year follow up. Questionnaire completed by teacher post intervention. Anxiety scale reported to be valid for use with children. | Reduced anxiety maintained at one year qualitatively and quantitatively. | Small sample. Statistically significant differences at baseline between intervention group and control group. Limited baseline data collected. | Not reported. |
| Campion 2009 Australia | Qualitative, semi- structured interviews | MH meditation programme | n=54, 7-12 years 19 teachers 7 parents. | Semi-structured individual interviews and group interviews for students, parents and teachers. | Students, teachers and parents reported reductions in stress and anger and improved concentration and relaxation skills. | Large differences in frequency and content of intervention. Not all interviews conducted using same format of 2 interviewers. No reliability assessment between the 2 interviews. | Not reported. |
| Collins 2013 Scotland | Pre-post intervention with control group | Health intervention for anxiety and coping skills | n=317, 9-10 years | Coping and anxiety scales completed by students pre and post intervention and six month follow up. Scales determined to be valid for use with adults and | Reduced anxiety and improved coping skills and problem solving skills post intervention and at six month follow up. No | High level of attrition as a large number of participants did not complete post intervention or follow up measures, no reason given. | Based on cognitive- behaviour theory. |

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| | | | | children. Comparison of teacher v MH professional led intervention. | difference between teacher v psychologist led groups. | | |
| De Anda, 1998 America | Pre-post intervention with control group | Stress management programme | n=54, 12-14 years | Two self-report measures completed pre and post intervention by the students. Validity of each scale for use with adolescents identified. | Improved coping strategies, reduced level of stress and increased use of relaxation strategies | Randomisation of sample only used for female participants. Male participants self-selected intervention or control group. Small sample. | Cognitive-behaviour theory. |
| De Villiers 2012 South Africa | Pre-post intervention with control groups | Resiliency programme | n=161, 11-12 years | Behaviour and emotional rating scales and resiliency scale conducted pre and post intervention and three month follow up. The scales were completed by the students. Scales reported to be valid. | Improvement of emotional regulation, stress management and problem solving skills. No significant effect on interpersonal skills. Poor maintained improvement at follow up. | Exclusive use of self-report scales. No involvement of teachers in the school, limiting opportunity for continued use of intervention. | Based on social learning theory and cognitive-behaviour theory. |
| De Wolfe 1995 America | Quasi-experimental design | Stress management programme | n=157, 11-12 years | Stress Questionnaire, self-efficacy scale and behaviour scale completed pre and post intervention by the students. | Improvement in social skills, self-esteem and stress levels. | No randomisation or control group. No long term follow up post-intervention. | Not reported. |

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| | | | | Stress questionnaire also completed by the teachers. Validity of scales not reported however reliability acknowledged. | | | |
| Domitrovich 2007 America | RCT | SEL programme | n=246, 4-5 years | Self-reporting assessments completed by students and teacher/parent rating scales pre and post intervention. Some scales reported to be valid; others were adaptations of previously validated scales. | Improved emotional knowledge and social competence. | Intended to complete an extended follow up at two years however this did not happen. No blinding of teachers that rated participants. | Based on the Affective-Behavioural-Cognitive-Dynamic (ABCD) model of development. |
| Durlak 2011 Worldwide | Meta-analysis | SEL programmes | n=270,034 from 213 included papers | A range of psychosocial outcomes including social and emotional skills, attitudes towards self and others and prosocial behaviours. | Improved social and emotional skills, attitudes, behaviour, and academic performance | Studies were excluded if the researchers had not used a control group. It is unclear how many studies were therefore excluded. | N/A |

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|----------------------------|---|---|-------------------------|--|--|---|---|
| Economou 2012 Greece | Mixed methods | MH anti- stigma intervention | n=1081, 13- 15 years | Questionnaire and projective card to write one word, thought or feeling about MH completed by students pre and post intervention. | Positive changes in students' beliefs and attitudes towards people with mental illness. | No follow up post intervention Convenience sample used therefore effecting generalisation to population. | Not reported. |
| Essler 2006 England | Pre-post intervention without control group | Educational intervention to challenge MH stigma and promote MH | n=104, 13- 14 years | Pre post intervention quiz completed by students. | Increased knowledge about MH. | Same quiz used pre and post intervention therefore answers may have been learned. | Not reported. |
| Hampel 2007 Germany | Pre-post intervention with control group | Stress management programme | n=320, 10- 14 years | Pre post intervention and three month follow up coping skills and self-efficacy questionnaires and rating scales completed by students, parents and teachers. Validity of rating scales reported. | Increased perceived self- efficacy, less perceived stress and more adaptive coping at post and follow up assessment for experimental group v control group. | No randomisation No follow up after 3 months conducted. | Based on social learning theory and cognitive- behaviour theory. |

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|------------------------------|---|------------------|----------------------|--|---|---|--|
| Harlacher 2010 America | Pre-post intervention with control group | SEL programme | n=106, 8-10 years | Pre post intervention and two month follow up rating scales to measure social emotional knowledge, and social emotional skills completed by students. Social functioning scale completed by teachers during same time frames as above. Validity and reliability of scales reported. | Treatment group demonstrated improvements of social and emotional learning knowledge according to self and teacher reports. | Relatively small and narrow sample which researchers acknowledge may limit generalisation to child population. | Not reported. |
| Jones 2010 America | Cluster RCT | SEL programme | n=942, 8-9 years | Teacher and parent completed questionnaires pre and post intervention. Self-reporting assessments pre and post intervention completed by students. Validity of scales not reported. | No significant impact on social, emotional, behavioural or academic functioning. | Differences in programme implementation across different schools and with different teachers. Poor reliability of two of the measures reported. | Based on social learning theory, cognitive theory. |

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| Kimber 2008 Sweden | Pre-post intervention without control group | SEL programme | n=1417, 7- 14 years | Questionnaires prior and at 12 month and 24 month follow up completed by students. Validity of instruments reported. | Modest improvement on mental health and associated health behaviours. | High level of attrition. Only fully completed and correctly completed questionnaires were analysed. | Based on social learning theory. |
| King 2011 America | Pre-post intervention without control group | Suicide prevention and depression awareness programme | n=1030, 14- 18 years | Pre and three month post intervention follow up questionnaires completed by students. Validity of questionnaire reported. | Reduced suicidal ideation, an increase in help seeking behaviours and improved ability to identify support. | High level of attrition. Sample chosen may limit generalisability to adolescent population. | Based on social cognitive theory. |
| Kraag 2009 Netherlands | Cluster RCT | Stress management programme | n=1467, 9- 11 years | Pre and post intervention and 12 month follow up anxiety, depression and stress rating scales completed by students. Validity of scales reported. | Improvements in stress awareness, coping, problem solving and stress symptoms. However decrease in problem solving skills at follow up. | Narrow sample which may affect generalisability. Some differences in programme implementation across different schools. | Not reported. |

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|----------------------------|---|--------------------------|--|--|---|--|---|
| Kramer 2009 America | Time Series | SEL programme | n=67, 5-6 years and their parents or caregivers | Twice pre and twice post intervention behaviour and social skills rating scales completed by the teacher and the parent. No self-reporting scales completed by students. Validity of rating scales reported. | Improved pro-social behaviours. | Relatively small sample. More up to date rating scales available. Possible bias due to teachers providing the intervention and rating any improvements in participants. | Not reported. |
| Kuyken 2013 England | Pre-post intervention without control group | Mindfulness programme | n=522, 12- 16 years | Pre post intervention and three month follow up rating scales of MH and overall wellbeing completed by students. Validity of scales reported. | Moderate reduction in low- grade depressive symptoms immediately following intervention and at three month follow up, and reduction in levels of stress at three month follow up. | Sample recruited from schools with prior interest in the intervention which may limit generalisability. | Not reported. |
| Merrell 2008 America | Pre-post intervention without control group | SEL programme | Study 1, n=120, 10- 11 years | Pre post intervention measures of healthy social and emotional behaviour and levels of internalising symptoms | Increased knowledge of social and emotional concepts and effective coping strategies. | Relatively small samples. No follow up conducted. | Based on cognitive- behaviour theory. |

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| | | | Study 2, n=65, 12-14 years | completed by students. Validity of scales reported. | | | |
| Metz 2013 America | Pre-post intervention with control group | Mindfulness programme | n=182, 15- 18 years | Pre post intervention rating scales of emotional regulation, psychosomatic complaints and perceived stress completed by students. Validity of rating scales reported. | Improved emotional regulation, emotional awareness. Decrease in psychosomatic complaints and stress levels. | Convenience sampling used affecting generalisability. | Not reported. |
| Mischara 2006 Denmark/ Lithuania. | Mixed methods | MH programme for coping skills | Denmark n=322, mean age 7.5 Lithuania n=418, mean age 6 | Pre post intervention social skills rating scale completed by students, structured interviews pre intervention completed by students, followed by observations by teachers. Validity of rating scales for use with children reported. | Increased level of positive coping strategies, an improvement in social skills and a reduction in problem behaviours. | Data from a previous control group used in the Denmark arm of the study and differences in baseline data for intervention and control groups. | Not reported. |

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|------------------------------------|--|--------------------------------------|-----------------------|--|---|--|---|
| Rickwood 2004 Australia | Pre-post intervention with control group. | Educational MH programme | n=457, 14- 16 year | Pre post intervention rating scales on stigma, knowledge and help- seeking intentions completed by students. Validity of rating scales reported. | Increased knowledge and reduced negative beliefs about people with MH problems. | No follow up conducted. No randomisation. Differences in baseline data for intervention and control groups. | Not reported. |
| Sakellari 2014 Greece | Mixed methods | Educational MH programme | n=59, 13-16 years | Pre intervention interviews for baseline data collection followed by pre and post intervention interviews about mental illness. All interviews conducted with the students individually. | Improved attitudes toward MH. | Relatively small sample. | Not reported. |
| Schonert- Reichl 2015 Canada | RCT | SEL with mindfulness programme | n=99, 9-11 years | Pre and post intervention self assessment of well being, social skills and peer acceptance completed by student. Pre and post assessment of wellbeing, social skills and peer acceptance also completed using a peer | Improved cognitive and emotional control, stress physiology and empathy. Reduced symptoms of depression and peer-rated aggression. | Relatively small sample. Differences in baseline data for intervention and control groups. No blinding for teachers as raters. | Based on unspecified psychological theory. |

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|-----------------------------|--|----------------|---|---|--|--|--|
| | | | | assessment. Validity of rating scales reported. | | | |
| Sklad 2012 Worldwide | Meta-analysis | SEL programmes | n=average, 543, from 75 included studies. | A range of psychosocial outcomes including social-emotional skills, prosocial behaviours and self image. | Positive effects on social skills, antisocial behaviour, substance abuse, positive self-image, academic achievement, mental health, and prosocial behaviour. | Studies were excluded if the researchers had not used a control group. It is unclear how many studies were therefore excluded. | N/A |
| Whitcomb 2012 America | Interrupted time series design | SEL programme | n=88, 6-7 years | Pre post intervention rating scales of emotional knowledge and social behaviour completed by students and teachers. Validity of rating scales reported. | Increased knowledge about emotional situations and decreased problem behaviours. | Convenience sampling used and relatively small sample. Some differences in implementation of the intervention. No control group. | Based on cognitive-behavioural theory. |
| Wigelsworth 2013 England | Pre-post intervention with control group | SEL programme | n=4443, 11-12 years | Self-report scales for emotional symptoms and conduct problems completed by students pre post intervention. Validity of rating scales reported. | No discernible impact. | Differences in the implementation of the intervention. | Based on the concept of emotional intelligence |

