School-based programmes to prevent suicide and build resilience among students

A literature review and national stocktake

Canterbury District Health Board
Te Poari Hauora ō Waitaha

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OVERVIEW

In response to a number of suicides among young people in South Canterbury over the past 2-3 years, South Canterbury District Health Board (SCDHB) is considering investing in school-based suicide prevention programmes.

In order to assist SCDHB in choosing suitable programmes, the Information Team at Community & Public Health, Christchurch, was asked to review the evidence base for a variety of programmes, including those with the specific and explicit aim of preventing suicide and those with the more general aim of promoting resilience and emotional wellbeing. To ensure that existing school-based efforts to prevent suicide and build resilience were not overlooked, the Information Team was also asked to find out about programmes that may already be in use at both a local and a national level.

Since the literature review and national programme inquiry that were conducted in response to these requests were deemed to be useful for a broader audience than SCDHB personnel, these parts of the original report are being made widely available, particularly via health and education sector networks.

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The final document was reviewed internally by Dr Annabel Begg.

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BACKGROUND

Suicide is a significant cause of death among young people in New Zealand, ranking as second to only traffic fatalities as the leading cause of death among those aged 15 to 24 years. As a place where many young people spend a considerable proportion of their time, schools are logical and natural settings for youth suicide prevention efforts.

TYPES OF SCHOOL-BASED SUICIDE PREVENTION PROGRAMMES

Two main types of school-based programme can be considered to have a role to play in youth suicide prevention:

1. *Categorical programmes* aim to specifically and explicitly address the problem of youth suicide by using surveillance and instructional methods to enhance the identification and referral, and/or improve the distress-coping skills, of students who may be at risk for suicide.

2. *General programmes* have the more generic aim of enhancing emotional wellbeing among a broader population of students by using a variety of mental health promotion and mental illness prevention activities to cultivate the development of a set of protective factors.

ABOUT THIS DOCUMENT

PURPOSE

The purpose of this document is to:

1. Inform key stakeholders in the health and education sectors about the evidence base for key categorical and general programmes.

2. Report on relevant programmes for which there is current activity at the national level.

KEY OBJECTIVES

The key objectives of this document are to:

1. Evaluate the evidence for the effectiveness of various categorical and general programmes.
2. Identify moderators of and potential barriers to programme effectiveness.
3. Identify potential enablers for and barriers to programme implementation.
4. Highlight issues that may be of particular relevance to indigenous and ethnic minority students.
5. Discuss the applicability of the reviewed programmes to schools in New Zealand.
6. Provide details of any relevant national school-based programmes and initiatives.

STRUCTURE

The report has a three-part structure. Part A is a literature review that informs key objectives 1-5. Part B is an overview of national programmes and initiatives that informs objective 6. Part C is a summary of key findings that includes recommendations for the New Zealand health and education sectors regarding the adoption and implementation of individual programmes.

KEY FINDINGS FROM THE LITERATURE REVIEW

CATEGORICAL PROGRAMMES

TYPES OF CATEGORICAL PROGRAMME

Five different types of school-based categorical programme, some of which can be further classified into distinct programme subtypes, were identified:

1. Suicide screening programmes
2. Gatekeeper training programmes for adults
3. Peer-helping programmes
    a. Peer gatekeeper training
    b. Peer leadership training
4. Curriculum-based programmes
    a. Suicide-specific education programmes
    b. Combined suicide-specific education and life skills training programmes
5. Individual-level psychotherapeutic interventions

LIMITATIONS

Due to the difficulties in measuring the statistically rare outcome of student suicide completions, most evaluations of categorical programmes have based their conclusions regarding programme effectiveness on assessments of various proxy outcomes, such as student identification and referral rates, programme participants' knowledge, attitudes and skills, and students' self-reported suicide risk and coping potential. Although these outcomes give some indication of likely programme effectiveness, the impact of most programmes on student suicide completions remains unknown.

PROGRAMMES THAT APPEAR PROMISING

GATEKEEPER TRAINING PROGRAMMES FOR ADULTS

Gatekeeper training programmes for adults emerged as the most promising type of categorical programme. These programmes aim to enhance the identification and referral of students at risk for suicide by improving the identification and intervention abilities of diverse adult members of the school community. The evidence suggests that they are effective in terms of increasing participants' confidence in their ability to identify and refer at-risk students, and improving their actual knowledge of warning signs, risk factors, and recommended intervention behaviours.

Although few studies have assessed their effect on actual intervention behaviours, there is some evidence to suggest that the incorporation of role-play practice into standard gatekeeper training protocols can enhance the ability of a larger-than-usual number of school staff to communicate with distressed students. One study comparing the impact of gatekeeper training on the intervention behaviours of school personnel and parents suggests that novel referral processes may need to be established in order to enable parents to effectively refer distressed students for services. The finding that skill in the use of recommended intervention behaviours decreases over time suggests that refresher-update training will need to be provided in order to allow participants to strengthen and maintain their gatekeeper skills.

Three additional programme limitations were identified:

1. Ethnic minority students may be underidentified in trained populations.
2. A substantial proportion of identified students may not access the services to which they are referred.
3. The services to which students are referred may not be effective in terms of reducing suicide risk.

To overcome these limitations, the evidence suggests that there is a need to:

1. Ensure that the suicide risk indicators and warning signs communicated by gatekeeper training programmes are culturally sensitive.
2. Extend school-based gatekeeper training to trusted and respected members of ethnic minority and indigenous communities.
3. Investigate the degree to which referrals to informal or traditional forms of support are effective in reducing suicide risk among ethnic minority and indigenous students.
4. Deliver gatekeeper training as part of a broader district-wide suicide prevention programme that also includes interventions aimed at overcoming some of the known barriers to students seeking and receiving effective follow-up support.

Although no school-based studies have been able to assess the independent effect of gatekeeper training for adults on student suicide-related outcomes, the reported observation of substantial reductions in suicide and suicidal behaviour in three non-school populations following the implementation of such broad suicide prevention programmes suggests the potential utility of the above approach.

COMBINED SUICIDE-SPECIFIC EDUCATION AND LIFE SKILLS TRAINING

Curriculum-based programmes that combine suicide-specific education with life skills training also emerged as a promising approach. These programmes aim to:

1. Enable students to identify the signs and symptoms of suicide in themselves and others.
2. Increase the likelihood that students will seek appropriate adult help when faced with such problems.
3. Reduce the cognitive and behavioural correlates of suicide by promoting the development of distress-coping and problem-solving skills.

The evidence suggests that exposure to these programmes is associated with improvements in students' self-reported suicide risk, self-reported coping potential and perceived self-efficacy regarding suicide intervention on behalf of a peer. Although few studies have assessed actual behaviour, there is some evidence to suggest that such improvements translate into improved problem-solving and suicide-intervention skills.

Despite the promise of these programmes, there are concerns about the safety of the suicide-specific education component. Although studies examining the effectiveness of suicide-specific education curricula suggest that exposure is associated with improvements in students' knowledge, attitudes and behavioural intentions regarding suicide and seeking adult help, many of these curricula frame suicide as a personal event linked to mental illness. While this may be a beneficial way of understanding the issue for some students, there is concern that such decontextualisation could:

1. Deflect attention away from the development of interventions aimed at addressing the social determinants of mental health.
2. Exacerbate the documented tendency of some indigenous young people to explain their suffering in terms of personal and collective failings.

This suggests that schools should:

1. Refrain from delivering standalone suicide-specific education curricula.
2. Embed life skills training in general mental wellbeing programmes rather than in specific suicide prevention activities.

PROGRAMMES THAT ARE NOT RECOMMENDED

In addition to suicide-specific education curricula, the following programmes are not recommended at the present time.

SUICIDE SCREENING

The evidence suggests that it would be best for schools to refrain from implementing screening programmes at the present time. Although they appear to be capable of identifying a sub-group of potentially at-risk students who may not otherwise arouse the concern of school personnel, they may still fail to identify a considerable number of those at-risk because:

1. Student participation rates in screening programmes are typically modest.
2. Most suicide screening instruments have not yet been validated for ethnic minority students.

Feasibility and acceptability studies also suggest that screening programmes may generate an unmanageable burden of false positives and meet with considerable resistance from the school professionals most likely to be charged with their implementation. In conjunction with unresolved concerns about the potential for screening to cause undue distress to students, these considerations suggest that screening programmes need to undergo further research and development before any decisions regarding their implementation in New Zealand can be made.

PEER-HELPING PROGRAMMES

There are concerns about the safety of peer-helping programmes that train peers to act as gatekeepers. Although peer-helping programmes that are based on a leadership rather than a gatekeeper model have the potential to improve the poor staff-student communication that has been proposed to act as a barrier to the effectiveness of adult gatekeeper training programmes, there is as yet insufficient evidence to support their recommendation.

INDIVIDUAL-LEVEL PSYCHOTHERAPEUTIC INTERVENTIONS

There is currently insufficient evidence to support the recommendation of school-based psychotherapeutic interventions being delivered to individual students.

GENERAL PROGRAMMES

PROGRAMMES IDENTIFIED

Seven distinct programmes and one broader class of programme were identified. All consist of one or more social and emotional learning curricula designed to help students learn and master some of the individual-level competencies that foster psychological resilience. These programmes and their constituent curricula are:

1. Programmes for preschoolers and primary school-aged children
    a. Zippy's Friends
    b. Promoting Alternative Thinking Strategies (PATHS)
        i. Preschool PATHS
        ii. Grade-level PATHS
    c. Social Decision Making and Problem Solving Program (SDM-PSP)
2. Programmes for intermediate and secondary school-aged children
    a. Penn Resiliency Program (PRP)
    b. Travellers
3. Programmes for children of all school ages
    a. FRIENDS
        i. Fun FRIENDS
        ii. FRIENDS for Life - Child
        iii. FRIENDS for Life – Youth[1]

[1] The nomenclature used for the different FRIENDS curricula is consistent with that used in the international literature. In New Zealand FRIENDS for Life – Child is also known simply as FRIENDS for Life, and FRIENDS for Life – Youth is also known as My FRIENDS Youth. See http://www.lifepaths.org.nz/friends-for-life/ for further details.

b. Strong Kids

    i. Strong Start

    ii. Strong Kids

    iii. Strong Teens

c. Mindfulness-based programmes

LIMITATIONS

Although the general programmes included in the literature review seek to help students learn and master some of the individual-level competencies that foster psychological resilience, all evaluations have assessed programme impact by measuring proxy outcomes for the more complex attribute of psychological resilience. They have therefore not necessarily been proven to produce more psychologically resilient students. Furthermore, since the relationship of many of these outcomes to the specific attribute of psychological resilience to suicide has not yet been elucidated, the likely contribution of these programmes to the broader aim of preventing student suicide is presently unclear.

PROGRAMMES THAT APPEAR PROMISING

Grade-level PATHS, Zippy's Friends, PRP and the FRIENDS for Life curricula emerged as the most promising programmes. Although research on school-based mindfulness programmes is at an early stage, mindfulness-based programmes as a general approach also show promise.

GRADE-LEVEL PATHS VERSUS ZIPPY'S FRIENDS

Grade-level PATHS and Zippy's Friends exclusively target primary school-aged children, which is advantageous in view of the greater potential benefits arising from intervening earlier rather than later in children's school experience. Participation in either programme appears to be associated with improvements in social-emotional competence and reductions in various problem behaviours. The research supporting grade-level PATHS, however, is more rigorous than that supporting Zippy's Friends, with beneficial intervention effects having been demonstrated for larger and more ethnically diverse samples of children over longer periods of time.

Three programming features also suggest that grade-level PATHS is likely to be associated with greater long-term benefits than Zippy's Friends:

1. Whereas Zippy's Friends is a time-limited programme that targets children aged 6-7 years, grade level PATHS is a comprehensive, developmentally-sequenced programme that comprises separate volumes of lessons for children in grades 1-5 (aged 6-11 years).

2. Whereas Zippy's Friends positions individual children as the primary agents of change, grade-level PATHS recognises the importance of emotional learning in the context of meaningful relationships by emphasising use of teaching strategies that optimise the quality of teacher-child and peer-peer interactions.

3. Whereas the development of Zippy's Friends was based on the findings of research in a single area, grade-level PATHS programming represents the integration of theory, research and practice from a variety of different fields.

The only advantage that Zippy's Friends is likely to present over grade-level PATHS is the relative ease with which the programme can be implemented and delivered.

PRP VERSUS FRIENDS FOR LIFE

Developed by clinical psychologists in the US and Australia, respectively, the PRP and FRIENDS for Life curricula incorporate cognitive-behavioural therapy (CBT) approaches to prevent specific symptoms in older children. The research reviewed here suggests that the single PRP curriculum targeting children aged 10-14, and the FRIENDS for Life curricula targeting children aged 7-12 and 12-16, are effective in reducing symptoms of depression and anxiety, respectively. The developers of PRP have also taken the time to develop and evaluate culturally-tailored programme applications, one of which has been shown to be effective in reducing depressive symptoms among a specific population of low-income ethnic minority children living in the US.

Overall intervention effects for both PRP and FRIENDS for Life are largest when the curricula are delivered to students with elevated baseline symptoms, and when those charged with implementation have either undergone clinical training or have received extensive training and support from the clinically-trained programme developers. These findings highlight the necessity for intended group leaders to receive comprehensive training and supervision from the programme developers or experts familiar with these interventions, and suggest that schools may be best served by delivering the curricula to small groups of at-risk children. Since the practice of CBT is continuously being refined as new research emerges, it would be ideal if group leaders had CBT expertise.

MINDFULNESS-BASED PROGRAMMES

Evaluations of mindfulness-based programmes point to a range of potential benefits for children and young people, including reduced stress, improved mental health and enhanced cognitive abilities. However, further research is needed to determine what constitutes age-appropriate mindfulness practice for children at different stages of development, and how such practice might be adapted to ensure that it is both safe for students experiencing high levels of distress, and meaningful for students from diverse cultural backgrounds. Since the vast majority of studies have evaluated the impact of programmes that have been facilitated by highly experienced mindfulness practitioners, there is also a need to assess the degree of training that teachers may require in order to be able to successfully teach mindfulness to students. Although the limited availability of experienced mindfulness practitioners and mindfulness training programmes for teachers may prevent the widespread implementation of mindfulness-based programmes at present, mindfulness training should be explored as a viable option for enhancing the mental wellbeing of schoolchildren in New Zealand.

PROGRAMMES REQUIRING MORE RESEARCH

SDM-PSP, TRAVELLERS AND STRONG KIDS

There is currently insufficient high quality research to support the recommendation of SDM-PSP or Travellers. Although the research supporting Strong Kids is of a better quality, there are concerns about the validity of the method that was used to develop the programme, and an absence of longer-term follow-up data.

OVERALL CONCLUSIONS

SYNERGY BETWEEN CATEGORICAL AND GENERAL PROGRAMMES

The two broad classes of programme included in the literature review – categorical and general programmes – are complementary in terms of suicide prevention. General programmes aimed at building individual-level, resilience-related competencies promote the use of coping skills that may ultimately mitigate the emergence of acute states of distress. However, building such competencies may take a considerable amount of time and it is unlikely that exposure to social and emotional learning curricula will be sufficient to address the many complex mediators of suicidal behaviour. There will thus be an ongoing need for categorical

programmes aimed at preparing schools to identify and respond effectively to suicidal and potentially suicidal students.

RECOMMENDED PROGRAMMES

Overall, the literature review suggests that the resilience of school children could be fostered throughout their school experience by:

1. Delivering grade-level PATHS to primary school-aged children.
2. Delivering PRP or FRIENDS for Life to at-risk intermediate and/or secondary school-aged children.
3. Exposing children of all school ages to developmentally and culturally appropriate mindfulness practice.

The identification and response to suicidal and potentially suicidal students could be improved by instituting school-based gatekeeper training programmes for:

1. School personnel (teachers, administrators and school health professionals).
2. Parents.

ISSUES FOR ETHNIC MINORITY AND INDIGENOUS STUDENTS

Whether categorical or general, the evidence suggests that school-based programmes are more likely to be effective for ethnic minority and indigenous students if they are developed in collaboration with the relevant communities and embedded within the context of larger community-based suicide prevention efforts. Thus, gatekeeper training could also be provided to trusted and respected community members who have linkages to both professional and informal support networks, and adaptations to the content of social and emotional learning curricula could be made in collaboration with the communities and institutions in which they are to be implemented.

IMPORTANCE OF A PREVENTION SCIENCE APPROACH

One of the ways in which the emerging discipline of prevention science aims to bring about improvements in public health is by assessing the effectiveness, feasibility, and acceptability of preventive interventions. Since most of the programmes recommended in this report have been evaluated in overseas contexts, it is imperative that they are comprehensively trialled and evaluated in a diverse sample of New Zealand schools prior to considering widespread implementation. All

programmes destined for such implementation should be accompanied by clear and logical frameworks for ongoing evaluation. Any cultural tailoring of programmes should take place after the impact of the original version has been rigorously evaluated on cohorts of students from distinct cultural backgrounds. Action-based learning in the context of ongoing evaluation can then be used to make culturally sensitive adaptations.

KEY FINDINGS FROM THE NATIONAL INQUIRY

In terms of the discreet programmes reviewed in Part A of this document, the national inquiry revealed New Zealand-based activity for only the following four programmes:

1. Gatekeeper training
2. FRIENDS
3. Travellers
4. Mindfulness-based programmes

However, the inquiry suggested that a number of initiatives that may prove to have beneficial effects on student wellbeing are currently being implemented or trialled in various parts of the country. These include:

1. Ministry of Education Initiatives
    a. Preventing and Responding to Suicide
    b. Tools and resources for promoting good cyber-citizenship and reducing cyber-bullying
    c. Positive Behaviour for Learning (PB4L)
2. Ministry of Health Initiatives
    a. Mentally Healthy Schools (MHS)
3. Mental Health Foundation Initiatives
    a. Flourishing Environments Analysis Tool (FEAT)

PART A: LITERATURE REVIEW

1. INTRODUCTION

1.1. BACKGROUND

Suicide is second to only traffic fatalities as the leading cause of death among young people (those aged 15 to 24) in New Zealand. In 2010, suicide claimed the lives of 113 young New Zealanders, which equates to a rate of 17.7 per 100,000 per year. Among Organisation for Economic Cooperation and Development (OECD) countries, New Zealand males and females aged 15 to 24 have the fourth- and second-highest youth suicide rates, respectively (Ministry of Health 2012). Among a random sample of students surveyed in 2007 as part of the Youth2000 surveys of the health and wellbeing of secondary school students in New Zealand, 6.7% of female students and 2.9% of male students reported having attempted suicide in the previous 12 months (Fortune, Watson et al. 2010). Youth suicide therefore remains a pressing public health concern.

1.2. PROGRAMMES TO ADDRESS YOUTH SUICIDE

A variety of suicide prevention programmes have been developed in order to address youth suicide, with school-based programmes having received a great deal of international attention. As a place where young people spend a considerable proportion of their time, where peer interactions can be mobilised around a common theme, and where education and socialisation are normative processes, schools are considered to be logical and natural sites for youth suicide prevention efforts (Berman, Jobes et al. 2006).

1.3. TYPES OF SCHOOL-BASED SUICIDE PREVENTION PROGRAMMES

School-based suicide prevention programmes can be *categorical* or *general,* according to the level at which suicidal behaviour is addressed:

- *Categorical programmes* specifically and explicitly address the problem of youth suicide by targeting specific risk behaviours.
- *General programmes* seek to enhance a set of protective factors that moderate the occurrence of a variety of risk behaviours. These protective factors can be

either personal (e.g. social and emotional competencies) or environmental (e.g. a school's ethos and social policies).

While there has been much debate about the place of these distinct approaches in promoting mental health and preventing mental health problems in young people (Tennant, Goens et al. 2007), both instruction specific to particular risk behaviours and strategies to enhance generic protective factors are regarded as necessary for addressing the problem of youth suicide (Kalafat 2003).

Categorical and general school-based suicide prevention programmes can be further classified as either *universal*, *selective*, or *indicated*[2], according to the intensity of the intervention and its target population:

- *Universal programmes* target all individuals in a given population (e.g. school; classroom) with the aim of reducing risk factors or enhancing protective factors across an entire population.
- *Selected programmes* are more intensive interventions for subgroups who may not adequately respond to universal interventions. These subgroups are comprised of individuals who are not engaging in suicidal behaviour, but who may be exposed to a number of risk factors that could place them at greater risk of such behaviour in the future.
- *Indicated programmes* are highly individualised and specialised interventions for those individuals who are already engaging in suicidal behaviour and may not adequately respond to universal and selected programmes.

Although the proportion of students who would adequately respond to universal, selected and indicated interventions will vary across school communities, providing or having the capacity to refer students to programmes and services operating at each of these three levels is regarded as an important aspect of a well-developed and comprehensive school-based suicide prevention strategy (Miller, Eckert et al. 2009).

[2] In the education sector, universal interventions are also described as *primary* interventions, selected interventions as *secondary* or *targeted* interventions, and indicated interventions as *tertiary* or *individualised* interventions.

1.4. ABOUT THIS REVIEW

SCOPE

This review is concerned with school-based programmes that could be conceptualised as having a role to play in suicide prevention. It therefore focuses on both categorical and general programmes, and on programmes that can be delivered at any one of the aforementioned levels of intervention. Its focus is on packaged or discreet programmes rather than whole school or systemic approaches, and it does not address intervention or postvention activities.

The specific protective factor that the general programmes seek to enhance is that of psychological resilience. The focusing on the psychological rather than the contextual aspects of resilience was largely dictated by the time constraints governing the review. These constraints also dictated a narrative rather than a systematic approach to the review.

PURPOSE

The primary purpose of the review is to inform key stakeholders in the health and education sectors about the evidence base for the aforementioned programmes. Its specific aims are to:

1. Evaluate the evidence for programme effectiveness.
2. Identify moderators of and potential barriers to effectiveness.
3. Identify potential enablers for and barriers to implementation.
4. Highlight issues that may be of particular relevance to indigenous and ethnic minority students.
5. Discuss the applicability of the reviewed programmes to schools in New Zealand.

Since the empirical literature available for each of the programmes included in the review does not always speak to aims 2-4, the nature of the evidence discussed varies from programme to programme.

INTENTION

The intention of this review is to bring a prevention science perspective to the issue of youth suicide. Prevention science is an emerging discipline that aims to bring

about improvements in public health by identifying factors and processes that lead to positive and negative health behaviours and outcomes, assessing the efficacy and effectiveness of preventive interventions, and identifying optimal means for dissemination and diffusion (Society for Prevention Research 2011). This review accordingly emphasises both interventions aimed at mitigating risk factors and those aimed at enhancing protective factors, and takes a thorough approach to evaluating the evidence base for these interventions.

STRUCTURE

The review has a layered structure, with different levels of detail being provided for different readers. The aims, content and evidence for each programme are reviewed in detail for those seeking a thorough and comprehensive understanding of the information presented. For those seeking a less detailed understanding, summaries are provided at three different levels:

1. At the end of each detailed programme review, the findings for individual programmes are summarised.

2. In the conclusion sections for categorical and general programmes, the findings for each of the programmes within these two broad classes are individually summarised in both standard and tabular format.

3. In the overall conclusion, the key findings are presented in a highly condensed format.

RELATIONSHIP TO OTHER RECENTLY PUBLISHED MATERIAL ON SCHOOL-BASED SUICIDE PREVENTION PROGRAMMES

During the course of writing this review, three other sources of information on school-based suicide prevention interventions were published: a systematic review conducted by Australian researchers (Robinson, Cox et al. 2012); a systematic review conducted by Canadian researchers (Katz, Bolton et al. 2013); and a review and update of the New Zealand suicide prevention guidelines for schools (Te Pou 2012). There is inevitably a great deal of overlap between the information presented here and that contained in these three documents. Despite this overlap, each source of information has its own unique features:

- The systematic reviews provide information on the effectiveness of several prevention programmes[3]. The review conducted by Robinson, Cox et al. (2012) also provides information on the effectiveness of several intervention and postvention activities. However, neither review provides detailed information on the acceptability, feasibility or context in which the interventions were applied, and both are primarily focused on the effectiveness of categorical prevention programmes.

- The guidelines review and update also reviews research pertaining to the effectiveness of prevention and postvention activities but it provides a more nuanced analysis than either of the systematic reviews because it includes information related to acceptability, feasibility and implementation context, and considers whole-school approaches to suicide prevention. Although it contains some information on general programmes aimed at enhancing protective factors, its primary focus is on categorical programmes.

- The work presented here reviews research pertaining to the effectiveness of prevention activities, but does not address those related to intervention or postvention. Like the guidelines review and update, it also considers programme acceptability, feasibility and implementation context, but is unique in its extensive coverage of both categorical and general prevention programmes. It is also unique with regard to its explicit intention to highlight issues relevant to indigenous and ethnic minority students.

STRENGTHS AND LIMITATIONS

The strengths of this review are:

- Its coverage of both categorical and general programmes.

- Its explicit intention to highlight issues relevant to indigenous and ethnic minority students.

- Its consideration of contextual information

- Its inclusion of findings from both quantitative and qualitative research.

[3] The review conducted by Katz, Bolton et al. (2013) provides information on the effectiveness of a programme not covered in this review, the Good Behavior Game.

Beyond those imposed by the scope, its primary limitations are:

- Its non-exhaustive search of the literature.
- Its reliance on the interpretation of a single analyst rather than a team of analysts.

To offset the latter limitation, the work presented here has been reviewed by two researchers who are widely acknowledged as national experts in the fields of suicidology and indigenous mental health, respectively. Together with the aforementioned documents by Robinson, Cox et al. (2012), Katz, Bolton et al. (2013) and Te Pou (2012), this review provides a reasonably comprehensive synthesis of the research examining the effectiveness of school-based programmes aimed at preventing suicide and building psychological resilience among school-aged children aged 4-18.

2. SEARCH STRATEGY

Studies were identified by conducting a series of searches of one or more of three major bibliographic electronic databases (MEDLINE, PsycINFO, and ISI Web of Science). Initial MEDLINE and PsycINFO searches were conducted for the time periods spanning 1946 - October Week 4 2012 and 1967 - October Week 4 2012, respectively. Subsequent searches were conducted at various time points in early 2013 to ensure retrieval of more recently published material. No time frame was specified for the searches conducted using ISI Web of Science.

For categorical programmes, two major searches were performed:

1. MEDLINE was searched using the terms “Suicide” OR “Suicide, Attempted” OR “Self-Injurious Behaviour” OR “Self-Mutilation” AND “Preventive Medicine” OR “Crisis Intervention” OR “Prevention” OR “Health Education” OR “Early Intervention” AND “Schools” OR “Curriculum”.

2. ISI Web of Science was searched using the terms “suicide prevention” AND school* OR “education sector” OR “education* setting*”.

For general programmes, psychological factors that may confer resilience to suicidality were identified by scanning the literature retrieved from PsycINFO searches using the terms “Suicide” OR “Suicide, Attempted” AND “Resilience”. The factors identified were then used as search terms in the following manner:

1. ISI Web of Science was searched for “mental health promotion" AND “school*” OR “classroom*” OR “curricul*” OR "education sector" OR "education* setting*" AND “resilience” OR "psychological hardiness" OR "problem*solving" OR “coping” OR “self-efficacy” OR “mastery” OR “competence” OR “agency” OR "self-control" OR "personal control" OR “self-regulation” OR “self-esteem” OR "emotional wellbeing" OR "emotional intelligence" OR "cultural identity" OR "social skills" OR "social support" OR “relatedness” OR “belonging” OR "social comfort" OR “connection” OR “adaptability” OR “adjustment”.

2. PsycINFO was searched for “School-Based Intervention” AND “Mental Health Programs” AND “Resilience (Psychological)” OR “Coping Behavior” OR “Emotional Control” OR “Emotional Development” OR “Emotional Intelligence” OR “Self-Regulation” OR “Problem Solving” OR “Self Efficacy” OR “Self Esteem” OR “Social Skills” OR “Wellbeing” OR “Competence” OR “Cultural Identity” OR “Ethnic Identity”. A less specific search of PsychINFO

using the terms “School-Based Intervention” AND “Mental Health Program Evaluation” was subsequently performed to ensure that relevant programmes had not been missed.

For both categorical and general programmes, a number of specific PsycINFO searches were performed to ensure retrieval of all relevant studies for particularly well-researched interventions. For categorical programmes, these searches used the terms “Suicide” OR “Suicide, Attempted” AND “Screening” OR “Gatekeeper” AND “Schools”. For general programmes, they used the term “School-Based Intervention” AND either “Zippy’s Friends.mp”, “Promoting Alternative Thinking Strategies”, “Penn Resiliency Program”, “Mindfulness”, “FRIENDS for Life”, “Depression (Emotion)” OR “Anxiety”.

In addition to the electronic database searches, the reference lists of identified studies were reviewed in order to locate additional relevant studies.

3. CATEGORICAL PROGRAMMES

3.1. TYPES OF CATEGORICAL PROGRAMME

The school-based categorical programmes that have been evaluated so far can be grouped into five main categories:

1. Suicide screening programmes.
2. Gatekeeper training programmes for adults.
3. Peer-helping programmes.
4. Curriculum-based programmes.
5. Individual-level psychotherapeutic interventions.

Some of the curriculum-based programmes are universal interventions, others are selected. Since screening, gatekeeper and peer-helping programmes aim to identify and intervene with at-risk students, they are considered to be selected interventions. All five types of programme have an explicit focus on suicide and are therefore only considered to be appropriate for secondary, and sometimes intermediate, school-aged children.

3.2. OVERARCHING CONCERNS ABOUT CATEGORICAL PROGRAMMES

While each type of categorical programme has its own particular set of advantages and disadvantages, similar concerns have been raised about each of them. These include concerns about:

1. The potential for iatrogenic effects.
2. The existence of barriers to those students who are identified as at-risk receiving follow-up support.
3. The cultural responsiveness of categorical programmes.

The intention of outlining these overarching concerns before discussing each type of programme in detail is not to paint an overly negative picture of categorical programmes but rather to highlight those concerns that will not be addressed in subsequent sections.

POTENTIAL FOR IATROGENIC EFFECTS

In the case of screening and curriculum-based programmes, there is widespread concern that asking questions and/or talking about suicide will induce suicidal behaviour (Overholser, Hemstreet et al. 1989, Shaffer, Vieland et al. 1990, Shaffer, Garland et al. 1991, Pena and Caine 2006).

In the case of peer-helping programmes, the concerns relate to:

1. The responsibility that adolescents can be made to feel for their peers.
2. The tendency for adolescents who are themselves vulnerable to volunteer for such programmes.
3. The potential for inducing iatrogenic effects by bringing high-risk adolescents together (Hazell and King 1996, Dishion, McCord et al. 1999, Dishion, Poulin et al. 2001, Te Pou 2012).

BARRIERS TO IDENTIFIED STUDENTS RECEIVING FOLLOW-UP SUPPORT

Since most categorical programmes focus on identifying and referring rather than providing direct assistance to at-risk students, their effectiveness as suicide prevention strategies is contingent upon the availability of school- or community-based services with proven ability to reduce youth suicide risk. Although promising approaches to intervening with young people at-risk have been developed (King, Kramer et al. 2006, Miller, Rathus et al. 2007), many schools will not have access to services using such approaches. This may be a particular issue for schools in rural communities.

Even if effective services are available, there are likely to be other barriers that prevent identified students seeking follow-up support. The *New Zealand Mental Health Survey* found that young people aged 16-24 years were the least likely of any age group in New Zealand to visit a health service for a mental health reason (Oakley-Browne, Wells et al. 2006). Although the precise reasons for this are unclear, recent research has identified a number of structural and personal barriers to help-seeking for suicidal behavior and/or mental health problems among young people and adults. In addition to lack of availability of treatment, these barriers include financial constraints, problems with transportation, the inconvenience of attending treatment, low perceived need for treatment, low perceived efficacy of treatment, the desire to handle the problem alone, the belief that one should be able to handle the

problem alone, the belief that it is a good idea to keep feelings of depression to oneself, the belief that the problem would resolve of its own accord, compromised emotional competence, and the fear of stigmatisation (Gould, Velting et al. 2004, Rickwood, Deane et al. 2005, Gould, Marrocco et al. 2009, Bruffaerts, Demyttenaere et al. 2011).

CULTURAL RESPONSIVENESS OF CATEGORICAL PROGRAMMES

This concern relates to the observation that most categorical programmes are based on assumptions about suicide that are inconsistent with indigenous worldviews. For example, many of these programmes are based on a psychological understanding of suicide that locates suicide risk in individuals. This understanding promotes the view that suicide is an expression of mental illness and that suicide prevention falls primarily within the purview of formal mental health service delivery systems. Since suicide in indigenous communities is frequently identified as the terminal outcome of historical oppression, current injustice, and ongoing social suffering, such individualistic approaches to suicide prevention might be regarded as inadequate or even inappropriate in certain cross-cultural contexts (Wexler and Gone 2012).

SCOPE OF CHAPTER 3

It is beyond the scope of this chapter to address issues related to the provision and effectiveness of school- or community-based services for students identified as at-risk, or to review interventions aimed at addressing the barriers to these students seeking and receiving follow-up support. However, the concerns related to the potential for iatrogenic effects and the cultural responsiveness of categorical programmes will be addressed in the following sections, as and when data pertaining to these issues are available.

3.3. SUICIDE SCREENING PROGRAMMES

BACKGROUND

Suicide screening programmes have been implemented in numerous schools throughout the US. They aim to identify students at risk for suicide and refer them to appropriate professional help. Their perceived utility is based on research suggesting that adolescents do not reveal their suicidal thoughts or behaviours to others (Velez and Cohen 1988, Cantwell, Lewinsohn et al. 1997, Young and Zimmerman 1998) and are more likely to disclose sensitive information in a self-administered instrument than in a face-to-face evaluation (Newman, DesJarlais et al. 2002, van Griensven, Naorat et al. 2006).

SUICIDE SCREENING INSTRUMENTS

All screening programmes rely on the availability of brief, valid and easy-to-administer screening instruments. The validity of a screening instrument depends on its sensitivity and specificity. Sensitivity is a measure of the instrument's ability to correctly identify those who are truly at-risk (true positives). Specificity is the instrument's ability to correctly identify those who are not currently at-risk (true negatives). In the case of suicide, sensitivity is more important than specificity as it is vital to detect all those who are truly at-risk. Increasing an instrument's sensitivity in order to ensure such detection, however, increases the number of false positives, thereby reducing its specificity. Although falsely labelling a student as 'positive' is of less consequence than falsely labelling a student as 'negative', the impact of generating false positives on the system-of-care to which the screening programme is linked can be great and costly and should not be underestimated (Horowitz, Ballard et al. 2009).

A number of suicide screening instruments, including the Columbia Suicide Screen (CSS; Shaffer, Scott et al. 2004), the Suicide Risk Screen (SRS; Thompson and Eggert 1999), and the Suicidal Ideation Questionnaire (SIQ; Reynolds 1991), have been validated and evaluated in schools throughout the US. Whereas the CSS and the SIQ were designed to be administered to all students in a particular environmental context (e.g. school, classroom), the SRS has only been validated on students at risk for school dropout. When compared to 'gold standards' such as diagnostic interviews and/or previously validated instruments, the CSS has 75% sensitivity and 83% specificity, the SRS 87-100% sensitivity and 54-60% specificity, and the SIQ 83-100% sensitivity and 40-70% specificity.

EFFECTIVENESS OF SUICIDE SCREENING

A few studies have explored the potential benefits of suicide screening. Scott, Wilcox et al. (2009) and Husky, Kaplan et al. (2011) compared CSS-based screening to school personnel in terms of their ability to identify students considered to be at-risk for suicide.

When examining the degree of overlap between CSS- and personnel-identified students, Scott, Wilcox et al. (2009) found that 34% of those students classified according to DISC[4] criteria as having a serious mental health problem were identified

[4] DISC refers to the Diagnostic Interview Schedule for Children. It is typically used as the basis of a structured interview undertaken to provide a psychological assessment or psychiatric evaluation.

only by screening. The corresponding proportion for school personnel was 13%. Similarly, among students with recent suicidal ideation or a history of suicide attempt, 40.2% were identified only by screening, and 8.9% only by school personnel. Although these results suggest that screening can identify at-risk students that may not otherwise arouse concern, the capacity of school personnel to identify troubled students was likely underestimated as, in the interests of maintaining student confidentiality, teachers were not included in the study[5]. Furthermore, since there was minimal overlap between the groups of students identified only by screening and those identified only by school personnel, this study highlights the ongoing need for school personnel to be actively engaged in identifying and helping at-risk students.

Husky, Kaplan et al. (2011) compared referrals for mental health services among students randomised to either CSS-based screening or the usual process of identification by school personnel (teachers, clinical staff and administrative staff), parents, or student self-referral. After controlling for age, race, school and pre-study referral status, the odds of receiving a referral for mental health services were over 20 times higher for screened versus control students. Post-study data also indicated that, among screened students, 95.5% of school-based mental health services referrals, and 39.3% of community-based referrals, were subsequently attended (Husky, Kaplan et al. 2011)[6]. A further study exploring service use by at-risk students after school-based suicide screening revealed that, among at-risk students who were not receiving any type of mental health service and who participated in follow-up interviews two years after the initial screen, approximately 70% followed through with the screening's referral recommendations (Gould, Marrocco et al. 2009)[7].

While these studies point to the potential for screening to improve the identification and follow-up care of at-risk students, some of their limitations must be acknowledged. The main limitation of not only these studies, but of evaluations of school-based suicide screening programmes in general, relates to the modest student participation rates. A substantial proportion of students selected for inclusion typically do not participate because: (1) their parents fail to grant or actively refuse

[5] The school personnel charged with identification included clinical staff (psychologists, social workers, guidance counsellors, nurses, special education coordinators and specialty counsellors) and administrative staff (deans, principals and vice principals).

[6] No information concerning the long-term follow-up of these students was reported.

[7] The number of treatment sessions ranged from 1 to 104, with a median of 10 visits. Only 2% of this at-risk group had only one treatment visit. The most common treatment modality was psychotherapy.

consent; (2) the students themselves refuse to participate; or (3) the students are absent on the allocated screening day(s). Since such students could only ever be identified in school by routine in-school mechanisms, and could conceivably be at greater risk for suicide than their participating counterparts, the studies by Scott, Wilcox et al. (2009) and Husky, Kaplan et al. (2011) may have overestimated the relative identification superiority of screening.

A further limitation of the study by Gould, Marrocco et al. (2009) is that a substantial proportion (33.5%) of at-risk students not receiving mental health services at the time of the screen did not participate in the follow-up study. These students were more likely to be male than female and it is conceivable that, in addition to researchers, they were also less likely to engage with mental health services. Thus, while screening may be capable of detecting a sub-group of at-risk students who are not already known to school personnel, there is no guarantee that these students will engage with mental health services.

EFFECTIVENESS FOR ETHNIC MINORITY STUDENTS

The sensitivity of the CSS with respect to identifying at-risk ethnic minority students could well be lower than the reported 75% because this figure applies to a validation sample comprising predominantly White suburban youth. Although the CSS appeared to be valid for detecting suicide and other mental health concerns in a sample comprising predominantly African American students, the modest screening participation rates prevented the drawing of definitive conclusions regarding the effectiveness of CSS-based screening for ethnic minority students (Brown and Grumet 2009). Despite uncertainty regarding the meaning of the findings of this study, it is well documented that suicide risk and protective factors may be influenced by cultural context and that different cultural groups manifest distress in different ways (Goldston, Molock et al. 2008). In this regard, Brown and Grumet (2009) noted the likelihood of suicide in African American students being less premeditated and more impulsive, thus underscoring the need to examine the validity of existing suicide screening instruments for assessing suicide risk in ethnic minority students.

POTENTIAL BARRIERS TO IMPLEMENTATION

FEASIBILITY IN REAL-WORLD SETTINGS

The work required to follow up screen-positive students may limit the feasibility of screening in 'real-world' high school settings. When Halfours, Brodish et al. (2006)

administered the SRS to randomly selected 'high risk' and 'typical' students from 10 urban high schools in the US, the staff responsible for following up on the positive results became overwhelmed by the sheer number of referrals. Thirty-one percent of students receiving a positive screen did not complete a follow-up interview and, when follow-up was completed, it was never conducted within the proposed one-week time frame. Many staff considered the additional workload created by the number of positive screens to be unrealistic and questioned whether some of the students identified were truly at risk. Corroborating such feedback, the positive predictive value (PPV) of the SRS in this setting was estimated to be 18-21%, which means that approximately only 1 in 5 students screening positive would have been deemed to be at-risk by clinicians. Although Scott, Wilcox et al. (2010) have shown that the scoring algorithms of the CSS can be altered in a way that reduces the screen-positive population without dramatically reducing the identification of students considered to be at high risk, Thompson and Eggert (1999) have argued that a high tolerance of false positives is necessary to achieve an appropriate sensitivity because of the seriousness of missing a single suicidal individual. In this regard, it is important to remember that, even when the scoring algorithms were set at their original lower threshold, the CSS could only identify 75% of students considered to be at high risk for suicide (Shaffer, Scott et al. 2004).

ACCEPTABILITY

Studies focusing on the acceptability of school-based screening programmes suggest that they may meet with considerable resistance, particularly from the professionals most likely to be responsible for implementing them. Screening programmes were rated as significantly less acceptable and more intrusive than either staff in-service training or curriculum-based suicide prevention programmes among randomly sampled, US-based high school principals (Miller, Eckert et al. 1999), school psychologists (Eckert, Miller et al. 2003), school superintendants (Scherff, Eckert et al. 2005) and students (Eckert, Miller et al. 2006). Indeed, the principals, psychologists and superintendants considered screening programmes to be in the "unacceptable" range.

The significant rates of non-participation due to the failure of researchers to obtain parental consent for students to participate in evaluations of suicide screening programmes (Gould, Marrocco et al. 2005, Brown and Grumet 2009, Scott, Wilcox et al. 2009, Husky, Kaplan et al. 2011) suggest that many parents would also rate them as unacceptable. Although an Australian-based study reported that the majority of students, staff and parents who responded to a survey designed to assess school consumers' perceptions of the acceptability and intrusiveness of suicide prevention

programmes found screening to be an acceptable, appropriate and potentially effective means of identifying students at-risk, the findings cannot necessarily be generalised to other populations because the study was conducted in an all-boy, select-entry government school (Robinson, Pan Yuen et al.).

Interviews with members of various US-based school communities suggest that screening may be less acceptable than other forms of school-based suicide prevention because of concerns about:

1. The potential for asking questions about suicidality to induce suicide.
2. The legal ramifications of failing to either identify or follow-up a student who goes on to commit suicide.
3. The potential lack or limited availability of appropriate school- or community-based services for those identified as at-risk.
4. The difficulties associated with establishing programme cohesiveness and continuity in schools with high staff turnover (Halfours, Brodish et al. 2006, Brown and Grumet 2009, Whitney, Renner et al. 2011).

POTENTIAL FOR IATROGENIC EFFECTS

In relation to the concern that asking questions about suicidality might induce suicide, more research into the possible iatrogenic effects of suicide screening programmes is needed. Although the findings from a large US-based randomised controlled trial (RCT) suggested that neither distress nor suicidality increased among either the entire population, or a high-risk sub-population, of SIQ-exposed students when compared with their non-exposed counterparts (Gould, Marrocco et al. 2005), the smaller Australian-based study of students attending the all-boy, select-entry government school documented significantly higher proportions of students reporting that they found the screen to be moderately or very distressing among at-risk versus not-at-risk students. Compared to those not at-risk, those identified as at-risk were also significantly less likely to report finding the screening programme moderately or very worthwhile (74.9% versus 48.4%; Robinson, Pan Yuen et al.).

OTHER POTENTIAL BARRIERS

There is currently a lack of data available on the cost-effectiveness of screening, as well as when and how often screening instruments are best used. This latter point is particularly important given that suicide risk among young people can fulminate and change rapidly (Ministry of Health and New Zealand Guidelines Group 2003).

SUMMARY OF SUICIDE SCREENING

A number of screening instruments aimed at identifying young people at risk for suicide have been developed. Evaluations of school-based suicide screening programmes based on these instruments suggest that screening can identify a sub-group of potentially at-risk students who may not otherwise arouse the concern of school personnel. However, screening is unlikely to be capable of identifying all those at-risk because student participation rates in screening programmes are typically modest and most screening instruments have not yet been validated for ethnic minority students. Furthermore, there is no guarantee that those identified by screening will engage with mental health services, or that these services will use approaches that have been shown to be effective in reducing youth suicide risk.

Studies of the feasibility, acceptability and harm-inducing potential of school-based suicide screening programmes suggest the existence of a number of barriers to implementation. In terms of feasibility, high rates of false positives may place an unmanageable burden on school personnel and the system-of-care to which the screening programme is linked. Studies of acceptability further suggest that such programmes may meet with considerable resistance from the school professionals most likely to be responsible for implementing them. The question as to whether screening causes undue distress to students requires further investigation as one study suggests that a substantial proportion of those considered to be at-risk may find the screening questions distressing.

Further research on the effectiveness, feasibility and acceptability of school-based screening programmes is required before any decisions regarding their implementation in New Zealand can be made.

3.4. GATEKEEPER TRAINING PROGRAMMES FOR ADULTS

BACKGROUND

Gatekeeper training programmes share with screening programmes the aim of identifying students at-risk for suicide and enhancing their referral to appropriate services, but differ with respect to the means used to identify such students. Whereas screening programmes rely on self-identification prompted by the administration of a validated screening instrument, school-based gatekeeper training programmes seek to improve the identification and intervention abilities of diverse members of the school community. Although the populations targeted include teachers, school health professionals, administrators, support staff, parents, bus drivers and students,

this section will focus on evaluations of gatekeeper programmes that have specifically targeted adult members of the school community.

GATEKEEPER TRAINING PROGRAMMES

A variety of gatekeeper training programmes have been developed, with some being commercially available as train-the-trainer models. Most programmes include training in risk factors, warning signs, responding skills, community resources and referral procedures, but the precise content varies from programme to programme. This variability reflects an inherent strength of gatekeeper training programmes, namely that training can be adapted to address specific local issues, such as cluster suicides or exposure to a particular risk factor. A further strength of such programmes is that they make use of existing relationships to provide help to those at risk, thereby strengthening local communities and empowering them to take positive action in situations where they previously may have felt helpless (Isaac, Elias et al. 2009).

EFFECTIVENESS OF GATEKEEPER TRAINING

The most rigorous evaluation of the effectiveness of school-based gatekeeper training conducted to date used a cluster RCT design to examine the impact of Question Persuade and Refer (QPR) training[8] on a random sample of 249 school staff in a US school district with an extensive, existing suicide prevention programme (Wyman, Brown et al. 2008). At an average of 1-year post-training, intention-to-treat analyses revealed substantial positive training effects on participants' appraisals of their ability to identify and refer at-risk students, and modest positive training effects on their actual knowledge of warning signs, risk factors, and recommended QPR intervention behaviours.

Similar effects on appraisals and/or declarative knowledge have also been reported in less rigorous evaluations of QPR training that relied on non-equivalent control group designs. For example, Tompkins, Witt et al. (2010) found significantly greater pre- to post-intervention gains in both appraisals and knowledge among trained school personnel versus non-trained community controls in a small, rural school district in the US. Similarly, follow-up surveys administered by Reis and Cornell

[8] QPR training is taught by certified instructors. The standard 1-to-2-hour training for adult members of the school community covers the following: rates of youth suicide; warning signs and risk factors for suicide; and procedures for asking a student about suicide, persuading a student to get help, and referring a student for help.

(2008) at an average of 4.7 months following the delivery of QPR training throughout one US state revealed significantly greater knowledge among trained versus non-trained teachers and counsellors. In the studies of both Tompkins, Witt et al. (2010) and Wyman, Brown et al. (2008), steeper gains in appraisals and knowledge were documented among those staff with the lowest initial assessment scores, with the former investigators noting the tendency for such staff to have had no prior suicide prevention training and/or no prior contact with suicidal young people.

Despite the large training-related increases in participants' appraisals and knowledge, the effect of training on prevention practices may be comparatively small. Wyman, Brown et al. (2008) noted only a small positive training effect on the number of students asked by staff about suicide, with the increase in this key suicide identification behaviour only being evident among the 14% of staff who were already communicating with students about suicide before training. Although QPR trainees reported making significantly more no-harm contracts[9] than controls in the study by Reis and Cornell (2008), the inherently weaker study design precludes assignment of these apparent group differences to gatekeeper training.

The finding that training increased self-reported suicide identification behaviour only among staff already communicating with students about suicide suggested the existence of substantial barriers to open communication between staff and students. Corroborating the existence of such barriers, a student survey conducted as part of the same study from which this finding emerged revealed that students with a recent suicide attempt had half the odds of those with no attempt in terms of reporting that they would talk to a counsellor or other adult in school if they needed help (17.8% vs 37.8%; Wyman, Brown et al. 2008). These findings highlight the potentially limited effects of gatekeeper training in the absence of additional training or interventions aimed at increasing the degree of open communication between staff and difficult-to-reach students.

Other evaluations of school-based gatekeeper training have focused on less widely disseminated, US-based programmes. Project SOAR (Suicide, Options, Awareness, and Relief), for example, is a gatekeeper training programme delivered to all school counsellors in Dallas, Texas. A cross-sectional survey of 75% of the Dallas school counsellors attending a mandatory school counsellor meeting in 1999 revealed that the majority of counsellors knew the recommended intervention steps to take when a student was assessed as having high suicidal risk, and were confident about their

[9] Please note that the existing research does not support the use of no-harm contracts as a method for preventing suicide. See: McConnell 2007.

ability to effectively perform specific suicide prevention and intervention tasks (King and Smith 2000). In the absence of an equivalent control group and a pre-post training comparison, such outcomes cannot be definitively attributed to the counsellors having undergone SOAR training. Nevertheless, two findings are suggestive of the programme's positive effects:

1. Counsellors who had received SOAR training in the previous three years were found to be significantly more knowledgeable and confident than counsellors who had received SOAR training prior to this period.

2. Substantially more counsellors in this study reported strongly believing that they could identify a potentially suicidal student than in a nationwide survey of school counsellors that was administered at around the same time (56% vs 38%; King, Price et al. 1999).

Similarly limited statements can be made about the effectiveness of a school-based gatekeeper programme that has been delivered to school staff in the Los Angeles Unified School District (LAUSD). Although a survey of 95 randomly-selected parents in the LAUSD suggested that over two-thirds of students identified by the programme subsequently received school or community mental health services, the study relied solely on parent report and did not seek information on the quality, continuity or outcomes of the care provided (Kataoka, Stein et al. 2007). Despite such limitations, the finding that almost one third of students with a recent suicide attempt were reported as not having received any community mental health services at the 5-month follow-up suggests that there are barriers to young people receiving appropriate support.

POTENTIAL MODERATORS OF PROGRAMME EFFECTIVENESS

ROLE PLAY PRACTICE

An RCT comparing standard QPR training to QPR training plus role play practice demonstrated significantly greater pre- to post-test improvements in blind-third-party-observed gatekeeper skills among participants allocated to the latter condition (Cross, Seaburn et al. 2011). The skills most notably improved were the general ability to communicate comfortably with a student in distress and, to a lesser extent, the specific ability to ask directly about suicide. This suggests that the inclusion of role play practice in standard gatekeeper training programmes can improve staff-student communication. Despite such promising results, the finding that school schedules, the disciplinary and evaluative roles of adults, and other characteristics of school-based adults in many schools render them psychologically, temporally, and

culturally inaccessible to students (Lindsay and Kalafat 1998) suggests that it may take more than the provision of additional training to increase staff-student communication.

REFRESHER-UPDATE TRAINING

Despite persisting improvements over time, Cross, Seaburn et al. (2011) noted that 3-month follow-up scores on measures related to blind-third-party-observed gatekeeper skills were significantly lower than immediate post-training scores for both standard and role-play-enhanced training conditions, thus highlighting the need for schools and/or training providers to enlist strategies that support the strengthening and maintenance of gatekeeper skills over time.

PARTICIPANT CHARACTERISTICS

Cross, Seaburn et al. (2011) also compared the effectiveness of gatekeeper training for school personnel and parent participants. Although few differences between these participant groups on blind-third-party-observed gatekeeper skills were found, school personnel scored significantly higher on the ability to provide an effective referral for suicidal students immediately after training and at 3-month follow-up. Although school personnel may have greater opportunity to encounter distressed students, it is likely that the school context, which has built-in processes for student intervention, provides a clear and normative referral process for school personnel. Thus, if parents are included in gatekeeper training programmes, novel processes that enable them to refer distressed young people for services need to be established. Cross, Seaburn et al. (2011) recommend institutionalising a link between school counsellors and trained gatekeeper parents.

EFFECTIVENESS FOR ETHNIC MINORITY STUDENTS

In their evaluation of the LAUSD gatekeeper training programme, Kataoka, Stein et al. (2003, 2007) found that:

1. Despite higher rates of suicide attempts, Latino students were less likely to be identified by the programme than Caucasians.

2. Identified Latino students were subsequently less likely to receive community mental health services than their non-Latino peers.

The first of these findings suggests that the effectiveness of gatekeeper programmes for ethnic minority students may be compromised because of issues pertaining to the cultural sensitivity of the suicide risk indicators and warning signs communicated by

gatekeeper programmes[10]. The second finding points to the likely existence of cultural barriers to ethnic minority students seeking and receiving support from formal mental health services.

Research with ethnic minority populations around the world suggests that these barriers might include fear of stigmatisation and concerns that mental health services will be contrary to cultural values (Goldston, Molock et al. 2008). In this regard, it is interesting to note that Freedenthal and Stiffman (2007) found that fear of stigma and embarrassment was associated with not seeking help when suicidal in a study of American Indian adolescents.

In conjunction with research highlighting the preferences of some cultural groups for traditional healing practices and informal support when faced with mental health difficulties (Goldston, Molock et al. 2008), these findings highlight the importance of investigating the degree to which referrals to informal or traditional sources of support are effective in reducing suicide risk among ethnic minority students.

FURTHER ISSUES FOR ETHNIC MINORITY STUDENTS

Some of the points raised in the previous section highlight a key issue for ethnic minority students, namely that suicide prevention efforts may need to go beyond the school in order to realise substantial benefits for these students. In their discussion of cultural considerations in adolescent suicide prevention, Goldston, Molock et al. (2008) highlight the importance of multifaceted, community-based efforts in culturally relevant suicide prevention and suggest that such efforts need to be developed in collaboration with the community in order to be successful.

A model programme in this regard is the Adolescent Suicide Prevention Project that was developed in collaboration with an American Indian community living on a reservation in New Mexico (May, Serna et al. 2005). This program had multiple components, including a school-based life skills development curriculum, provision of formal services in both conventional and unconventional settings, postvention measures, and a network of community gatekeepers who were not only trained in

[10] In New Zealand, Lifeline Aotearoa has been delivering a community-based gatekeeper training programme known as Applied Suicide Intervention Skills Training (ASIST) since 2005. Although ASIST originated in Canada, Lifeline Aotearoa has worked with two reference groups in order to tailor the programme to the New Zealand cultural environment. All ASIST resources were reviewed and further resources were developed, including a cross-cultural handbook and a series of fact sheets on supporting people with different cultural backgrounds. Some of the key resources have been translated into Te Reo Māori.

formal referral processes but also in providing counselling to those young people who preferred to seek help and assistance from knowledgeable and trusted laypersons in less formal settings. Data from the project documented a decrease of 89.7% in suicidal gestures and attempts among young people aged 11-18 years throughout the period of programme implementation.

Although the role of community gatekeeper training in bringing about this reduction is unclear, these findings nevertheless suggest the potential utility of extending school-based gatekeeper training to trusted and respected members of ethnic minority and indigenous communities.

GATEKEEPER TRAINING PROGRAMMES IN NON-SCHOOL SETTINGS

As with screening, the overarching limitation of the available studies on the effectiveness of school-based gatekeeper programmes is that they have not examined effectiveness in relation to actual student suicide attempts and/or completions. Although difficult to measure due to the sensitivity of the issue and the very large sample sizes needed to detect changes in the relatively low suicide base rate in most student populations, information on such outcomes is vital for understanding whether the documented gains in the knowledge, skills and attitudes of school gatekeepers are translated into tangible benefits in terms of saving student lives. In addition to the indigenous community cited above, positive effects on these outcomes have also been observed following the implementation of gatekeeper programmes in the US Air Force (Knox, Litts et al. 2003) and the Norwegian Army (Mehlum and Schwebs 2000). However, since gatekeeper training was only one aspect of the multifaceted programmes delivered to these populations, the unique and independent effect of gatekeeper training on reducing suicide attempts and completions is not yet clear. Given this limitation, it would seem prudent for those school communities interested in the promise of gatekeeper training to regard it as but one potentially useful strategy that is ideally enlisted as part of a broader suicide prevention programme.

POTENTIAL ENABLERS AND BARRIERS TO IMPLEMENTATION

ACCEPTABILITY

Acceptability studies conducted with diverse school community stakeholders suggest that gatekeeper training for adult members of the school community is likely to meet with considerably less resistance than screening programmes, thereby

facilitating implementation (Miller, Eckert et al. 1999, Eckert, Miller et al. 2003, Scherff, Eckert et al. 2005, Eckert, Miller et al. 2006).

CONTEXTUAL VARIABLES

A number of contextual variables may influence the ease with which gatekeeper training can be implemented. In their qualitative investigation of the characteristics of schools that had high and low rates of implementing the LAUSD programme, Stein, Kataoka et al. (2010) found that high-implementation schools tended to have a highly-organised response system with clear lines of communication, clearly delineated and documented protocols and procedures for responding to at-risk students, and strong administrative support. In contrast, youth suicide tended to be a low priority on the agenda of administrators from low-implementation schools, with only a handful of individuals being engaged in suicide prevention activities and much confusion about the confidentiality of student information. Kalafat and Ryerson (1999) similarly identified supportive administration as a key facilitator of the implementation of a school-based youth suicide programme that included gatekeeper training for adult members of the school community. Committed staff, the presence of an on-site advocate who assumed responsibility for programme coordination and integrity, and the capacity of schools to manage student referrals by maintaining ongoing linkages with community agencies were also identified as key facilitators of implementation.

SUMMARY OF GATEKEEPER TRAINING PROGRAMMES FOR ADULTS

A variety of gatekeeper training programmes have been developed. As with screening, these programmes aim to enhance the identification and referral of at-risk students. Several evaluations of gatekeeper training programmes that target adult members of the school community suggest that training is associated with significant improvements in participants' appraisals of their ability to identify and refer at-risk students, and in their actual knowledge of warning signs, risk factors, and recommended intervention behaviours. The practical importance of these effects, however, is less clear as very few studies have assessed participants' prevention practices, and none have compared referral rates or suicide-related outcomes for students in trained versus non-trained populations.

The most robust findings related to prevention practices suggest that, in the absence of interventions aimed at overcoming the barriers to open communication that often exist between staff and students, training is likely to increase the use of suicide identification behaviours only among staff members who are already communicating

with students about suicide. The inclusion of role-play practice in gatekeeper training programmes may enhance the ability of a broader group of staff to communicate with distressed students. However, given the likely existence of multiple barriers to open staff-student communication, a systemic approach that also addresses the obstacles imposed by overcrowded school schedules and the social and behavioural norms that typically characterise staff-student interactions may ultimately be required. The observed decrements in gatekeeper skills over time suggest that the effectiveness of gatekeeper training with regard to improving prevention practices will also depend on the provision of refresher-update training. The observation that school personnel score higher than parents on the ability to provide an effective referral for distressed students suggests that current referral processes may require modification to enable parent participants to effectively refer students for intervention.

Although studies comparing follow-up referral rates for students in trained versus non-trained populations have not been conducted, research examining the receipt of formal mental health services among students in a trained population found that a significant proportion of those most at-risk do not access such services. This suggests that gatekeeper training programmes are more likely to be effective if they are implemented as part of a broader school-based suicide prevention programme that also includes interventions aimed at overcoming some of the known barriers to students seeking and receiving follow-up support. The same research also found that ethnic minority students may be underidentified by gatekeeper training programmes, and that there may be substantial barriers to such students seeking and receiving support from formal mental health services. These findings suggest the need to:

1. Ensure that the suicide risk indicators and warning signs communicated by gatekeeper training programmes are sensitive to the different ways in which distress is expressed by different cultural groups.

2. Extend school-based gatekeeper training to trusted and respected members of ethnic minority and indigenous communities.

3. Investigate the degree to which referrals to informal or traditional forms of support are effective in reducing suicide risk among ethnic minority and indigenous students.

Despite the limitations of gatekeeper training, it is likely to meet with less resistance than screening, and reductions in suicide and suicidal behaviour have been observed

following its implementation as part of multifaceted suicide prevention programmes in various non-school populations. Although it is difficult to generalise these findings to school populations and programmes, the research overall suggests that gatekeeper training delivered as part of a broader suicide prevention programme may hold promise as an effective school-based intervention.

3.5. PEER-HELPING PROGRAMMES

BACKGROUND

Research suggests that while suicidal adolescents most often reveal their thoughts and feelings to peers, only a small proportion of peer confidants tell an adult about their suicidal peers (reviewed in Kalafat and Elias 1995). Research also suggests that peers are much more likely than adults to be aware of suicidal behaviour in their friends (Gould, Klomek et al. 2009). Peer-helping programmes have therefore been proposed as potentially useful components of well-developed school-based suicide prevention strategies (Stuart, Waalen et al. 2003).

TYPES OF PEER-HELPING PROGRAMME

Existing studies have focused on the effectiveness of one of two types of peer training:

1. Gatekeeper training.
2. Leadership training.

Similar to gatekeeper training for adults, peer gatekeeper training aims to enhance the identification and referral of students at-risk for suicide by providing skills training in suicide risk assessment and intervention (Stuart, Waalen et al. 2003). In contrast, peer leadership training is broadly aimed at changing the norms and behaviours of students within a particular school environment in order to achieve specific aims, such as increasing staff-student communication, reducing implicit suicide acceptability, and increasing the use of both formal and informal coping resources (Wyman, Brown et al. 2010).

EFFECTIVENESS OF PEER GATEKEEPER TRAINING

Evaluations of school-based peer-helping programmes are few. In an uncontrolled survey-based evaluation of the Many Helping Hearts peer gatekeeper training programme, Stuart, Waalen et al. (2003) reported significant post-intervention improvements in actual knowledge about suicide, self-reported skills for responding

to suicidal peers, and positive attitudes toward suicide intervention among previously designated peer helpers in five purposively sampled Canadian high schools. Comparisons of scores obtained immediately and three months following training suggested that the positive changes in knowledge and skills, but not attitudes, were maintained over time. Unfortunately, the absence of a control group precludes attribution of these apparent improvements to gatekeeper training. Furthermore, the modest percentage of peer helpers who completed all three survey administrations (57%) raises questions about response bias.

EFFECTIVENESS OF PEER LEADERSHIP TRAINING

Wyman, Brown et al. (2010) conducted a rigorous, RCT-based evaluation of the Sources of Strength peer leadership training programme. In this programme, student opinion leaders from diverse social cliques are trained to change the norms and behaviours of their peers by conducting well-defined school messaging activities under the supervision of staff mentors. A total of 18 high schools from both urban and rural areas in three US states were randomised to immediate intervention or wait-list control. Surveys administered to peer leaders in all 18 schools, and representative samples of the general student population in the 12 rural schools, were used to assess the short-term impact of peer leadership training on norms about suicide, social connectedness and help-seeking.

Training was reported to effect positive changes in norms across both the peer leader and full student populations after only three months of school-wide messaging. The norms most strongly enhanced were students' perceptions that adults in their school can provide help to suicidal students and the acceptability of seeking help from adults. Of particular interest, the largest and most positive increases in perceptions of adult help occurred among students with a history of suicidal ideation. Among peer leaders, training also enhanced the use of positive coping resources and the support offered to peers, with trained peer leaders in the larger, urban schools being four times as likely as their untrained counterparts to refer a suicidal friend to an adult. Although longer-term follow-up data were not collected, these results suggest that Sources of Strength holds promise as an intervention for enhancing student-staff connectedness.

Peer leadership training is also delivered as part of Yellow Ribbon International for Suicide Prevention, a school-based approach that draws on both adult gatekeeper and peer-helping programme models. Part of this training centres around school-wide distribution of the "Ask4Help" card, which contains suicide hotline numbers, instructions to students to give the card to somebody who can help, and directions to

potential helpers on how to proceed. Although Yellow Ribbon peer leadership training was once implemented in a number of New Zealand-based schools by a charitable trust (Bennett, Coggan et al. 2003), the only study to assess the impact of Yellow Ribbon programming on the outcome that the peer leadership training is hypothesised to positively affect – student help-seeking – was conducted in the US.

This study used a pre-post intervention design to survey staff at an experimental and control school, and students at the experimental school, about help-seeking behaviour (Freedenthal 2010). Staff at the experimental school did not report any increase in student help-seeking six to eight months following the introduction of Yellow Ribbon, and comparisons with the control school showed no difference in terms of pre-post intervention change between schools. Students at the experimental school reported increases in help-seeking from only one of the twelve potential types of helper listed in the survey: crisis hotlines. However, these findings must be viewed cautiously as the study had a number of serious methodological limitations, including non-random school selection, use of a control school whose students had markedly different demographic characteristics to those of the experimental school, and a low response rate for the student surveys. In addition to methodological concerns, help-seeking at the experimental school was quite common even before the introduction of Yellow Ribbon, and a student suicide occurred at the control school in between the pre- and post-intervention surveys, thereby further limiting the comparability of the experimental and control schools.

OVERARCHING STUDY LIMITATIONS

The overarching limitation of the studies conducted by Stuart, Waalen et al. (2003) and Wyman, Brown et al. (2010) is that they did not assess whether the self-reported improvements in appraisals, attitudes and perceptions translate into improved prevention practice on behalf of the peer helpers, and increased help-seeking from adults on behalf of students in the wider school population. As with the evaluations of adult gatekeeper programmes, they also failed to assess referral rates or suicide-related outcomes for students in trained and untrained populations.

POTENTIAL BARRIERS TO IMPLEMENTATION

POTENTIAL FOR IATROGENIC EFFECTS

Despite widespread concern regarding the potential iatrogenic effects of peer-helping programmes, none of the studies formally addressed this issue. However, in their evaluation of Sources of Strength, Wyman, Brown et al. (2010) noted that the

peer leaders who benefitted the most from training were those with the least adaptive norms, the lowest school engagement, and the fewest connections to adults at baseline. Although their analysis was not designed to investigate which aspects of the programme were responsible for the effects observed, they suggest that the training of diverse adolescents together and the provision of ongoing adult mentoring minimises the potential for iatrogenic effects due to grouping at-risk adolescents. In contrast to these promising findings, Stuart, Waalen et al. (2003) noted that the more subtle signs of potential suicidal ideation and depression, such as anger and accusatory behaviour, tended to be missed by peer gatekeeper trainees. Without specific training in responding to such signs, the investigators were concerned that peer helpers might be inclined to distance themselves from such students, thereby potentially increasing the risk for suicide as the student becomes more isolated.

SUMMARY OF PEER-HELPING PROGRAMMES

Two types of peer-helping programme have been evaluated: peer gatekeeper training and peer leadership training. Whereas the former aims to enhance the identification and referral of at-risk students, the latter focuses on changing the norms and behaviours of students within a particular school environment. It is difficult to draw conclusions about the effectiveness of either type of training because of the limited number of studies in this area.

Findings from the one identified study of peer gatekeeper training suggest that this type of programming can improve participants' actual knowledge of suicide, self-reported skills in responding to a suicidal peer, and attitude towards suicide intervention. However, since behaviour was not assessed, it is not clear whether such improvements translate into improved prevention practices. Notwithstanding this limitation, survey responses alone suggested that trainees did not possess sufficient skill in responding to the more subtle signs of potential suicidal ideation and depression. There is concern that, without such a skill, trainees could heighten feelings of isolation in potentially suicidal peers. This suggests that peer gatekeeper training programmes are not yet sufficiently well developed to be considered as potential school-based suicide prevention strategies.

Only one of the two identified evaluations of peer leadership training was deemed to be methodologically sound. This study found that a programme enlisting students to conduct school-wide messaging activities has the potential to enhance staff-student communication by changing student norms related to help-seeking and referring potentially at-risk peers. The potential for iatrogenic effects due to bringing at-risk

students together was minimised by co-training students from diverse social cliques. Despite these promising findings, behaviour was not assessed. It is therefore unclear whether the reported improvements in perceived norms translate into increased help-seeking behaviour, improved prevention practice, or decreased suicidal behaviour. Thus, although this type of programming may ultimately prove to be helpful in overcoming the poor staff-student communication that has been proposed to act as a barrier to the effectiveness of adult gatekeeper training programmes, further research is required before conclusions about its effectiveness can be drawn.

3.6. CURRICULUM-BASED PROGRAMMES

GENERAL INFORMATION

Curriculum-based programmes are the most commonly applied and studied school-based suicide prevention approaches. Those that have been evaluated can be grouped into two main categories:

1. Suicide-specific education programmes.
2. Combined suicide-specific education and life skills training programmes.

While the suicide-specific education programmes are universal interventions, the combined suicide-specific education and life skills training programmes have been administered as either universal or selected interventions, with screening having been used to identify at-risk students for the latter. The majority of programmes have been evaluated as stand-alone programmes. However, some have been delivered as hybrid programmes, which means that it is not always possible to assess the independent effects of the curriculum component. The following sections review findings related to the effectiveness of both stand-alone and hybrid curriculum-based programmes in each of the categories outlined above.

UNIVERSAL SUICIDE-SPECIFIC EDUCATION PROGRAMMES

BACKGROUND

A number of universal suicide-specific education curricula were developed in the 1980s. These first-generation programmes addressed topics such as depression, stress, suicide dynamics and aetiology, warning signs, and help-seeking. However, according to Kalafat (2003), they lacked focus because it was unclear who their target audience was – at-risk students, suicidal students, or potential peer helpers – and

what their instructional objectives were – to change suicidal feelings, to help students understand suicide and depression, or to address intervention issues.

Evaluations of these programmes revealed discrepant effects (Spirito, Overholser et al. 1988, Overholser, Hemstreet et al. 1989), and sometimes no effects (Shaffer, Garland et al. 1991), on students' suicide-related knowledge, and their attitudes towards, and proclivity to intervene on behalf of, suicidal peers. Furthermore, concerns arose due to observed, though unintended, negative effects. For example, Overholser, Hemstreet et al. (1989) observed that reports of hopelessness and maladaptive coping increased among male, but not female, students following exposure to the programme. Similarly, following programme exposure, Shaffer, Garland et al. (1991) documented a higher proportion of male and African American students endorsing suicide as a "reasonable solution" for somebody who has a lot of problems. Shaffer, Vieland et al. (1990) also observed unwanted programme effects on students with histories of prior suicide attempts: compared to those without an attempt history, these students were significantly less likely to recommend that suicide prevention curricula be presented to other students, and significantly more likely to indicate that talking about suicide in the classroom makes some students more likely to attempt suicide.

These observed programmatic effects led to the development of programmes with more precise instructional objectives and clearly defined target audiences. Specifically, these second-generation programmes tend to target potential peer helpers, and typically have the goal of increasing the likelihood that students who come into contact with potentially suicidal peers can readily identify them, will know how to obtain adult help for them, and will be consistently inclined to take such action. Similar to peer-helping programmes, these programmes are empirically grounded in the findings that the majority of suicidal young people come to the attention of their peers rather than adults (Guo and Harstall 2002, Kalafat 2003). In contrast to first-generation programmes, and in response to concerns that portraying suicide as an outcome of stress might increase the likelihood of suicidal behaviours by normalising them (Shaffer, Garland et al. 1988, Ciffone 1993), a number of second-generation programmes emphasise the connections between mental illness and suicide.

EFFECTIVENESS OF SECOND-GENERATION PROGRAMMES

The effectiveness of several second-generation programmes has been evaluated in RCTs that, according to criteria outlined by Guo and Harstall (2002), Miller, Eckert et

al. (2009), and Cusimano and Sameem (2011), can be judged to have sufficient methodological quality for drawing meaningful conclusions.

The majority of these programmes were embedded within the context of health or social studies classes (Ciffone 1993, Kalafat and Elias 1994, Kalafat and Gagliano 1996, Aseltine and DeMartino 2004, Aseltine, James et al. 2007, Ciffone 2007). Despite variation in duration and frequency, most programmes were relatively brief, with total classroom time ranging from 1 hour (Ciffone 1993) to 3 days (Ciffone 2007). The main outcomes assessed were: knowledge about suicide (Kalafat and Elias 1994, Aseltine and DeMartino 2004, Portzky and van Heeringen 2006, Aseltine, James et al. 2007); attitudes towards suicide and/or help-seeking (Ciffone 1993, Kalafat and Elias 1994, Aseltine and DeMartino 2004, Portzky and van Heeringen 2006, Aseltine, James et al. 2007, Ciffone 2007); self-reported help-seeking behaviour (Kalafat and Gagliano 1996, Aseltine and DeMartino 2004, Aseltine, James et al. 2007); and self-reported suicide attempts (Aseltine and DeMartino 2004, Aseltine, James et al. 2007). Most studies assessed only short-term programme impacts, with the length of follow-up ranging from 2.5 weeks (Kalafat and Gagliano 1996) to 3 months (Aseltine and DeMartino 2004, Aseltine, James et al. 2007). All studies except that of Portzky and van Heeringen (2006), which was based in Belgium, were based on the US school system.

Overall, exposure to suicide-specific education curricula was associated with statistically significant improvements in students' knowledge about suicide in each of the studies that assessed this outcome (Kalafat and Elias 1994, Aseltine and DeMartino 2004, Portzky and van Heeringen 2006, Aseltine, James et al. 2007). Of the six studies that assessed attitudes to suicide, five were able to demonstrate statistically significant improvements (Ciffone 1993, Aseltine and DeMartino 2004, Portzky and van Heeringen 2006, Aseltine, James et al. 2007, Ciffone 2007), with Portzky and van Heeringen (2006) specifically noting improvements in experiential attitudes (those expected when attempting to cope with a suicidal friend) among male students, and in evaluative attitudes (those that refer to general appraisals and evaluations of suicidal persons) among female students. Although Kalafat and Elias (1994) and Cliffone (2007) documented statistically significant improvements in students' attitudes towards help-seeking, and Kalafat and Gagliano (1996) in students' self-evaluated proclivity to seek adult help when faced with a suicidal peer, the studies of Aseltine and DeMartino (2004) and Aseltine, James et al. (2007) found no effects on student's self-reported help-seeking behaviour, either for themselves or on behalf of a suicidal peer, in the three months following programme exposure.

The question of whether the observed improvements in knowledge and attitudes are practically important in terms of reducing student suicide-related outcomes was not addressed in any of these studies. However, Aseltine and DeMartino (2004) and Aseltine, James et al. (2007) evaluated the impact of Signs of Suicide (SOS), a hybrid programme that combines a suicide-specific education curriculum with a brief suicide screen, on self-reported student suicide attempts. In both studies, exposure to SOS was associated with significantly fewer self-reported suicide attempts, with exposed students being approximately 40% less likely than their non-exposed counterparts to report a suicide attempt in the 3 months following SOS exposure. This equated to a 3-month rate of suicide attempts in the SOS group of 3.0%, compared to 4.6% among controls. Since the effect of SOS on self-reported attempts was substantially reduced after controlling for the associated improvements in knowledge and attitudes (Aseltine and DeMartino 2004), the authors suggest that the effect of SOS on self-reported attempts can be explained by the students' improved understanding of, and attitudes towards, suicide. The major caveat to these findings is that pre-test measures of the outcomes assessed were not obtained, which leaves open the possibility that the intervention group had greater knowledge, more favourable attitudes and lower self-reported suicide attempts to begin with.

EFFECTIVENESS FOR ETHNIC MINORITY STUDENTS

Although demographically diverse student samples were used in three of the curriculum evaluations (Aseltine and DeMartino 2004, Aseltine, James et al. 2007, Ciffone 2007), only that of Aseltine, James et al. (2007) examined whether programme impact varied among students with different demographic profiles. Their analysis revealed consistent programmatic effects among students of different ages and ethnicities, and for both male and female students. Although these findings point to the potential cross-cultural effectiveness of the US-based SOS programme, the ethnic composition and cultural norms of the New Zealand student population are different from those of the US, thus highlighting the need for rigorous local research on the effectiveness, feasibility and acceptability of this approach.

POTENTIAL BARRIERS TO IMPLEMENTATION

Potential for iatrogenic effects

Direct effects

A number studies have addressed the potential harm that the suicide-specific education curriculum may have had on the experimental students:

- Kalafat and Elias (1994) noted that students in both the control and experimental groups disagreed with the statement that "talking about suicide in class makes some kids more likely to kill themselves", and agreed with the statement that "talking about suicide in class makes it easier for some kids to ask for help". However, 3% of students in the experimental group found the classes upsetting[11].

- Portzky and van Heeringen (2006) assessed potential adverse effects by examining programme impact on levels of student hopelessness. No effect on the mean level of hopelessness for the total group of exposed students was found. Furthermore, detailed analyses for students with high levels of hopelessness revealed neither positive nor adverse effects.

- As outlined above, Aseltine and DeMartino (2004) and Aseltine, James et al. (2007) observed significantly lower rates of self-reported suicide attempts among programme-exposed versus unexposed students.

While it is impossible to draw definite conclusions from these findings about the potential for suicide-specific education curricula to induce harm, they at least appear to be more promising and less alarming than those obtained from evaluations of the first-generation programmes.

Indirect effects

In addition to directly harmful effects, it is important to consider whether suicide-specific education curricula have the potential to induce harm in less immediately obvious ways. In their discursive analysis of how a suicide-specific education curriculum in a Canadian high school was delivered and received, White and Morris (2010) noted that most educators and students endorsed a medicalised understanding of suicide that framed suicide as a personal event that was most often linked to mental illness. This is not surprising given the dominant nature of this discourse in the field of suicide prevention (Wexler and Gone 2012), and the observation that a number of programme evaluations explicitly state that the curriculum promotes the concept that suicide is directly related to mental illness (Ciffone 1993, Aseltine and DeMartino 2004, Aseltine, James et al. 2007, Ciffone 2007). While such an understanding may be of benefit to some students, White and Morris (2010) highlight its potential for inadvertently deflecting attention away from socio-political factors and structural arrangements that are likely to fuel and/or

[11] No explanation as to why these students found the classes upsetting was given.

exacerbate hopelessness and suicidal despair among some young people. The inherent risk in such deflection is that the development of potentially beneficial conversations and interventions that acknowledge and address the social and political determinants of mental health may be overlooked[12].

Indirect effects and indigenous students

The potential for existing suicide-specific education curricula to deflect attention away from the role of socio-political factors and structural arrangements in the aetiology of youth suicide may be of particular salience for Māori students given indigenous understandings of suicide as a phenomenon related to culture loss, historical trauma and social suffering (Wexler and Gone 2012). In addition to the harm potentially borne of students not understanding the wider context of suicide, Wexler (2009) notes that the pervasive sense of having no future, a sentiment that can be strongly linked to suicide, observed among indigenous young people in Northwest Alaska can be understood in terms of their tendency to misattribute their social suffering to personal and collective failings. This suggests that the potential for suicide-specific education curricula that frame suicide as an expression of mental illness to induce harm could be reduced by revising their content to include material on the broader contextual factors implicated in the aetiology of mental illness.

Timing and scheduling

In their study of the implementation and institutionalisation of a school-based youth suicide programme that included a suicide-specific education curriculum, Kalafat and Ryerson (1999) identified timing and scheduling as a potential barrier to implementation.

POTENTIAL ENABLERS TO IMPLEMENTATION

Programme design

Curriculum-based programmes are generally well suited to a school's resources and culture because they have an educational rather than a clinical focus, the curricula can be designed to be delivered by teachers rather than external consultants, and they fit within the existing curriculum structure (Kalafat 2003).

[12] For promising examples of such conversations and interventions, see: Wexler 2006; Morisillo and Prilleltensky 2007; Wexler, 2009; White and Morris 2010; and Wexler and Gone 2012.

Contextual variables

Kalafat and Ryerson (1999) identified supportive administration, committed staff, and the ability to assume ownership of the programme through being free to make changes that made the content more relevant to the particular school setting while retaining the central focus on identification and help-seeking.

COMBINED SUICIDE-SPECIFIC EDUCATION AND LIFE SKILLS TRAINING PROGRAMMES

BACKGROUND

In addition to raising awareness about suicide and teaching students to recognise the signs and symptoms of suicide, a number of programmes also seek to reduce the cognitive and behavioural correlates of suicide by promoting the development of distress-coping and problem-solving skills. These programmes are therefore not only targeted at potential peer helpers, but also at at-risk students. They tend to be of a longer duration than standalone suicide-specific education programmes and to be delivered by school personnel (teachers, counsellors, nurses, psychologists) who have undergone programme-specific training. The combined suicide-specific education and life skills training programmes that have been evaluated to date have been administered as either universal or selected interventions.

EFFECTIVENESS OF UNIVERSAL PROGRAMMES

A comprehensive US-based programme is the universal suicide-specific education and life skills training offered by Dade County Public Schools. In this programme, which was evaluated between the 1989-1990 and 1993-1994 school years (Zenere and Lazarus 1997), district-wide training in the development of problem-solving skills, positive coping behaviours and self-esteem enhancement begins at the primary school level and continues throughout students' school experience. A one-semester curriculum specifically addressing the topic of suicidal behaviour is delivered in the tenth grade. In addition to these curriculum-based interventions, the programme also provides gatekeeper training for adult members of the school community, and incorporates not only prevention, but also intervention and postvention measures. Historical records of medically-confirmed student suicide completions revealed a substantial reduction in the average annual number of student suicides at the time the programme was implemented, with an average of 4.6 completions per year during the 5-year programme evaluation period compared to 12.9 per year in the 8 years before programme inception. Since the student population increased by

approximately 15% over the evaluation period, these numbers reflect a bona fide decrease in the suicide rate. Without comparative data from a reasonably well-matched control school district, these trends cannot be definitively attributed to implementation of the programme[13]. Nevertheless, the trends are encouraging and suggest the potential utility of programming that includes universal suicide-specific education, life skills and gatekeeper training, and appropriate intervention and postvention measures.

Two other extended life skills programmes, a cognitive-oriented and didactic programme (Klingman and Hochdorf 1993), and an emotion-oriented and group-centred programme (Orbach and Bar-Joseph 1993), were presented in Israeli high schools during twelve fifty-minute and seven two-hour sessions, respectively. Evaluations based on randomised controlled study designs revealed statistically significant reductions in self-reported suicide risk among curriculum-exposed students, with Klingman and Hochdorf (1993) noting greater risk reduction among males, and Orbach and Bar-Joseph (1993) among females. Measures indicative of coping potential also revealed a greater awareness of distress-coping skills among experimental students following programme exposure (Klingman and Hochdorf 1993), and an improved self-reported coping ability among curriculum-exposed students in two of the six participating high schools (Orbach and Bar-Joseph 1993). The programme evaluated by Klingman and Hochdorf (1993) also included a suicide-specific education component, with comparisons of pre- and post-test scores for curriculum-exposed students revealing significant gains in knowledge of youth suicide and help resources. Despite the promise of such findings, it is important to note that the improvements in coping potential and knowledge noted by Klingman and Hochdorf (1993) cannot necessarily be attributed to the programme because these outcomes were only assessed in curriculum-exposed students. A further limitation of both studies is that self-reported coping potential rather than actual behaviour was measured.

The briefest suicide-specific education curriculum with a life skills training component, Surviving the Teens®, was presented in US-based high schools during four fifty-minute classroom sessions (King, Strunk et al. 2011). A preliminary 3-month follow-up study comparing students before and after curriculum exposure revealed that students were significantly less likely at 3-month follow-up than at pre-

[13] Please note that the youth suicide rate was not falling nationally at this time. See http://www.suicide.org/suicide-statistics.html#death-rates for the number of suicide deaths per 100,000 population among persons aged 5-24 in 1990 and 1995.

test to report currently considering suicide, having made a suicidal plan in the past 3 months, or to have attempted suicide in the past 3 months. The study also found that students' behavioural intentions towards help-seeking and perceived self-efficacy in identifying suicidal warning signs, appropriately intervening, and using positive coping skills to handle problems significantly increased from pre-test to post-test and were maintained at 3-month follow-up. Although promising, these results must be interpreted with caution due to the absence of a control group, a loss of approximately 60% of the initial sample to follow-up, the potential for the students to have offered socially desirable responses at post-test and 3-month follow-up due to having established a positive rapport with the sole programme co-ordinator, and the self-reported nature of the outcomes assessed.

EFFECTIVENESS OF UNIVERSAL PROGRAMMES FOR INDIGENOUS STUDENTS

One of the most comprehensive universal suicide-specific education and life skills training programmes evaluated to date, the Zuni Life Skills Development Curriculum, was presented approximately three times per week over 30 weeks during the school year (LaFromboise and Howard-Pitney 1995). This programme is unique among school-based suicide prevention interventions in that it was delivered in a tribal high school, and was developed in collaboration with an American Indian community at the request of tribal leaders (LaFromboise and Howard-Pitney 1994). It is therefore an example of an intervention that was specifically designed to be consistent with the values and strengths of a particular indigenous community.

Using a non-randomised experimental design in which students in the intervention and control groups were individually matched according to their pre-test scores on clinically important measures that were different between the two groups, LaFromboise and Howard-Pitney (1995) found lower levels of self-reported suicide vulnerability and hopelessness among curriculum-exposed students. Behavioural observations also revealed improved suicide-intervention and problem-solving skills among these students. Although the reductions in suicide vulnerability and the improvements in problem-solving skills did not quite reach statistical significance, the authors highlighted the increased potential for the study to erroneously find no intervention effect because of the reduction in statistical power that was generated by the need to create a matched paired sample for analysis.

EFFECTIVENESS OF SELECTED PROGRAMMES

Two US-based evaluations of curricula combining suicide-specific education and life skills training specifically for students deemed to be at-risk for suicide were identified. Eggert, Thompson et al. (1995) used a randomised controlled study design to evaluate the effects of Reconnecting Youth, a peer group approach to building life skills, on the self-reported suicidal behaviour and suicide-related risk and protective factors of students in grades 9-12 (age 14-18) who were assessed as being at at-risk for both school drop-out and suicide. The programme was offered to these students as a high school elective and was broadly aimed at challenging suicide-related attitudes and behaviour, promoting life-enhancing alternatives, and facilitating social connection. The intervention was intensive, with participating students attending a daily, one-hour Personal Growth Class (PGC) for either one or two semesters.

A total of three groups were compared:

1. A control group who received a comprehensive suicide risk assessment (35 students).

2. An intervention group who received a comprehensive suicide risk assessment plus a one-semester PGC (36 students).

3. An intervention group who received a comprehensive suicide risk assessment plus a two-semester PGC (34 students).

Results for self-reported suicidal behaviour, depression, hopelessness and stress revealed significant decreases over a 10-month follow-up period for all three groups, but no between-group differences. Similarly, while the patterns of change did not differ among them, all three groups reported significant increases in self-esteem. The only change that was observed solely in the intervention groups was a significant increase in perceived personal control.

Since all groups evidenced improvements in suicide-related behaviours, risk factors and protective factors over time, the improvements cannot be attributed to participation in the PGC. However, since participants' involvement in alternative treatments was found to have no effect on depression, self-esteem and suicide-related behaviours, and the suicide risk assessment activated and manipulated social support, the investigators favoured the interpretation that both control and experimental interventions were effective in terms of their capacity to bring about favourable outcomes. They also highlighted that perceived personal control, the outcome in which experimental programme participants evidenced more gains than

their counterparts in the assessment-only group, is related to problem-solving confidence, which may moderate the impact of various risk factors on suicidality (Johnson, Wood et al. 2011).

Given the suggestion that a support-activating suicide risk assessment is just as effective as a more intensive skills-training curriculum in bringing about favourable suicide-related outcomes, the investigators conducted a further RCT to evaluate the effectiveness of two interventions that were adapted from those used in the previous study (Thompson, Eggert et al. 2001). The first was Counselors CARE (C-CARE), a comprehensive, 2-hour assessment of risk and protective factors that was followed by a brief intervention designed to enhance a student's personal resources and social network connections. The second was Coping and Support Training (CAST), a 12-session peer-group, life skills training programme that was added to C-CARE.

An ethnically diverse sample of students who were identified as being at-risk for both school drop-out and suicide was randomly assigned to one of three conditions:

1. C-CARE.
2. CAST.
3. Usual care, which consisted of a 15-30 minute assessment and a social connections intervention.

Self-report measures were used to collect data on a variety of suicide-related risk and protective factors. All three groups evidenced reductions in some of the suicide-related risk factors immediately following the intervention and at the 9-month post-baseline follow-up. Significant between-group differences in rates of change were observed for attitude towards suicide, suicidal ideation, depression and hopelessness, with C-CARE and CAST being associated with faster rates of decline than usual care. The C-CARE and CAST interventions were also more effective than usual care in sustaining reductions in suicidal ideation, depression, and hopelessness across time, with experimental programme participants reporting significantly lower scores for each of these variables than their control counterparts at the 10-week and/or 9-month follow-up. Although similar results were obtained for anxiety and anger in females, no significant group differences in these variables were observed at either follow-up for males, with neither C-CARE nor CAST influencing their overall rate of decline. Thus, C-CARE and CAST appeared to contribute to sustained decreases in suicidal ideation, depression and hopelessness in both males and females, and in anxiety and anger only in females.

Promising data were also obtained in relation to gains in protective factors. When compared to usual care conditions, CAST, but not C-CARE, was associated with significantly greater increases in problem-solving coping and personal control at programme exit, with continued gains also evident at the 9-month post-baseline follow-up. Thus, while both C-CARE and CAST appear to be equally effective in reducing certain suicide-related risk factors, CAST appears to be uniquely effective in enhancing protective factors that may play a role in buffering at-risk individuals from suicidality. Since efforts were made to rule out the possibility that the observed effects were due to regression to the mean (a statistical phenomenon that comes into play when study participants are samples of individuals whose initial scores on the outcome variables of interest are well above or below average), it is likely that the data reflect a true intervention effect rather than statistical artefact. Although the study is limited by its reliance on self-reported data, its findings suggest that C-CARE and CAST hold promise as interventions for reducing suicide risk among students who are also at-risk for high school drop-out.

SUMMARY OF CURRICULUM-BASED PROGRAMMES

The curriculum-based programmes that have been evaluated so far can be grouped into two main categories:

1. Universal suicide-specific education programmes.
2. Universal or selected programmes that combine suicide-specific education with life skills training.

Universal suicide-specific education programmes have been researched for over two decades. Following the observation of some unintended adverse effects in evaluations of first-generation programmes, the aim and content of these programmes were revised, with second-generation programmes typically having the goal of increasing the likelihood that students who come into contact with potentially suicidal peers can more readily identify them, will know how to obtain adult help for them, and will be consistently inclined to take such action.

RCT-based evaluations suggest that exposure to these relatively brief curricula is associated with improvements in students' self-reported knowledge about suicide, attitudes towards suicide and help-seeking, and behavioural intentions regarding seeking adult help on behalf of a suicidal peer. However, it is presently unclear whether these improvements translate into improved help-seeking and/or suicidal behaviour. Two studies found no effects on self-reported help-seeking behaviour in the three months following programme exposure. Although the same two studies

reported statistically significant reductions in self-reported suicide attempts among programme-exposed students, the design of these studies was not sufficiently rigorous to rule out the possibility that these students exhibited lower levels of such behaviour to begin with.

Additional uncertainties relate to the potential for universal suicide-specific education programmes to induce harm. Although the potential for second-generation programmes to directly induce adverse effects appears to be less than that of their first-generation counterparts, their tendency to frame suicide as a personal event related to mental illness may indirectly induce harm by deflecting attention away from socio-political factors and structural arrangements that are likely to exacerbate hopelessness and despair among some young people. In addition to diverting resources away from the development of potentially beneficial social interventions, such framing has been linked to the tendency of some indigenous young people to explain their suffering in terms of personal and collective failings. The content of universal suicide-specific education programmes may therefore need to be revised in order to ensure that it does not undermine the personal and cultural identity of vulnerable students.

Curriculum-based programmes that combine suicide-specific education with life skills training may represent a more promising approach. In addition to raising awareness about the signs and symptoms of suicide, these programmes also seek to reduce the cognitive and behavioural correlates of suicide by promoting the development of distress-coping and problem-solving skills. They therefore target both potential peer helpers and at-risk students, and tend to be of a longer duration than programmes that are solely focused on suicide-specific education.

Evaluations of universal applications of such programmes suggest that programme exposure is associated with improvements in students' self-reported suicide risk, self-reported coping potential and perceived self-efficacy regarding suicide intervention. Behavioural observations made in an evaluation of one particular programme suggest that these improvements may well translate into improved problem-solving and suicide-intervention skills. Since this particular programme was developed in collaboration with an indigenous community and delivered in a tribal high school, skills training programmes that are designed to be consistent with Māori values and aspirations may be a promising approach for Māori students. The addition of adult gatekeeper training and appropriate postvention measures to universal suicide-specific education and life skills training may be a particularly promising approach for all students as reductions in student suicide completions

were observed following the implementation of a US-based programme combining these elements.

Selected applications of programmes combining suicide-specific education and life skills training may also hold promise for at-risk students. Evaluations of a programme targeting students at-risk for both school drop-out and suicide suggest that programme exposure is associated with improvements in a number of self-reported suicide-related risk and protective factors. Although the results also suggest that participation in a support-activating suicide risk assessment conducted at the beginning of the programme may have been sufficient to bring about the observed reductions in suicide-related risk factors, the improvements in self-reported protective factors were only evident among students participating in the full programme. Since the protective factors affected may buffer at-risk individuals from suicidality, full programme participation is likely to have a greater impact in terms of mitigating overall suicide risk.

Overall, the studies reviewed suggest that universal and selected applications of programmes combining suicide-specific education with life skills training hold greater promise as effective school-based suicide prevention strategies than those focusing solely on suicide-specific education. However, a current major barrier to implementing these programmes is the uncertainty regarding the safety of the content of existing suicide-specific education curricula. Research suggests that this content may need to be revised in order to ensure that it does not undermine students' self-concept or cultural identity. Given the uncertainty regarding the safety of the suicide-specific element, schools may be better served by one or more of the life skills training programmes reviewed under general programmes below.

3.7. INDIVIDUAL-LEVEL PSYCHOTHERAPEUTIC INTERVENTIONS

BACKGROUND

A range of psychotherapeutic interventions have been shown to reduce suicide-related symptoms and behaviours, including hopelessness, anxiety, depression, suicidal ideation, and suicide attempts, in adult populations. These therapies include cognitive behavioural therapy (Brown, Ten Have et al. 2005); interpersonal therapy (Guthrie, Kapur et al. 2001); dialectical behaviour therapy (Linehan, Comtois et al. 2006, Hawton, Townsend et al. 2009); and psychoanalytically-oriented partial hospitalisation (Bateman and Fonagy 2001). While some of these therapies have been adapted for young people (March, Silva et al. 2007, Miller, Rathus et al. 2007, Wenzel,

Brown et al. 2009), very few have been delivered at the individual level in school-based settings.

EFFECTIVENESS OF INDIVIDUAL-LEVEL PSYCHOTHERAPEUTIC INTERVENTIONS

A single evaluation of an individual school-based psychotherapeutic intervention was identified. Tang, Jou et al. (2009) examined the effects of intensive interpersonal psychotherapy for depressed adolescents with suicidal risk (IPT-A-IN) on the severity of self-reported depression, suicidal ideation, anxiety and hopelessness among a sub-set of a random sample of students at a Taiwanese high school who screened positive for a number of suicide-related behaviours and risk factors.

A total of 73 students were randomised to twice weekly IPT-A-IN for six consecutive weeks or usual care, which consisted of psycho-education and irregular supportive counselling one or two times per week. Results indicated lower post-intervention severities of depression, suicidal ideation, anxiety and hopelessness among IPT-A-IN versus usual care participants. Although such findings suggest IPT-A-IN as a promising school-based psychotherapeutic intervention, their generalisability beyond this limited subset of Taiwanese high school students remains uncertain. In addition to the need for further studies in other settings, more research is needed to determine whether the observed intervention effects are sustained over time.

SUMMARY OF INDIVIDUAL-LEVEL PSYCHOTHERAPEUTIC INTERVENTIONS

Only one evaluation of a school-based psychotherapeutic programme was identified. Although this study suggested that a programme of individualised interpersonal psychotherapy holds promise as an intervention for reducing suicide risk among depressed adolescents, further research is required to determine the generalisability of the findings and the longevity of the observed effects.

3.8. CONCLUSIONS FOR CATEGORICAL PROGRAMMES

LIMITATIONS

The categorical programmes reviewed in this section have been evaluated using a variety of different study designs and, due to the difficulties in measuring the statistically rare outcome of student suicide completions, most have based their conclusions regarding programme effectiveness on assessments of proxy indicators. Since the study designs and proxy indicators used are so varied, it is difficult to

make direct comparisons between the different types of programme. Despite these limitations, some useful conclusions about each individual type of programme can be drawn[14]. These conclusions are outlined in the following sections and summarised in Table A1.

GATEKEEPER TRAINING PROGRAMMES FOR ADULTS

The most promising type of programme to emerge from this analysis is gatekeeper training for adult members of the school community. The amalgamated evidence from a number of studies suggests that this kind of training is effective in terms of increasing participants' confidence in their own abilities to identify and refer at-risk students, and improving their actual knowledge of warning signs, risk factors, and recommended intervention behaviours.

Although few studies have assessed the effect of training on actual intervention behaviours, there is some evidence to suggest that the incorporation of role-play practice into standard training protocols can enhance the ability of a larger-than-usual number of school staff to communicate with distressed students. One study comparing the impact of gatekeeper training on the intervention behaviour of school personnel and parents suggests that novel referral processes may need to be established in order to enable parents to effectively refer distressed students for services.

The major limitation of an approach solely relying on gatekeeper training is that there is no guarantee that the students identified will access or benefit from the services to which they are referred. This suggests that gatekeeper training for adult members of the school community should be delivered as merely one component of

[14] While these conclusions are based on currently available evidence, suicide prevention is an active area of research and conclusions may be modified as new findings emerge. An RCT that was not included in this review but is worth keeping track of is part of the Saving and Empowering Young Lives in Europe (SEYLE) project. This large, multi-centre RCT aims to compare the efficacy, cost-effectiveness and cultural adaptability of three school-based suicide prevention strategies: QPR-based gatekeeper training for school personnel; screening for at-risk adolescents by mental health professionals; and mental health awareness training for students. Although the trial's methodology and participant characteristics have been published (Wasserman, Carli et al. 2010, Wasserman, Hoven et al. 2012), the only outcome data to be reported so far pertain to the effectiveness of the mental health awareness training for students (Carli, Wasserman et al. 2013). Since more thoroughly researched mental health promotion programmes are reviewed in the next chapter, and only training coordinators perceptions of programme impact were explored, this particular programme has not been included in this review. However, since the overall SEYLE RCT promises to be a rigorous evaluation, it is worth keeping up to date with emerging findings.

a broader district-wide suicide prevention programme that includes interventions aimed at overcoming barriers to help-seeking and improving service delivery. The documented preferences for informal or traditional forms of support among many ethnic minority and indigenous individuals also highlights the importance of investigating the degree to which referrals to these kinds of support are effective in reducing suicide risk among ethnic minority and indigenous students.

The observation of substantial reductions in suicide and suicidal behaviour in one school and three non-school populations following the implementation of multifaceted suicide prevention programmes that included gatekeeper training and interventions aimed at overcoming some of the barriers to help-seeking suggests that such an approach is more likely to meet with success.

CURRICULUM-BASED PROGRAMMES

Curriculum-based programmes that combine suicide-specific education with life skills training also emerged as a promising approach. A number of evaluations of either universal or selected applications of such programmes suggest that programme exposure is associated with improvements in students' self-reported suicide risk, self-reported coping potential and perceived self-efficacy regarding suicide intervention on behalf of a peer. Although few studies assessed actual behaviour, there is some evidence to suggest that such improvements translate into improved problem-solving and suicide-intervention skills. The addition of gatekeeper training for adult members of the school community and appropriate postvention measures to suicide-specific education and life skills training programmes may be a particularly promising approach as reductions in student suicide completions were observed following the implementation of a universal US-based programme combining these elements.

Despite the encouraging results from evaluations of programmes combining suicide-specific education with life skills training, there are concerns about the safety of the content of existing suicide-specific education curricula. Thus, the wisest approach for schools at present would be to refrain from delivering standalone suicide-specific education curricula and to embed life skills training in general mental health promotion rather than specific suicide prevention activities.

SUICIDE SCREENING PROGRAMMES

The evidence suggests that it would be best for schools to refrain from implementing suicide screening programmes at the present time. Although such programmes appear to be capable of identifying a sub-group of potentially at-risk students who

may not otherwise arouse the concern of school personnel, student participation rates in screening programmes are typically modest and most screening instruments have not yet been validated with ethnic minority students. This suggests that screening programmes may fail to identify a considerable number of those at-risk. They may also generate an unmanageable burden of false positives and meet with considerable resistance from the school professionals most likely to be charged with their implementation. In conjunction with unresolved concerns about the potential for screening to cause undue distress to students, these considerations suggest that screening programmes need to undergo further research and development before any decisions regarding their implementation in New Zealand can be made[15].

INDIVIDUAL-LEVEL PSYCHOTHERAPEUTIC INTERVENTIONS AND PEER-HELPING PROGRAMMES

There is currently insufficient evidence to support the recommendation of individual school-based psychotherapeutic interventions and there are concerns about the safety of peer-helping programmes that are based on a gatekeeper model. Although peer-helping programmes that are based on a particular leadership model have the potential to improve the poor staff-student communication that has been proposed to act as a barrier to the effectiveness of adult gatekeeper training programmes, there is still not enough evidence to support their recommendation.

[15] Although the evidence does not support the implementation of suicide screening programmes as a routine school-based strategy for suicide prevention, screening high-risk individuals may form part of an effective postvention strategy in the specific case of suicide clusters (Cox, Robinson et al. 2012).

Table A1: Characteristics of categorical suicide prevention programmes

Programme	Description	Evidence for effectiveness and impact of potential moderators on effectiveness	Strengths	Limitations	Issues for ethnic minority and indigenous students
Gatekeeper training programmes for adults	Training adult members of the school community as gatekeepers in order to enhance identification and referral of suicidal students.	Improve participants' knowledge of warning signs, risk factors and recommended intervention behaviours. Improve participants' appraisals of their ability to identify and refer at-risk students. Increase use of suicide intervention behaviours among staff members already communicating with students about suicide. Inclusion of role-play practice may enhance ability of a broader group of staff to communicate with distressed students. School personnel demonstrate greater ability to provide effective referrals for suicidal students than parents. Gatekeeper skills may atrophy over time in the absence of refresher-update training.	Can be adapted to address specific local issues. Has the potential to strengthen local communities by making use of existing relationships to provide help to those at risk. More acceptable than suicide screening programmes. Training adults minimises potential for inducing iatrogenic effects among students.	Overcrowded school schedules and the social and behavioural norms governing typical staff-student interactions may impede open staff-student communication. Novel referral processes need to be established if parents are to be able to refer distressed students to services. Success contingent upon availability of mental health services with proven ability to reduce youth suicide risk and students being willing and able to seek support from these services. Institutionalisation will require strong administrative support, committed staff, clear lines of communication, established protocols for responding to at-risk students, and a capacity to maintain ongoing linkages with community-based services.	Need to ensure that the criteria used to identify at-risk students are valid for ethnic minority students. Need to address the cultural barriers that may prevent some students from seeking follow-up support. May need to extend school-based gatekeeper training to trusted and respected members of ethnic minority and indigenous communities.

Table A1: Characteristics of categorical suicide prevention programmes

Programme	Description	Evidence for effectiveness and impact of potential moderators on effectiveness	Strengths	Limitations	Issues for ethnic minority and indigenous students
Suicide screening programmes	Direct screening of school populations in order to enhance identification and referral of suicidal students.	Identify a sub-group of potentially at-risk students who may not otherwise arouse the concern of school personnel. Enhance referral of potentially at-risk students to mental health services. Enhance likelihood that identified students will seek support from mental health services.	Adolescents may be more inclined to disclose sensitive information in a self-administered instrument than in a face-to-face encounter.	Modest student participation rates in suicide screening programmes. High rates of false positives may place an unmanageable burden on school personnel and local mental health services. Less acceptable than other forms of school-based suicide prevention. Uncertainty regarding the potential for iatrogenic effects. Not yet clear when and how often suicide screening instruments are best administered. Success contingent upon availability of mental health services with proven ability to reduce youth suicide risk and students being willing and able to seek support from these services. Most of the research has been conducted on US school populations.	Most suicide screening instruments have not yet been validated for ethnic minority students. Need to address the cultural barriers that may prevent some students from seeking follow-up support.
Peer gatekeeper training	Training students as gatekeepers in order to enhance identification and referral of suicidal students.	Improves participants' knowledge of suicide, self-reported skills in responding to a suicidal peer, and attitude towards suicide intervention.	Research suggests that peers are much more likely than adults to be aware of suicidal behaviour in their friends.	Limited research. Potential for iatrogenic effects has been understudied.	Need to ensure that the criteria used to identify at-risk students are valid for ethnic minority students. Need to address the cultural barriers that may prevent students seeking follow-up support.
Peer leadership training	Training students to conduct school-wide messaging activities in order to change student norms and behaviours related to coping and seeking help from adults in school.	Enhances student perceptions of adult support for suicidal peers and the acceptability of seeking help, and increases the likelihood that peer leaders will refer at-risk students to an adult.	May minimise the potential for iatrogenic effects due to bring at-risk students together by co-training students from diverse social cliques.	Limited research.	None identified.

Table A1: Characteristics of categorical suicide prevention programmes

Programme	Description	Evidence for effectiveness and impact of potential moderators on effectiveness	Strengths	Limitations	Issues for ethnic minority and indigenous students
Suicide-specific education programmes	Training students to recognise signs of suicide in themselves and others in order to increase the likelihood that students will seek appropriate adult help when faced with such problems.	Improve students' self-reported knowledge about suicide, attitudes towards suicide and help-seeking, and behavioural intentions regarding seeking adult help on behalf of a suicidal peer.	Fit within the existing curriculum structure. Designed to be delivered by school personnel rather than external consultants. Have an educational rather than a clinical focus. More acceptable than suicide screening programmes.	Research has so far revealed no effect on actual help-seeking behaviour. Programmes that frame suicide solely as a personal event linked to mental illness have the potential to induce indirect iatrogenic effects by deflecting attention away from the development of interventions that address the social determinants of mental health.	The framing of suicide as personal event linked to mental illness appears to be related to the tendency of some indigenous young people to explain their suffering in terms of personal and collective failings.
Combined suicide-specific education and life skills training programmes.	As above, plus training students to use a variety of distress-coping and problem-solving skills in order to reduce the cognitive and behavioural correlates of suicide.	Improve students' self-reported suicide risk, self-reported coping potential, perceived self-efficacy regarding suicide intervention, other-reported problem-solving and suicide-intervention skills.	As above.	As above for the suicide-specific education component.	Life skills training programmes can incorporate the values and strengths of particular communities if a collaborative approach to programme development is taken.
Individual school-based psychotherapeutic interventions	Delivering individual sessions of interpersonal psychotherapy to depressed students at-risk for suicide.	Reduces students' severity of depression, suicidal ideation, anxiety and hopelessness.	Interpersonal psychotherapy has been shown to reduce suicide-related symptoms and behaviours in adult populations.	Limited research.	Need to tailor mainstream psychotherapies to ensure appropriateness for ethnic minority and indigenous students.

4. GENERAL PROGRAMMES

4.1. PROTECTIVE FACTORS AND THE CONCEPT OF RESILIENCE

General programmes seek to promote the psychological wellbeing of students by enhancing a set of personal and/or environmental protective factors. A protective factor that is receiving increasing amounts of attention in the field of suicidology is resilience. Resilience has been defined in multiple ways. In educational settings, resilience has been defined not only as a characteristic of individual children (child-centred definition), but also as a characteristic of the caretaking environments within which these children develop (contextual definition). Each of these definitions has important implications for how schools envisage their role in building resilience (Brehm and Doll 2008).

The child-centred definition construes resilience as a set of qualities, skills and dispositions that foster a process of successful adaptation and transformation in the face of risk and adversity. Understood in this way, the role of the school is to provide mental health programmes that help children to develop the individual competencies that will make it possible for them to cope, perhaps even thrive, in challenging circumstances. In contrast, the contextual definition construes resilience as a systemic phenomenon by proposing an interaction of individual child attributes with aspects of the caretaking environment in the generation of adaptive responses. Understood in this way, the role of the school is not limited to providing competence-building programmes, but extends to modifying the whole school context, including the school's ethos, organisation, management structures, physical environment and teaching practices.

While endorsing a contextual definition of resilience, this review will focus on curriculum-based programmes that have been designed to build some of the individual-level competencies that constitute resilience, regardless of whether the curricula were delivered as stand-alone programmes, or as one aspect of a broader, multi-component or whole-school approach. This relatively narrow focus has been adopted not to suggest that such programmes should be privileged over other approaches to fostering resilience in schools, but because of the time constraints governing the review.

For information on whole-school approaches to building resilience, please see: *School-Wide Approaches for Fostering Resiliency* (Henderson, Benard et al. 2000); *Building Resilience in Schools: A Focus on Population-Based Prevention* (Brehm and Doll 2008); *MindMatters, a Whole-School Approach to Promoting Mental Health and Wellbeing*

(Wyn, Cahill et al. 2000); and *School-Based Programs to Reduce Bullying and Victimisation* (Farrington and Ttofi 2010).

4.2. DEFINING RESILIENCE AT THE LEVEL OF THE INDIVIDUAL CHILD

Resilience at the level of the individual child is broadly attributed to social-emotional competence. According to the Collaborative for Academic, Social and Emotional Learning (CASEL; 2005), social-emotional competence is the outcome of having mastered five core skills:

1. The ability to accurately assess one's feelings, interests, values and strengths (self-awareness skills).

2. The ability to regulate one's emotions to handle stress, control impulses and persevere in overcoming obstacles (self-management skills).

3. The ability to take the perspective of and empathise with others, and to recognise and use family, school and community resources (social awareness skills).

4. The ability to establish and maintain healthy relationships, resist inappropriate social pressure and seek help when needed (relationship skills).

5. The ability to make decisions based on consideration of ethical standards, safety concerns, appropriate social norms, respect for others and likely consequences of various actions (responsible decision-making skills).

4.3. RESILIENCE AND SUICIDALITY

Since resilience in the context of suicidality is an emerging field of research, the precise relevance of the skills articulated by CASEL to youth suicide prevention is presently unclear. A recent review of studies examining psychological factors that moderate the impact of various risk factors on suicidality suggests the existence of a broad array of factors that confer resilience to suicidality (Johnson, Wood et al. 2011). The review found strong evidence for a protective role of positivity of attributional style (the tendency to understand negative events as being due to causes that are external, likely to change, and specific) and agency (the sense that one is in control and is the initiator of one's own actions), and moderate evidence for a protective role of problem-solving ability, problem-solving confidence, high self-esteem, general social support, family support, and perceived attachment to caregivers. Since the aforementioned CASEL skills are relevant to the development of some of these

factors, teaching social-emotional competence might be expected to afford some degree of protection against the development of suicidal behaviours.

4.4. RESILIENCE-BUIDING PROGRAMMES

A number of curricula have been developed to promote social-emotional competence in school-aged children. These programmes vary in the age and risk profile of their target groups, programme goals, content, number and length of sessions, deviation from the scripted manual, and the presence of booster or maintenance sessions. All are grounded in the finding that social-emotional competence can be learned. Since the number of existing curricula is far too numerous for this review to be comprehensive, only a selection of the more widely researched or Australasia-based social and emotional learning programmes are included. Please visit http://casel.org/ for a comprehensive list of curricula.

4.4.1. OVERARCHING ISSUES FOR ETHNIC MINORITY AND INDIGENOUS STUDENTS

As with other forms of psychosocial intervention, there is a need to ensure that resilience-building programmes are both empirically supported and culturally sensitive. To this end, there are a number of issues that readers might like to bear in mind when considering the likely effectiveness and appropriateness of the programmes reviewed in the following sections for ethnic minority students. These issues have been outlined by Hall (2001) and Lopez, Edwards et al. (2002) and are as follows:

1. Although most programme evaluations have included ethnic minority students in their samples, the moderating impact of ethnicity on the indicators used to evaluate programme effectiveness has not always been explored. It is therefore not always possible to determine whether any of the observed positive programmatic impacts are accruing to ethnic minority students.

2. In the rare instances where effectiveness for students from specific cultural backgrounds has been assessed, there has been limited accounting for within-group heterogeneity. There is much heterogeneity within ethnic groups and it is possible that various sources of heterogeneity moderate programme effectiveness. These sources include immigration history and recency,

language skills, acculturation and enculturation[16], perceived minority status, experiences of discrimination, and socioeconomic status. The failure to account for these variables makes it impossible to assess the effectiveness of programmes for ethnic minority students who are more or less aligned with the values, beliefs and practices of the majority culture.

3. None of the programmes have been evaluated using measuring instruments that have been validated for ethnically diverse populations. This is important to bear in mind as there may be culture-specific programmatic effects that are not detected by instruments developed in European American contexts.

4. Very few evaluations have explicitly explored the cultural biases and assumptions that may be present in the particular approach to intervention. Many of the programmes have been developed in European American contexts and do not necessarily acknowledge the cultural context in which change is constrained to occur. This is important because the theories and assumptions underpinning a particular programme may not be relevant for students of some cultural backgrounds.

The programmes evaluated in the following sections vary to the extent in which these issues have been addressed. The issues addressed by each programme will be highlighted in the programme-specific sections devoted to culture, ethnic minority and indigenous students, and students of Non-English speaking background.

4.4.2. PROGRAMMES FOR PRESCHOOLERS AND PRIMARY SCHOOL-AGED CHILDREN

ZIPPY'S FRIENDS

Background

Zippy's Friends is a universal mental health promotion programme for children aged 6-7 that was initially developed by *Befrienders International*, a non-profit organisation involved primarily in suicide prevention, and financially supported by the pharmaceutical company *GlaxoSmithKline* (Bale and Mishara 2004). It is currently being used in 19 countries (Holen, Waaktaar et al. 2012).

[16] Enculturation refers to the degree to which an individual is embedded in his or her cultural traditions, as evidenced by traditional practices, language, spirituality, and cultural identity. Acculturation refers to the degree to which an individual has adopted the beliefs, values and practices of another cultural group.

Grounded in the finding that the ability to draw on a repertoire of coping strategies can help children mitigate the effects of stress on the development of mental health problems, the programme aims to expand the range of children's effective coping skills. It comprises 24 manualised one-hour sessions built around a set of six illustrated stories about a group of young children and a stick insect called Zippy. Delivered on a weekly basis by classroom teachers who have received 1-2 days training on how to run the programme, these sessions are aimed at teaching children how to identify and talk about their feelings, and how to cope with difficulties such as bullying, conflict, loss and change (Bale and Mishara 2004).

Effectiveness of Zippy's Friends

Three controlled (Mishara and Ystgaard 2006, Wong 2008, Dufour, Denoncourt et al. 2011) and two randomised controlled (Clarke and Barry 2010, Holen, Waaktaar et al. 2012) trials have assessed the immediate effects of Zippy's Friends on children's social-emotional competence. Using a combination of behavioural observations and child self-reports, these studies found small but statistically significant improvements in the emotional literacy, social competence and coping repertoires of only those children who participated in the programme. Some studies were also able to demonstrate reductions in various problem behaviours, including externalising behaviour (Mishara and Ystgaard 2006), hyperactivity (Mishara and Ystgaard 2006, Clarke and Barry 2010, Holen, Waaktaar et al. 2012), and internalising behaviour (Dufour, Denoncourt et al. 2011) among programme-exposed children. Since the analyses conducted by Mishara and Ystgaard (2006) and Holen, Waaktaar et al. (2012) accounted for school and/or classroom-level factors, the positive effects observed can be more confidently attributed to participation in Zippy's Friends.

A limitation of these studies is that their findings did not indicate whether the reported improvements were maintained over time. A further limitation is that the behavioural observations may have been biased due to having been made by teachers, parents and researchers who were aware of the children's participation status and who may also have had an investment in the study finding positive effects. These limitations did not apply to a study that explored the effects of previous participation in Zippy's Friends on children's coping abilities during their transition from kindergarten to elementary school one year later (Monkeviciene, Mishara et al. 2006). Using observations made by teachers who had no knowledge of whether children had participated in the programme in their previous kindergarten, the investigators found that, compared to controls, prior participants had significantly higher mean scores on behavioural and emotional adaptation to school,

had more positive reactions to the new school environment, and used more appropriate and diversified coping strategies.

Generalisability of findings

Since the studies reviewed so far have been conducted in diverse locations and populations, including general school populations in Denmark (Mishara and Ystgaard 2006), Lithuania (Mishara and Ystgaard 2006, Monkeviciene, Mishara et al. 2006), Norway (Holen, Waaktaar et al. 2012), China (Wong 2008) and Canada (Dufour, Denoncourt et al. 2011), and socio-economically disadvantaged school populations in Ireland (Clarke and Barry 2010), Zippy's Friends may have a reasonably broad effectiveness.

Issues for ethnic minority students

Although evaluations of Zippy's Friends have taken place in several countries, the effects of programme participation only appear to have been assessed for majority members of the populations residing in those countries. The ethnicity of participants was not reported in several studies (Mishara and Ystgaard 2006, Monkeviciene, Mishara et al. 2006, Clarke and Barry 2010, Dufour, Denoncourt et al. 2011), and ethnic minority students comprised only three percent of the sample in the study conducted by Holen, Waaktaar et al. (2012). There therefore appears to have been little consideration given to examining the effectiveness of the programme for ethnic minority students. Despite assertions that the programme is generic and can be adapted to any country or culture (Bale and Mishara 2004), there appears to have been little discussion of the cultural biases and assumptions that may be present in the story-based approach to intervention.

Potential moderators of and barriers to programme effectiveness

Programme limitations

Despite promising findings from a number of studies, there may be a case for improving the current format of Zippy's Friends. Teachers who were interviewed as part of the study by Clarke and Barry (2011) repeatedly highlighted the need for an additional Zippy's Friends programme for the senior cycle of primary school. Most also drew attention to the need for the skills taught in Zippy's Friends to be reinforced throughout the school day and at home by offering training to all teachers in a school and creating more opportunities for parental involvement.

Implementation context

Teachers' perceptions of the effectiveness of Zippy's Friends varied according to contextual factors: case studies of programme implementation in two Irish schools found that teachers in a large urban school with a multi-cultural profile in an area of multiple disadvantage were less positive about the effectiveness of the programme than a teacher in a small, almost monocultural rural school (Clarke, O'Sullivan et al. 2010). The perceived lack of a cohesive community context and low levels of parent involvement in the former school were identified as key factors that contributed to a more challenging implementation context.

Potential barriers to implementation

Potential for iatrogenic effects

The findings of one study are suggestive of some negative programmatic effects. In their Canadian trial, Dufour, Denoncourt et al. (2011) noted that, compared to controls who perceived more social support from other children post-intervention, children in the intervention group reported no change in perceived peer social support. Furthermore, compared to controls who did not report significant relational changes, children who participated in Zippy's Friends felt that relationships between children in the class were more negative following programme participation. In addition to the overall need for further research, these findings point to the interim need for teachers to be alert to any negative relational effects when delivering Zippy's Friends.

Summary of Zippy's Friends

Zippy's Friends is a universal mental health promotion programme aimed at expanding the range of effective coping skills for children aged 6-7. It is designed to be delivered by classroom teachers who have undergone 1-2 days of training and has thus far been implemented in 19 countries.

Findings from a number of controlled and randomised controlled trials suggest that participation in Zippy's Friends is associated with small but statistically significant improvements in children's emotional literacy, social competence and coping abilities. Although studies reporting long-term follow-up data are few, one such study suggests that the improvements in coping abilities persist throughout the year following programme participation. Although positive effects have been reported in studies conducted in diverse locations and settings, these studies appear to have addressed programme effectiveness solely for majority members of the populations

residing in those countries. There is therefore no information regarding the likely effectiveness of Zippy's Friends for ethnic minority students.

Despite reasonably promising findings overall, there are concerns that Zippy's Friends may not be sufficiently comprehensive to allow children to build on their learning outside of the classroom or in later school years. Perceptions of effectiveness also varied according to implementation context, with teachers in more socially disadvantaged schools having less positive impressions. Additional concerns relate to preliminary findings suggestive of some unintended negative programmatic effects. Thus, while Zippy's Friends holds promise as an intervention for improving the coping abilities of primary school-aged children, further research and development may be required in order to ensure that it provides adequate learning opportunities for children and does not undermine their wellbeing in any way.

PROMOTING ALTERNATIVE THINKING STRATEGIES

Background

Promoting Alternative Thinking Strategies (PATHS) is a universal curriculum-based programme designed to be used by teachers and support staff to promote social-emotional competence, reduce behavioural problems, and enrich classroom and school environments. Divided into two separate curricula, one for preschoolers and one for primary school children in grades 1-5 (age 6-11), PATHS is a developmentally-sequenced programme that recognises the differing needs and abilities of children at different stages of their school experience. It also recognises the importance of learning in the context of meaningful relationships by emphasising the use of teaching strategies that optimise the quality of teacher-child and peer-peer interactions. PATHS has so far been delivered throughout the US and in 20 countries overall.

A broad conceptual approach that allowed the integration of knowledge from the domains of child development, neurobiology, psychoanalysis, emotional intelligence and school ecology was used in the development of the PATHS curricula. Lessons are broadly aimed at facilitating the developmental integration of affect, behaviour, cognition, and linguistic abilities. Since children's ability to understand their own and others' emotions is recognised as a central component of effective problem-solving and rewarding social interaction, the curricula have a strong focus on the role of emotions and emotional development. Although PATHS is designed to be formally taught 2-3 times per week, daily activities encourage the generalisation of skills to everyday situations (Kusche and Greenberg 2012).

Effectiveness of grade-level PATHS

Several RCTs have been conducted in order to assess the effectiveness of the grade-level PATHS curriculum for different child populations in the US. Greenberg, Kusche et al. (1995) found that implementation of PATHS led to significant improvements in emotional understanding, emotional fluency, and self-perceived efficacy in managing emotions among second and third grade children in both general and special education classrooms at one-month follow-up.

Riggs, Greenberg et al. (2006) further explored the effect of PATHS on the neurocognitive abilities and behavioural outcomes of second and third grade children in general education classrooms. Cognitive testing and teacher reports revealed that children who received the PATHS curriculum demonstrated significantly greater inhibitory control and verbal fluency, and significantly fewer internalising and externalising behaviour problems, than children in the control group at one-year follow-up.

Similar reductions in internalising and externalising behaviours, as well as in self-reported depression, were documented in a study examining the effects of a modified PATHS curriculum on first through third grade children in self-contained special education classrooms (Kam, Greenberg et al. 2004). Although this curriculum, which focused more on the basic skills of self-control and less on the more advanced practice of problem-solving, was only delivered over the course of one year, its beneficial impacts were sustained over a 2-year follow-up period.

The grade-level PATHS curriculum has also been used as the universal component of the Fast Track intervention for conduct problems, which combines the delivery of PATHS with five additional selected programmes. The effectiveness of the PATHS component for approximately 7,000 first-grade children of diverse ethnicities was explored in a large RCT involving 198 intervention and 180 control classrooms from neighbourhoods with higher than average crime in four US locations (Conduct Problems Prevention Research Group 1999). When compared with their unexposed counterparts, analyses conducted both with and without the data derived from those children who had participated in one or more of the additional selected interventions revealed significantly lower levels of peer-reported aggression, hyperactivity and disruptive behaviour among PATHS-exposed children. Independent observers also documented a number of significant improvements in the atmosphere of PATHS relative to control classrooms.

A similarly large RCT with Fast Track schools examined the effect of the PATHS curriculum on 2,937 children of diverse ethnicities who remained in the same intervention or control schools for grades 1-3 (Conduct Problems Prevention Research Group 2010). Teacher and peer reports revealed modest but significant intervention effects, including reduced aggression and increased prosocial behaviour, among those children who had not received any of the other interventions.

All of the studies reviewed so far selected schools or classrooms as the unit of randomisation. Since three of the studies controlled for the resulting clustering of the data (Conduct Problems Prevention Research Group 1999, Kam, Greenberg et al. 2004, Conduct Problems Prevention Research Group 2010), it is unlikely that school- or classroom-level factors could wholly explain the differences that are routinely observed between control and intervention groups. This suggests that participation in PATHS confers substantial student benefits.

Effectiveness of preschool PATHS

The preschool PATHS curriculum has also been evaluated in a US-based RCT involving 248 ethnically diverse, economically disadvantaged children aged 3-4 years in 20 classrooms (Domitrovich, Cortes et al. 2007). At the end of one year of implementation, children who had received the curriculum were rated by both teachers and parents as significantly more interpersonally skilled and emotionally aware than those who had not. Curriculum-exposed children were also significantly less likely than controls to be described by their teachers as withdrawn or lacking friends. Independent child assessments by research assistants further indicated that curriculum exposure significantly improved children's ability to accurately identify emotions in themselves and others.

The consistency of reporting across teachers, parents and research assistants lends credibility to the validity of these findings, as does the investigators' statement that the parents did not know whether their child had been assigned to the intervention or control group. The major limitation of this study is that, despite randomisation having occurred at the classroom level, analyses were conducted at the level of individual children. If classrooms do indeed exert a strong effect on outcomes, the statistical significance of the intervention effect will have been overestimated, thereby biasing the statistical tests towards the erroneous detection of an intervention effect.

Generalisability of findings

All of the studies evaluated so far have been conducted in the US. However, the reported replication of positive programmatic effects for the grade-level PATHS curriculum in quasi-experimental studies conducted in Germany, The Netherlands and England (Kusche and Greenberg 2012) is suggestive of broader-based effectiveness.

Issues for ethnic minority students

Most evaluations of PATHS have included sizable proportions of ethnic minority students. However, none of the evaluations have examined the moderating impact of ethnicity on programme effectiveness or discussed the cultural biases and assumptions that may be present in the approach to intervention. Thus, while ethnic minority students may have benefitted from programme participation, it is neither possible to confirm this, nor draw conclusions about the likely effectiveness and appropriateness of PATHS for students from specific cultural backgrounds.

Potential moderators of programme effectiveness

Group leader training and supervision

The teachers charged with implementation in all of the US-based RCTs had received 2-3 days training and both weekly consultation and observation from PATHS project staff throughout the period of programme delivery. Since the studies conducted outside of the US could not be accessed, it is not clear how much contact the implementing teachers in the three European locations cited in the preceding section had with the programme developers. It is conceivable that the extent of such contact could moderate the effectiveness of PATHS.

Principal support and skill of classroom teachers

Despite finding no overall intervention effect for the total sample of 350 students, Kam, Greenberg et al. (2003) noted that support from school principals and skilled use of the PATHS curriculum by classroom teachers was associated with significantly lower levels of children's aggression, dysregulated behaviours, and social incompetence. This suggests that the effectiveness of PATHS can be moderated by overall school commitment to implementation and individual teacher skill in curriculum delivery.

Implementation context

The positive intervention effects reported by the Conduct Problems Prevention Research Group (2010) were stronger and more robust in less disadvantaged schools. This suggests that implementation context has the potential to moderate the effectiveness of PATHS.

Potential barriers to implementation

Competing curriculum demands

In their process evaluation of the implementation of the grade-level PATHS curriculum in an elementary school serving a distressed urban area in the US, Seifer, Gouley et al. (2004) cited competing curriculum demands as one of the greatest barriers to effective implementation. Teachers and administrators viewed the amount of time dedicated to the PATHS curriculum (30-45 minutes, three times per week) as interfering with commitments to meet curriculum requirements directly addressing literacy and numeracy skills. They were well aware that the main criterion on which their job performance was evaluated was the degree to which their students achieved in literacy and numeracy. This suggests that successful implementation of PATHS will require substantial educational commitment to the goal of enhancing students' emotional wellbeing. In the absence of such commitment, implementation is likely to be challenging.

Quality of curriculum materials

Teachers in the process evaluation conducted by Seifer, Gouley et al. (2004) expressed dissatisfaction with the supplied PATHS curriculum materials. In general, they viewed them as out of date and not sufficiently engaging for the young children in their classes. It should be noted, however, that this study was conducted using a pre-publication version of the curriculum.

Summary of PATHS

PATHS is a comprehensive, developmentally-sequenced, teacher-ready programme that has been delivered throughout the US and in over 20 countries overall. It is broadly aimed at enhancing social-emotional competence, reducing behavioural problems, and enriching school and classroom environments.

Two separate curricula, one for preschoolers and one for primary school children in grades 1-5, form the basis of the programme. Each draws on knowledge from diverse

areas and has a strong focus on emotional development. Although the structured lessons outlined in each curriculum are designed to be taught 2-3 times per week, daily activities encourage the generalisation of skills to everyday situations.

Findings from carefully-conducted randomised research suggest that participation in the grade-level PATHS curriculum can improve social-emotional competence and neurocognitive functioning, and reduce internalising and externalising behaviours among primary school-aged children. Observations made at the level of individual classrooms also suggest that delivery of grade-level PATHS can exert positive effects on classroom atmosphere. Few studies assessing the effectiveness of preschool PATHS have been conducted. Although preliminary findings from a single RCT suggest that curriculum exposure is associated with enhanced social-emotional competence among children aged three to four, the evidence supporting this curriculum is quite limited at this stage. Most studies have included sizable proportions of ethnic minority students. However, it is difficult to draw conclusions about the likely effectiveness of either of the PATHS curricula for these students as the potential moderating impact of ethnicity was not explored.

A number of other factors have been identified as moderators of the effectiveness of grade-level PATHS, with administrative support, skilled use of the curriculum by teachers, and less socially disadvantaged implementation contexts being associated with larger intervention effects. It is not yet clear how extent of contact with the programme developers might moderate programme effectiveness as most of the findings were derived from US-based studies in which the teachers charged with implementation had received comprehensive training and ongoing support from PATHS project staff. Despite this uncertainty, the reported replication of positive programmatic effects in quasi-experimental studies conducted in locations outside of the US suggests that substantial student gains are possible when grade-level PATHS is delivered outside of the context in which it was developed.

An educational environment that prioritises students' academic achievement over emotional wellbeing is likely to be the greatest barrier to the successful implementation of grade-level PATHS. As a comprehensive curriculum, grade-level PATHS must compete with other activities in the school curriculum, which may place teachers under an unmanageable burden if sufficient time cannot be granted to its implementation. Thus, while grade-level PATHS certainly holds promise as an intervention for enhancing the social-emotional competence of primary school-aged children, its implementation may require substantial commitment to the goal of enhancing student wellbeing on the part of school administrators.

SOCIAL DECISION MAKING AND PROBLEM SOLVING PROGRAM

Background

The Social Decision Making and Problem Solving Program (SDM-PSP) is a 2-year, US-based, universal curriculum for children in grades 4-5 (age 9-11). It is designed to promote social competence, with the ultimate aim of preventing violence, substance abuse and related problem behaviours (Elias and Weissberg 2000).

Based on the view that children's inability to cope with decision-making situations, particularly when under stress, is a primary link in a sequence of interpersonal behaviour that promotes substance abuse and mental health problems, SDM-PSP emphasises the development of self-control, social awareness and group participation skills, and provides instruction in social decision-making and problem-solving strategies that promote clear thinking under stress (Elias, Gara et al. 1991, Elias and Weissberg 2000).

Effectiveness of SDM-PSP

The effectiveness of SDM-PSP has been assessed in a cross-sectional follow-up study that took advantage of the exclusive flow of students in a working class area of New Jersey from four elementary schools that had implemented SDM-PSP into one high school (Elias, Gara et al. 1991). Comparing the outcomes of students at this high school who either had or had not attended one of the four elementary schools offering the SDM-PSP curriculum, the investigators found that SDM-PSP students scored significantly higher on national achievement tests and indices of social competence and self-efficacy, and significantly lower on indices of psychopathology and both anti-social and self-destructive behaviour.

Issues for ethnic minority students

The ethnicity of the students in the study was not reported but they were recruited from an area described as "predominantly white". The study is therefore not able to answer questions regarding the likely effectiveness of SDM-PSP for ethnic minority students.

Study limitations

The overall strength of effects was not large. Since SDM-PSP students did not receive booster sessions or additional interventions in middle or high school, the modest

effects observed could be indicative of the long-term effects that are possible with a 2-year "inoculation" of primary school-aged children with social competence training. However, since baseline data were not available and randomisation was not used to select and assign students to control and intervention groups, the major caveat to this suggestion is that these effects could equally have been due to factors other than exposure to the SDM-PSP curriculum.

Assuming that the observed effects were in fact due to SDM-PSP participation, the investigators concluded by suggesting that interventions in elementary schools be considered necessary but not sufficient as protective factors. Echoing the calls that have been made for the expansion of Zippy's Friends, they recommended affording children with a systematic opportunity in middle and high school to build upon their earlier learning.

Summary of SDM-PSP

The SDM-PSP is a 2-year, US-based, universal curriculum aimed at promoting social competence among children in grades 4 and 5. It emphasises the development of self-control, social awareness and group participation skills, and provides instruction in social decision-making and problem-solving strategies.

The only study to assess the effectiveness of SDM-PSP was a cross-sectional follow-up study in which the outcomes of high school students who either had or had not attended an SDM-PSP elementary school were compared. Although the results indicated improved outcomes, including a reduction in self-destructive behaviour, for students who had received SDM-PSP, the study design was not sufficiently robust to rule out the possibility that the small effects observed were due to factors other than exposure to SDM-PSP.

More research on the effectiveness of SDM-PSP is therefore required before decisions regarding its implementation can be made.

4.4.3. PROGRAMMES FOR INTERMEDIATE AND SECONDARY SCHOOL-AGED CHILDREN

THE PENN RESILIENCY PROGRAM

Background

The Penn Resiliency Program (PRP) is an intervention designed to enhance resilience and prevent symptoms of depression in children aged 10-14. Developed by clinical

psychologists in the US, it is based on a traditional Cognitive Behavioural Therapy (CBT) model. Although principally a school-based programme, PRP has also been delivered in clinical and non-school community settings.

The programme comprises twelve 90- to 120-minute manualised group sessions that are designed to be delivered by teachers and school counsellors. The cognitive component of the programme teaches students techniques for evaluating, challenging and modifying unhelpful thoughts, assumptions and core beliefs. The behavioural component facilitates the activation of a variety of social problem-solving skills. Weekly homework sessions encourage students to use these techniques and skills in real-life situations (Gillham, Brunwasser et al. 2008).

Effectiveness of PRP

PRP is one of the most widely researched depression prevention programmes. Its effectiveness as both a universal and selected intervention has been assessed in a number of controlled evaluation studies.

Depressive symptoms

A meta-analysis of 17 PRP evaluations that included assessments of PRP's effect on depressive symptoms found that male and female students who participate in PRP report reliably lower levels of depressive symptoms through 12 months of follow-up compared with those who receive no intervention (Brunwasser, Gillham et al. 2009). Since the vast majority of studies included in this analysis were conducted in school settings, PRP appears to have enduring effects on self-reported depressive symptoms when delivered as a school-based intervention. In several of these studies, PRP appears to have prevented elevated or clinically relevant levels of depression symptoms. Although one study conducted in a primary care setting suggests that PRP's effects on depressive symptoms may translate into the prevention of depressive disorders (Gillham, Hamilton et al. 2006), it is presently unclear whether PRP's effects on depressive symptoms translate into the prevention of depressive disorders in school-based settings as very few school-based studies have been able to assess diagnostic outcomes over an appropriate period of time.

PRP has been delivered as both a universal and selected intervention. Whereas the effects of the selected approach were significant at post-intervention, 6- to 8-month follow-up, and 12-month follow-up, those of the universally-delivered intervention were only significant at the latter time-point. Although it is presently unclear why the effects of the universally-delivered PRP became more robust at the longer-term follow-up, the repeated observation of this phenomenon in evaluations of other

universally-delivered depression prevention programmes for children and adolescents (Stice, Shaw et al. 2009) suggests not only that the effect is real but that similar underlying mechanisms may be at play.

Anxiety and externalising behaviour

A limited number of studies has examined the effects of PRP on anxiety symptoms and externalising behaviour. Two of the three studies examining anxiety symptoms found significant preventative effects through at least one year of follow-up (Roberts, Kane et al. 2003, Roberts, Kane et al. 2004, Gillham, Reivich et al. 2006). Of the two studies examining externalising behaviour, one found significant reductions relative to control only at immediate post-intervention (Roberts, Kane et al. 2003, Roberts, Kane et al. 2004), and the other over a 30-month follow-up period (Cutuli, Chaplin et al. 2006).

Cultural considerations

Although samples in the majority of PRP evaluations were predominately European American and from middle-class suburban communities, PRP has also been evaluated with low-income ethnic minority children in the US (Cardemil, Reivich et al. 2007), with children living in China (Yu and Seligman 2002) and Australia (Pattison and Lynd-Stevenson 2001, Quayle, Dziurawiec et al. 2001, Roberts, Kane et al. 2003, Roberts, Kane et al. 2004), and in both inner-city (Cardemil, Reivich et al. 2007) and rural (Roberts, Kane et al. 2003, Roberts, Kane et al. 2004) communities. These evaluations have documented significant improvements in depressive symptoms among Chinese (Yu and Seligman 2002) and low-income Latino children (Cardemil, Reivich et al. 2007) and in anxiety symptoms among rural Australian children (Roberts, Kane et al. 2003, Roberts, Kane et al. 2004). However, no effects on depressive symptoms were found for Australian (Pattison and Lynd-Stevenson 2001) and African American (Cardemil, Reivich et al. 2007) children throughout 8- and 24-month follow-up periods, respectively.

Specific issues for ethnic minority students

The work of Cardemil, Reivich et al. (2007) is commendable for its inclusion and awareness of culture-specific influences on mental health and intervention-mediated change. These investigators recognise that the cognitive-behavioural assumptions of PRP may not necessarily hold for low-income ethnic minority populations and they have taken care not to impose European-American values on these participants by making substantial modifications to the programme content. Although this work has

allowed some preliminary explorations of the effectiveness of PRP for two distinct ethnic minority student groups in the US (see above), measuring instruments without proven effectiveness for these populations were used, and the potentially differential programme effects on students with different levels of acculturation and enculturation were not explored. Thus, it is difficult to determine whether the reported lack of effect on depressive symptoms for African American students reflects a true lack of effect or the use of culturally insensitive evaluation instruments, and whether the positive effects reported for Latino students were specific to a sub-sample with similar levels of acculturation and/or enculturation. More research on how best to adapt PRP for students from different cultural backgrounds, and on the effectiveness of these adaptations is needed.

Potential moderators of programme effectiveness

Type of intervention

In their meta-analysis, Brunwasser, Gillham et al. (2009) noted that overall programme effects on depressive symptoms were modest but tended to be larger when PRP was delivered as a selected rather than as a universal intervention. In addition, a recent trial comparing outcomes for PRP participants and standard curriculum controls found that intervention effects were moderated by baseline levels of hopelessness (Gillham, Reivich et al. 2012). Specifically, PRP significantly reduced depression symptoms, anxiety symptoms, and hopelessness, and increased active coping only among those adolescents with average and above-average levels of baseline hopelessness. Taken together, these findings suggest that PRP is more beneficial to participants at high risk and that selected programme applications may be associated with substantially greater student benefits than universal ones[17].

Group leader characteristics

Sub-group analyses conducted for the meta-analysis of Brunwasser, Gillham et al. (2009) suggest that PRP is effective in reducing depressive symptoms when group leaders are either clinically trained PRP research team members or community providers[18]. The trial conducted by Gillham, Reivich et al. (2012) provides further evidence that PRP is beneficial to adolescents when delivered by community

[17] A potential caveat to this latter suggestion is that it is possible that the presence of adolescents with low levels of hopelessness is beneficial to their peers.

[18] Community providers are defined as teachers, school counsellors, learning mentors and child mental health professionals working for a managed care organisation.

providers[19]. Despite the promise of these findings in terms of the prospects for effective dissemination in real-world settings, it should be noted that the average effects for community providers were small and tended to be smaller than those for research team members. This phenomenon has also been observed for other depression prevention programmes for children and adolescents (Stice, Shaw et al. 2009) and suggests that schools may be best served by contracting clinically trained personnel to deliver the programme.

Group leader training and supervision

In most of the studies that have evaluated the effectiveness of community provider-led PRP, the programme developers provided direct training and ongoing supervision to the group leaders. Evaluations of PRP delivered by community providers who have had less or no contact with PRP developers are scarce. Three studies in which providers had received some initial training but not ongoing supervision from the PRP developers have been conducted in Australian school settings: one yielded mixed results (Quayle, Dziurawiec et al. 2001) and the others found no significant effects on depressive symptoms (Pattison and Lynd-Stevenson 2001, Roberts, Kane et al. 2003, Roberts, Kane et al. 2004). Although it is difficult to draw definitive conclusions from such a small number of studies, it is possible that there is a drop-off in effectiveness as contact with the PRP research team diminishes. This underscores the need to ensure that community providers receive comprehensive support from the PRP research team or other experts familiar with this intervention if PRP is implemented in New Zealand schools[20].

Parent intervention

A group intervention aimed helping parents to apply the skills taught by the standard PRP programme to their own lives and support their children's use of these skills has been developed (Gillham, Reivich et al. 2006). A longitudinal study investigating whether the combination of the PRP and parent interventions is superior to PRP alone found no added benefit of the parent intervention on any outcome throughout six months of follow-up (Gillham, Reivich et al. 2012). Since few parents attended most sessions and only one fourth attended the booster sessions,

[19] In this case, the community providers were school teachers and counsellors.

[20] Group leaders involved in PRP studies typically participate in training programs lasting 3-10 days in length, depending on the needs of the particular group. See http://www.ppc.sas.upenn.edu/prpleadertraining.htm for more information on PRP group leader training and supervision.

the lack of observed effects may have been due to parents not having received key intervention content. This suggests that further research is required in order to determine whether the combination of the PRP and parent interventions is superior to PRP alone.

Programme components responsible for intervention effects

Four studies using active control conditions provided no evidence that PRP is superior to interventions that do not target cognitive risk factors in terms of reducing depressive symptoms (Brunwasser, Gillham et al. 2009). While the most obvious explanation for this finding is that PRP's effects on depressive symptoms are attributable to factors other than cognitive-behavioural training, it could be that PRP's effects are due to one or more aspects of the cognitive-behavioural training while those of the active control are due to other equally important conditions. Establishing the mediators of PRP's effects is an especially important task for future research given emerging findings from CBT component analyses suggesting that the behavioural, not cognitive, components of CBT are primarily responsible for its therapeutic gains (Longmore and Worrell 2007). If the same is true for PRP, it may be prudent to revise the programme, putting greater emphasis on the teaching of behavioural skills.

Summary of PRP

PRP is a cognitive-behavioural intervention designed to enhance resilience and prevent symptoms of depression in children aged 10-14. It comprises twelve 90- to 120- minute group sessions that teach students a variety of cognitive and problem-solving skills that can be used to cope with stressful events and feelings of sadness.

The effectiveness of PRP as both a universal and selected intervention for preventing depression has been evaluated in at least 17 controlled studies. A meta-analysis of these studies, most of which used samples that were predominantly comprised of children of European ethnicities, suggests that participation in PRP is associated with modest but statistically significant reductions in self-reported depressive symptoms among both boys and girls through 12 months of follow-up. Similar reductions have been reported in studies examining the impact of culturally-tailored PRP applications on children living in China and low-income Latino children living in the US. However, since such effects have not been observed for low-income African American children living in the US, more research is required to determine how PRP can better meet the mental health needs of children from diverse cultural and socioeconomic backgrounds.

PRP's effects on depressive symptoms tend to be larger and more quickly detected when delivery is at the selected rather than universal level. This suggests that schools may be best served by delivering the programme to small groups of children with elevated depressive symptoms or associated risk factors. Although PRP is effective in reducing depressive symptoms when group leaders are either PRP research team members or community providers, the effects tend to be smaller for community provider-led PRP. Most of these community providers had received extensive training and supervision form the PRP research team. Since studies in which community providers had received some initial training but not ongoing supervison yielded less promising results, there may be a drop-off in effectiveness as contact with the research team diminishes. These findings highlight the need to ensure that community providers receive comprehensive support from the research team if PRP is implemented in New Zealand schools.

Although some studies suggest that participation in PRP may also reduce anxiety symptoms and externalising behaviour, the number of studies that have examined outcomes other than depressive symptoms is currently too low to recommend PRP for anything other than alleviating depressive symptomatology.

Overall, the findings suggest that PRP holds promise as a selected intervention for reducing depressive symptomatology among at-risk schoolchildren aged 10-14 years.

TRAVELLERS

Background

Travellers is a New Zealand-based selected psycho-educational and therapeutic group programme for students aged 13-14 years who are experiencing challenging events and/or early signs of emotional distress. These students are selected on the basis of their responses to a universal screening tool that was specifically designed for Travellers (Robertson, Boyd et al. 2012).

The programme itself was developed on behalf of Skylight, a charitable trust that focuses on helping children and young people to deal with loss and grief, and aims to assist students to:

1. Develop appropriate coping skills and strategies.
2. Think about stressful situations in ways that encourage more adaptive behavior.

3. Gain a sense of empowerment through the use of behaviours that confer a sense of self-worth.

4. Access additional help and support when necessary.

The development of Travellers was informed by a literature review of programmes that have been implemented to promote and support the mental, emotional and social wellbeing of young people. This review identified a series of approaches and constructs, including mental health promotion, the use of metaphor, meaning-making, self-esteem, social-emotional competence, cognitive therapy, coping, social connectedness and support, help-seeking and group work, that appear to underpin effective and promising programmes. These evidence-based approaches and constructs inform the structure and content of Travellers (Dickinson 2008).

The programme comprises eight sessions of approximately 90 minutes and is intended to be delivered by school personnel (guidance counsellors, social workers, deans and deputy principals) who have attended an intensive 2-day training workshop (Skylight 2005). These workshops are facilitated by Skylight employees who have backgrounds in areas such as adult education, youth work, psychology and education psychology, counselling and family court law (A. Davidson, personal communication, July 17, 2013).

Effectiveness of Travellers

The effectiveness of Travellers has been evaluated in two quasi-experimental studies and one RCT. Conducted during the piloting of Travellers, the first of the former type of evaluation used an uncontrolled pre-and post-test study design and involved 34 "high risk" Year-9 students (aged 13-14 years) from two New Zealand secondary schools (Dickinson, Coggan et al. 2003). Pre-post test comparisons revealed small but statistically significant reductions in self-reported emotional distress among Travellers participants at one of the participating schools one month following programme completion. School counsellors in both schools also reported that over half of the participants had accessed individual counselling during the programme and post-group, with the majority of these having self-referred. Although promising, the small sample size limited generalisation of these pilot phase findings. Furthermore, since there was no control group, the observed effects could have been due to factors other than exposure to Travellers. This latter point is particularly salient given that both schools had implemented whole school approaches to promoting student wellbeing at the time of piloting Travellers.

To extend and refine these findings, an RCT was conducted in 10 secondary schools in the Auckland and Northland regions of New Zealand (Dickinson 2008). Within each school, Year-9 students completed the Travellers baseline screening survey and those who were subsequently identified as "high-need" or "medium-need" were randomly allocated to either a Travellers (319 students) or usual care comparison (178 students) group. Self-report measures of *feel-good*, emotional distress and help-seeking were used to collect quantitative data at three time points: pre-programme; one-month follow-up; and six-month follow-up. Semi-structured interviews with participants, group leaders and school personnel were also used to collect qualitative data at the one-month follow-up.

Compared to their usual care counterparts, Travellers participants reported small but significantly greater reductions in emotional distress at one-month but not at six-month follow-up. Although the *feel-good* status of both groups improved over time, no significant differences between them were found. In general, Travellers participants reported greater improvements in help-seeking over the course of the study than their usual care counterparts, with the difference between the groups achieving statistical significance when help-seeking was defined as the percentage of students who sought help from three or more sources, but not when it was defined as the percentage of students who sought help from the school counsellor. Qualitative findings from interviews with both Travellers participants and key informants suggested that participation in the programme helped young people to: feel more confident; understand their life experiences; connect with peers, teachers and school counsellors; and seek help.

Since these initial studies, Travellers has been made available to all New Zealand secondary schools, with the New Zealand Council for Educational Research (NZCER) having been contracted to conduct an external evaluation. Similar to the initial pilot study, the most recent evaluation used an uncontrolled pre-and post-test study design (Robertson, Boyd et al. 2012). Pre-post test comparisons revealed small but statistically significant reductions in self-reported emotional distress despite statistically significant increases in the number of self-reported challenging life events experienced among a sample of 129 Travellers participants two to three years after programme completion. The majority of students who completed follow-up surveys also reported that Travellers had helped them to learn a range of strategies that are reported to support the building of resilience, interpersonal connectedness and help-seeking. However, when asked to describe a difficult situation they had experienced in the past 12 months, less than half of these students could articulate how the strategies learnt in Travellers had helped them to manage the situation.

Although this could be due to articulation problems, it could also indicate that Travellers, at least in its current format, is not helping students to apply the taught strategies to real-world situations.

Effectiveness for ethnic minority students

The studies conducted by Dickinson, Coggan et al. (2003) and Dickinson (2008) shed little light on the effectiveness of Travellers for ethnic minority students because the ethnicity of the study participants was not reported. Similarly, although ethnic minority students were included in the matched sample that Robertson, Boyd et al. (2012) used to gauge changes in student wellbeing over time, their numbers were too small to permit an analysis of the moderating impact of ethnicity on outcome measures. Although a number of Māori and Pasifika students who completed follow-up surveys in this latter study reported that Travellers had helped them to learn various coping strategies, the data for Pasifika students may not be very reliable due to the reported tendency of these students to respond more positively to survey questions than their non-Pasifika counterparts (Robertson, Boyd et al. 2012).

Study limitations

The findings from the two uncontrolled studies must be interpreted with caution because the absence of a control group precludes attribution of the observed effects to the Travellers programme. The experience of the participants in the larger of these studies is also unlikely to be representative of the experience of all Travellers participants for the following reasons:

1. Although a response rate could not be calculated[21], the fact that only 212 students from 26 of the 66 eligible schools completed follow-up surveys suggests that it is low.

2. Only 129 of the 212 completed follow-up surveys could be matched to surveys completed at baseline.

The findings from the RCT are certainly more robust. However, due to a number of methodological issues, they can only be regarded as preliminary. These issues include:

[21] Information on the total number of students who completed the programme during the time period under investigation was not collected.

1. The quantitative effects were small and suggested a more modest programme impact than the qualitative interview data. Since randomisation was conducted at the level of individual children within each school, it is possible that the quantitative effects were underestimated due to Travellers participants influencing their usual care controls. However, it is equally possible that the interviewees were overly enthusiastic and optimistic about the impact of the programme as a result of being interviewed by the programme developer (Travellers participants), having only just completed the programme (Travellers participants), or not wanting the interview data to reflect poorly on personal performance (group leaders) or the school's decision to invest in the programme (school personnel).

2. The absence of longer term follow-up data.

3. The failure to correct quantitative data for multiple comparisons[22] or conduct quantitative analyses on an intent-to-treat basis.

4. Since only eight of the 25 schools originally identified to represent the full range of decile ratings, plus the two schools from the pilot study, agreed to participate in the Travellers project, it is unlikely that the final school sample is representative of the wider school population[23].

A further caveat to the interpretation of the findings regarding help seeking is that the results were only statistically significant between the Travellers and usual care groups when help seeking from any source was measured. Since the most common sources of help were cited as friends, parents and siblings, it may be pertinent to question whether such people are capable of offering help that is not only supportive but also transformative.

[22] When two groups are compared on the basis of a number of different outcome variables, it becomes increasingly likely that the groups will appear to differ with respect to at least one of these variables by random chance alone as the number of variables increases.

[23] The 10 trial schools ranged from decile 2 to decile 10, with six ranging from decile 7 to decile 10 and four from decile 2 to decile 4.

Potential enablers of implementation

Availability and accessibility of group leader training

The Ministry of Health currently contracts Skylight to provide Travellers as one component of the *New Zealand Suicide Prevention Strategy* (Robertson, Boyd et al. 2012). Group leader training is therefore both locally available and easily accessible.

Suitability

As a New Zealand-based programme, Travellers has been specifically developed for the New Zealand general school population. It may therefore be well-suited to the culture and context of New Zealand schoolchildren.

In terms of suitability for indigenous students, Skylight have been working with two marae in the Wellington region in order to adapt Travellers for the purposes of delivering a wellbeing programme to 15-17 year old Māori students who have been excluded from general education but who are engaged in marae-based learning.

Acceptability

In the evaluation conducted by Dickinson (2008), Travellers group leaders and other school personnel reported that the programme was acceptable to schools. Some of these key informants considered the programme to be an integral part of their schools' ongoing pastoral care and guidance structures . These findings suggest that Travellers may be an acceptable intervention for schools in New Zealand.

Summary of Travellers

Travellers is a New Zealand-based selected mental health promotion programme for students aged 13-14 years that is currently being offered as one component of the *New Zealand Suicide Prevention Strategy*. It is based on a number of evidence-based constructs and approaches and consists of a series of small-group workshops for at-risk students. These workshops are intended to be delivered by school personnel who have attended an intensive 2-day training workshop and are broadly aimed at teaching students a variety of cognitive strategies and coping skills, and improving their access to social support.

The Ministry of Health currently contracts a local charitable trust to deliver Travellers. Although this would make Travellers a relatively straightforward programme for schools to implement, there is as yet limited evidence to support its effectiveness, with only one of the three existing studies having sufficient

methodological rigour to permit the drawing of meaningful conclusions. Qualitative data from this study suggest that Travellers was an acceptable intervention to students and school personnel, and that participation in the programme helped some students to feel more confident, understand their life experiences, connect with others, and seek help. Although the quantitative data suggest that participation in Travellers was associated with small but statistically significant improvements in students' self-reported emotional distress and help-seeking behaviour, the improvements in emotional distress did not persist beyond the one-month follow-up and it is presently unclear whether the sources of help from which the students most commonly sought help would have sufficient skill to respond effectively to high risk mental health symptoms.

Additional concerns relate to findings from one of the other studies suggesting that Travellers participants may experience difficulty when attempting to apply the taught material to real-world situations. Thus, while Travellers may hold promise as a mental health promotion programme for young people, more research is needed before school-wide implementation of Travellers can be recommended as an effective resilience-building intervention.

4.4.4. PROGRAMMES FOR SCHOOLCHILDREN OF ALL AGES

FRIENDS

Background

FRIENDS is a CBT-based early intervention and prevention programme for childhood anxiety that was developed by an Australia-based clinical psychologist. It is currently endorsed by the World Health Organization (WHO) as the only evidence-based programme effective for childhood anxiety (WHO 2004). The programme comprises three manualised, developmentally-tailored curricula:

1. Fun FRIENDS targets children aged 4-7 years.
2. FRIENDS for Life – Child targets children aged 7-12 years.
3. FRIENDS for Life – Youth targets adolescents aged 12-16 years[24].

[24] The nomenclature used for the different FRIENDS curricula is consistent with that used in the international literature. In New Zealand FRIENDS for Life – Child is also known simply as FRIENDS for Life, and FRIENDS for Life – Youth is also known as My FRIENDS Youth. See http://www.lifepaths.org.nz/friends-for-life/ for further details.

Each curriculum is delivered over the course of 10 weekly one-hour sessions, with two booster sessions scheduled for delivery one and three months following curriculum completion.

The primary curriculum components include relaxation, cognitive restructuring, attention training, graded exposure to anxiety-provoking situations, and problem-solving, with delivery of the Fun FRIENDS curriculum relying heavily on play-based activities and experiential learning. Each curriculum has an overarching emphasis on peer and family support and includes a parent-training component that attempts to mitigate the adverse effects of parent anxiety on the development of childhood anxiety. Although FRIENDS was modelled after Coping Cat, an individualised cognitive-behavioural treatment programme for childhood anxiety, it has been specifically designed for administration at the group level by either teachers or school-based mental health providers.

Several studies have evaluated the effectiveness of the FRIENDS curricula as either universal, selected or indicated interventions. After separately reviewing studies pertaining to these three levels of intervention, a comparison of their effectiveness, as well as a synthesis of the common themes emerging from the total body of research, will be presented.

Universal applications of FRIENDS for Life

Effectiveness for childhood anxiety

Of the trials examining the effectiveness of universal applications of the child and youth versions of FRIENDS for Life, six used a blocked RCT design with randomisation at the level of schools. Three of these trials found significantly greater post-intervention reductions in child-reported anxiety symptoms among FRIENDS participants versus standard curriculum controls (Barrett and Turner 2001, Lowry-Webster, Barrett et al. 2001, Lock and Barrett 2003).

The effects noted by Lowry-Webster, Barrett et al. (2001) and Lock and Barrett (2003) were maintained for all participants at 12 months (Lowry-Webster, Barrett et al. 2003), for all participants in the child version of FRIENDS for Life at 12, 24, and 36 months (Barrett, Farrell et al. 2006), and for all female participants in both the child and youth versions of FRIENDS for Life at 12 and 24, but not 36, months (Barrett, Farrell et al. 2006). A further two trials comparing child-reported anxiety symptoms for FRIENDS and standard curriculum controls reported similar intervention effects at 6- and/or 12-month follow-up, but not immediately post-intervention (Barrett, Lock et al. 2005, Essau, Conradt et al. 2012). While some of these studies suggest

stronger intervention effects for girls (Lock and Barrett 2003, Barrett, Farrell et al. 2006), others have failed to find significant gender differences (Lowry-Webster, Barrett et al. 2003, Essau, Conradt et al. 2012).

The clinical significance of some of the observed intervention effects was demonstrated in two studies that assessed changes in risk status over time: defining "at-risk" as scoring in the clinical range on the self-report measures of anxiety, Lowry-Webster, Barrett et al. (2003) and Barrett, Farrell et al. (2006) reported a greater percentage of children in the control versus the intervention group progressing to "at-risk" or remaining "at-risk" over time.

In order to control for expectancy and the non-specific effects of intervention, the remaining trial compared child-reported anxiety symptoms immediately post-intervention for FRIENDS and story-reading controls. No intervention effects were found, with children's anxiety symptoms decreasing over time regardless of the condition to which they were assigned (Miller, Laye-Gindhu et al. 2011).

Effectiveness for childhood depression

In contrast to the relative consistency in the observed universal intervention effects on anxiety symptoms, findings with regard to depressive symptoms have been mixed. Barrett and Turner (2001) and Barrett, Lock et al. (2005) found no evidence for FRIENDS-related improvements in child-reported levels of depressive symptoms at post-intervention and at both post-intervention and 12-month follow-up, respectively. However, significantly greater reductions in child-reported depressive symptoms among FRIENDS participants versus controls were observed at post-intervention for highly anxious children (Lowry-Webster, Barrett et al. 2001), at 12-month follow-up for both highly anxious and more typical students (Lowry-Webster, Barrett et al. 2003), at 12-month, but not at post-intervention or 24- or 36-month follow-up, for all students (Lock and Barrett 2003, Barrett, Farrell et al. 2006), and at 6- and 12-month follow-up, but not at post-intervention, for all students (Essau, Conradt et al. 2012).

Generalisability

Since all RCTs except the Germany-based trial of Essau, Conradt et al. (2012) were conducted in Australian settings, replication studies using non-randomised designs have been conducted in other countries. Using pre-post test designs, Stallard, Simpson et al. (2005, 2007, 2008) found statistically and clinically significant post-FRIENDS reductions in levels of self-reported anxiety symptoms among two cohorts of 9-10-year-old children in the UK. These children also reported significant

improvements in self-esteem, with all programme benefits being maintained at 12-month follow-up. Mostert and Loxton (2008) also observed statistically significant post-FRIENDS reductions in self-reported anxiety from pre-test to 4- and 6-month follow-ups among a cohort of socially disadvantaged South African children. Although the anxiety scores of this cohort did not differ significantly at any time point from those of a non-equivalent control group, the study may not have had sufficient power to detect such differences due to the small sample size. In support of the suggestion that FRIENDS for Life is an effective school-based anxiety intervention for socially disadvantaged children, Stopa, Barrett et al. (2010) reported significant post-FRIENDS reductions in anxiety and depressive symptomatology that were maintained at 12-month follow-up among socially disadvantaged Australian children.

Universal applications of Fun FRIENDS

Two studies have examined the effectiveness of universal applications of Fun FRIENDS. The first of these was an Australian-based RCT involving 16 classes from nine preschools that had been randomly allocated to intervention or wait-list control conditions. The programme was delivered by a clinically trained postgraduate psychology student and intervention effects were assessed via parent and teacher reports.

Parent reports of children's anxiety symptoms, behavioural inhibition and social-emotional strength revealed no significant post-intervention differences between intervention and control groups. Teacher reports revealed significantly greater pre- to post-intervention improvements in behavioural inhibition and social-emotional strength among intervention versus control children, with girls in the intervention group experiencing the largest improvements. Twelve-month follow-up data were available solely for the intervention group and revealed significant improvements over time in parent-reported anxiety, behavioural inhibition and social-emotional competence over time, with girls evidencing significantly greater improvements on the latter two measures than boys. Although promising, the positive findings based on teacher reports may not be reliable because: (1) teachers were not blinded to the intervention status of their classes; and (2) baseline scores for teacher-reported behavioural inhibition were significantly different for intervention and control groups. An additional caveat is that the observed improvements in the intervention group over time cannot be attributed to participation in Fun FRIENDS as follow-up data were not collected for the comparison group.

A more recent RCT-based evaluation of Fun FRIENDS has overcome some of these limitations. Fourteen Catholic Education schools in Australia were randomised to one of three groups:

1. Intervention Group (IG; children who received the Fun FRIENDS curriculum).
2. Active Control Group (ACG; children who received the *You Can Do It* CBT-based SEL programme).
3. Waitlist Control Group (WLG; children who received only the standard school curriculum, as per usual).

Teachers were charged with the delivery of both the Fun FRIENDS and *You Can Do It* interventions. However, whereas the teachers charged with the delivery of Fun FRIENDS attended a 1-day intensive training workshop and received ongoing implementation support from a registered clinical psychologist, teachers charged with the delivery of *You Can Do It* received no initial training.

At three time points (pre-intervention, immediately post-intervention, and 12-month follow-up), parents completed standardised measures that served as indicators for social and emotional functioning, behavioural inhibition and behavioural difficulties. Teachers also completed a parallel measure of social and emotional functioning at the same three time points. Although no differences between the three groups were found at 12-month follow-up for behavioural difficulties, the Fun FRIENDS group were reported to improve significantly more than both of the other groups in terms of social and emotional functioning immediately post-intervention and also at 12-month follow-up. Despite the promise of these findings, the study was limited by a considerable amount of missing data and the sample of children was fairly homogeneous in terms of ethnicity and socioeconomic status (predominantly "White" children from middle class families). The evidence supporting Fun FRIENDS is therefore limited at this stage.

Selected and indicated applications of FRIENDS for Life

A total of seven trials examining the effectiveness of selected applications of the child and youth versions of FRIENDS for Life were identified. Of these, five targeted students with elevated anxiety symptoms. The remaining two focused on students of Non-English speaking background (NESB).

Effectiveness for students with elevated anxiety symptoms

Three of the trials targeting students with elevated anxiety symptoms used blocked RCT designs with randomisation at the level of schools. Students recruited from primary schools in Australia (Dadds, Spence et al. 1997, Dadds, Holland et al. 1999), the US (Bernstein, Layne et al. 2005) and Canada (Miller, Laye-Gindhu et al. 2011) were screened for anxiety problems using a combination of self, parent, and teacher-reports and those with elevated symptoms were assigned to intervention or control groups. In contrast to the treatment-as-usual conditions employed by the other two trials, Miller, Laye-Gindhu et al. (2011) assigned the control group to story-reading sessions in order to control for the non-specific effects of intervention (attention control group). Since Dadds and co-workers (1997, 1999) and Bernstein, Layne et al. (2005) included both children with subclinical anxiety symptoms and children with established anxiety disorders, the effectiveness of both selected and indicated applications of FRIENDS could be evaluated.

While Dadds and co-workers (1997, 1999) and Miller, Laye-Gindhu et al. (2011) reported improvements in anxiety symptomatology for both control and intervention groups immediately post-intervention, no significant between-group differences were found. In contrast, using more sensitive outcome measures, Bernstein et al. (2005) found significantly greater post-intervention anxiety improvements for FRIENDS versus control participants. The utility of FRIENDS as an indicated intervention was suggested by the specific finding that significantly more children with anxiety diagnoses in the intervention versus control group had moved to subthreshold diagnostic status at post-intervention.

Follow-up data allowing between-group comparisons over time were only available for the trial conducted by Dadds and co-workers (1997, 1999). Statistically and clinically significant differences emerged at the 6-month follow-up, with 27% and 56% of those in the intervention and control groups, respectively, rated as having a diagnosable anxiety disorder. Supporting the effectiveness of FRIENDS as a selected intervention, a prevention effect was also evident at this time point, with only 16% of children in the intervention group progressing to a diagnosable disorder, compared to 58% in the control group (Dadds, Spence et al. 1997). The relative superiority of the intervention group was again evident at the 24-month follow-up, with participation in FRIENDS being associated with an overall 20% improvement in the control rates of anxiety disorder (Dadds, Holland et al. 1999).

It is difficult to draw meaningful conclusions about the effectiveness of FRIENDS in improving the mental health of school-age children from the remaining two trials

targeting students with elevated anxiety symptoms because between-group comparisons were either not possible (Cooley, Boyd et al. 2004) or not reported (Liddle and Macmillan 2010). This leaves open the possibility that the statistically significant improvements observed in the intervention groups were simply due to natural changes over time or regression towards the mean. The results of these studies nevertheless indicate the feasibility of using FRIENDS in a Scottish setting (Liddle and Macmillan 2010), and with school samples comprising community violence-exposed African American children (Cooley, Boyd et al. 2004).

Effectiveness for students of Non-English speaking background (NESB)

The two trials targeting students of NESB were conducted in Australian settings with primary and secondary school-age students recruited from English-as-a-second-language (ESL) classes. The trial conducted by Barrett, Sonderegger et al. (2003) was essentially a larger replication of that conducted by Barrett, Sonderegger et al. (2001). Both studies used an intervention-wait-list control design. Although randomisation was not specified, control and intervention groups were matched for one or more socio-demographic variables.

Results from both studies revealed that FRIENDS for Life participants exhibited significantly greater self-esteem (primary school-age children only), fewer internalising symptoms, and a less pessimistic future outlook than wait-listed participants immediately post-intervention. Follow-up assessments of a subset of the initial sample in the replication study suggested that the FRIENDS-related improvements were maintained in either primary or both primary and secondary school-age children six months following programme completion (Barrett, Sonderegger et al. 2003).

Although these results are encouraging, ethnic groups differed in their reports of which curriculum elements were most useful (Barrett, Sonderegger et al. 2001) and culture-specific trends in some of the outcomes assessed were apparent (Barrett, Sonderegger et al. 2003). The investigators also expressed concern regarding data reliability because the self-report instruments used in each study may be limited in their cultural sensitivity. Thus, while FRIENDS appears to be a promising intervention for students of NESB, Barrett, Sonderegger et al. (2001) suggest that the programme could be enhanced by the addition of culturally sensitive supplements and the use of culturally sensitive instruments in future evaluations seeking to evaluate programme effectiveness for ethnic minority students.

Potential moderators of programme effectiveness

Level of intervention

A review conducted by Briesch, Hagermoser-Sanetti et al. (2010), which included evaluations of both school- and clinic-based applications of FRIENDS for Life, found the mean effect size across anxiety outcome measures for children diagnosed with anxiety disorders (0.84) to be twice as large as for those children identified as at-risk (0.44) and four times greater than for the general population (0.24)[25]. This suggests that selected and indicated applications may be associated with substantially greater benefits than universal applications in terms of child anxiety.

Timing of intervention

Sub-group analyses conducted as part of some of the studies examining the effectiveness of universal applications of FRIENDS for Life – Child and Youth revealed that intervention effects were stronger for child (age 9-10) versus youth (age 14-16) participants (Lock and Barrett 2003, Barrett, Lock et al. 2005, Barrett, Farrell et al. 2006). This suggests the relative superiority of earlier rather than later intervention.

Group leader characteristics

Although the intended implementers of the FRIENDS for Life curricula are classroom teachers, the vast majority of studies have assessed their impact on child anxiety when delivered by clinically-trained personnel. Comparing these studies to the small number that charged teachers or school providers with implementation, Briesch, Hagermoser-Sanetti et al. (2010) calculated comparatively small mean effects sizes for the latter (0.22 versus 0.56). This suggests a likely drop-off in effectiveness as implementation moves into 'real-world' settings.

Group leader training and supervision

Although the amount of group leader training and supervision is a potential moderator of programme effectiveness, there has been no formal investigation of the

[25] In research, some statistically significant effects are meaningful, yet others are not. Effect sizes give an indication of the magnitude of an observed effect and can be used to determine the practical significance of research findings. There are many effect size indices but all address the magnitude of the difference between groups or the strength of the relationship between variables. The index reported here is Cohen's *d*. For this particular index, 0.2 is considered to equate to a small effect, 0.5 to a medium effect and 0.8 and over to a large effect.

amount of training that group leaders with differing professional experience may require in order to be able to effectively deliver the programme. It appears, however, that the group leaders in many of the studies had access to a level of training and support that may not be currently available in New Zealand[26]. There is therefore the possibility of a substantial drop-off in effectiveness if FRIENDS is implemented under the currently available training regime.

Parent intervention

Although a number of studies reported using the parent-training component, the independent effect of its inclusion has only been assessed in three studies (Bernstein, Layne et al. 2005, Fukushima-Flores and Miller 2011, Essau, Conradt et al. 2012). While some of the measures used in the study conducted by Bernstein et al. (2005) suggested significantly greater improvements in child anxiety for FRIENDS plus parent-training compared with FRIENDS alone, this was not true for all measures. Furthermore, the parent-training component was much more comprehensive than the two 2-hour psychoeducation sessions recommended in the manual. When used in the manual-recommended format, Fukushima-Flores and Miller (2011) and Essau, Conradt et al. (2012) found no evidence to support the hypothesis that children of parents who participated in the programme would experience less anxiety than those of non-participating parents. Given research suggesting that child anxiety interventions including parents should last between 10 and 16 sessions and include components not presented in the programme accompanying FRIENDS (Ginsburg and Schlossberg 2002), more research may be required to optimise the parent-training component.

Programme components responsible for intervention effects

The only study to employ an active control design provided no evidence that FRIENDS for Life - Child is superior to story-reading in terms of reducing anxiety symptoms in the short-term (Miller, Laye-Gindhu et al. 2011). While the longer-term performance of FRIENDS for Life in relation to active control conditions remains to be determined, this study raises the possibility that only a limited component of the CBT curriculum (e.g. attentional control), or perhaps something else entirely (e.g. the group dynamic), is responsible for bringing about the desired outcomes. As with

[26] Lifepaths, the charitable trust currently offering group leader training for the delivery of FRIENDS in New Zealand, offers a 1-day workshop to school personnel and health professionals wishing to implement the FRIENDS for Life curricula. See http://www.friendsforlife.org.nz/training/ for further details.

PRP, establishing the mediators of the effects of FRIENDS is an important task for future research given emerging findings from CBT component analyses suggesting that the behavioural, not cognitive, components of CBT are primarily responsible for its therapeutic gains (Longmore and Worrell 2007).

Study limitations

The data analysis procedures used in many of the studies may not have been appropriate to the study design. Specifically, most of the RCTs selected schools as the unit of random assignment, but treated individual students as the unit of analysis. This means that school-level factors could have contributed to some of the observed differences between control and intervention groups. Although this issue should be addressed in future FRIENDS evaluations, the finding that the positive effects reported by Dadds, Spence et al. (1997) and Barrett, Farrell et al. (2006) were not substantially diminished when school-level factors were taken into account suggests that participation in FRIENDS for Life confers significant student benefits.

All of the studies examining the effectiveness of universal applications of the child and youth versions of the FRIENDS for Life curricula relied on child self-report data. Although the use of self-report measures is the most expedient method for assessing large samples of children in a relatively short timeframe, the accuracy of child self-report data has been questioned. The reported tendency for children with anxiety disorders to provide socially desirable responses (Dadds, Perrin et al. 1998) is a particular concern. Although two of the trials examining the effectiveness of selected and indicated applications of FRIENDS for Life made extensive use of diagnostic data collected by clinicians who were blind to the intervention status of each child (Dadds, Spence et al. 1997, Dadds, Holland et al. 1999, Bernstein, Layne et al. 2005), the positive effects of universal applications may have been overestimated as a result of their reliance on self-report data.

Potential enablers of implementation

Acceptability

A number of studies examined the social validity of the FRIENDS curricula, with both FRIENDS for Life (Barrett, Sonderegger et al. 2001, Lowry-Webster, Barrett et al. 2001, Liddle and Macmillan 2010) and Fun FRIENDS (Pahl and Barrett 2010) receiving positive evaluations from children, parents and teachers alike. Although different cultural groups in the study conducted by Barrett, Sonderegger et al. (2001) differed in their evaluation of which activities were most useful, the data suggested

that all groups enjoyed the FRIENDS for Life curriculum. Although the programme has yet to be evaluated in New Zealand, these findings suggest the acceptability and usability of the programme.

Summary of FRIENDS

FRIENDS is an Australian CBT-based early intervention and prevention programme for childhood anxiety. It is comprised of three manualised, developmentally-tailored curricula: Fun FRIENDS targets children aged 4-7 years; FRIENDS for Life – Child targets children aged 7-12 years; and FRIENDS for Life – Youth targets adolescents aged 12-16 years. Each is delivered over the course of 10 weekly 1-hour sessions, with two booster sessions scheduled for delivery one and three months following curriculum completion.

The studies reviewed here suggest that the child and youth versions of FRIENDS for Life are effective in reducing child anxiety when used as universal, selected and indicated interventions. However, since greater improvements in anxiety are observed with targeted versus general populations, and when clinically-trained rather than school-based personnel are charged with implementation, schools may be best served by contracting mental health providers with CBT expertise to deliver the curricula to small groups of children with elevated anxiety symptoms.

While FRIENDS for Life may be a promising intervention for ethnic minority students, cultural groups varied in their evaluation of which curriculum activities were the most useful. The programme could therefore be enhanced by the development of culturally tailored programme applications or the addition of culturally sensitive supplements. Although some studies have suggested that universal applications of FRIENDS for Life are associated with reductions in child depression, effects regarding this outcome have been mixed and further research is required in order to determine the impact of these curricula on a broader range of child and youth mental health indicators.

Although findings from one study suggest that children who participate in Fun FRIENDS may have better mental health outcomes than those who do not, the evidence supporting this preschool adaptation of the FRIENDS for Life curricula is limited at this stage.

STRONG KIDS

Background

The Strong Kids programmes are a set of semi-scripted, developmentally-sequenced social and emotional learning curricula that were developed in the US (Merrell 2010, Tran and Merrell 2010).

Strong Start consists of two separate 10-lesson curricula: one for preschoolers and one for primary school-aged children (those aged 6-8 years). *Strong Kids* consists of two separate 12-lesson curricula: one for children in grades 3-5 (9-11 years) and one for those in grades 6-8 (11-14 years). *Strong Teens* consists of a single 12-lesson curriculum for children in grades 9-12 (14-18 years). While the curricula share conceptual similarities, they have been individually tailored to ensure that they are developmentally appropriate. They have also been designed in a way that makes them suitable for use as both a universal and selected intervention.

In contrast to programmes that focus on a single psychoeducational approach, the Strong Kids programmes incorporate a number of strategies that have been shown to be effective in producing positive youth development outcomes, including emotional education, CBT, social skills and empathy training, problem-solving, stress reduction and relaxation. The programme developers hypothesised that a brief dose of each of these core strategies would help students to increase their knowledge of healthy social-emotional behaviour, enhance their resilience, and fortify their coping and problem-solving skills.

Effectiveness of Strong Kids

The effectiveness of Strong Kids has been evaluated in several studies, many of which have been written up in unpublished doctoral theses. All existing studies, both published and unpublished, have been reviewed by Merrell (2010).

According to this review, pilot studies using basic pre- and post-test within-group designs or intervention-control group designs with very small sample sizes revealed that participation in the Strong Kids programmes was associated with large and significant gains in students' knowledge of curriculum-related healthy social-emotional behaviour, including effective strategies to cope with adversity and respond to stress in ways that enhance resilience. These studies also revealed meaningful reductions in self-reported internalising symptomatology among some (unspecified) student groups.

Subsequent studies using larger sample sizes, and either intervention-control group designs with randomisation at the level of pre-existing classrooms, or study designs that relied on multiple pre-test baseline probes to help control for history or maturation effects revealed similar findings to the initial pilot studies with respect to large and significant knowledge gains. Some of these studies also revealed meaningful reductions in either self, teacher, or parent-reported internalising symptomatology, but findings with regard to this outcome have not been consistent. Two studies, one conducted in a general education middle school setting and the other in a special education elementary school setting, failed to identify such reductions. Since the failure to document reductions in general education settings may have been due to the vast majority of students having low internalising behaviour scores to begin with, subsequent studies incorporated measures of self- or teacher-reported social-emotional competence. Significant and meaningful gains in these measures have been noted in several studies, including those conducted in general and special education settings.

Effectiveness for ethnic minority students

The Strong Teens programme has been successfully translated into Spanish and adapted for use with recent Latino immigrants. Although a potential preventative effect of this particular adaptation on reducing students' acculturative stress and increasing their sense of school belonging was noted (Merrell 2010), more research on the effectiveness of Strong Kids programme adaptations for ethnic minority children is needed.

Potential enablers of implementation

Programme design

A distinguishing feature of the Strong Kids programmes is that they were not designed in order to produce the largest potential mental health gains (Merrell 2010). While it was important to the developers to create programmes that had at least satisfactory efficacy or potency, their primary aim, formulated in response to research suggesting that interventions that are expensive, time-consuming, and difficult to implement are much less likely to be used in the 'real-world' of schools (Merrell and Buchanan 2006), was to maximise the reach, adoption and implementation of Strong Kids. The curricula are therefore designed to be low-cost, low-intensity, time-limited interventions that incorporate only those instructional and skill-training components that are considered to be absolutely necessary for producing important changes in affect, cognition and behaviour. They have also

been designed in a way that makes them easy for a broad sector of professionals to teach and monitor with a minimum amount of training.

Ease of delivery and perceived utility

A number of studies have examined ease of delivery and perceived utility by assessing treatment fidelity (adherence to the structured curriculum outlines) and the degree to which curriculum implementers and students see the programme as something that meets their needs in ways that encourage them to continue using or participating in it. High scores for each of these variables have been obtained in every study in which they were evaluated, with teachers and group leaders consistently reporting that the brief, easy-to-use, and time-limited aspect of Strong Kids is one of the programme's most appealing features (Merrell 2010, Tran and Merrell 2010).

Summary of Strong Kids

The Strong Kids programmes are a set of semi-scripted, developmentally-sequenced social and emotional learning curricula for children at every stage of schooling. There are five curricula in total, each of which targets a specific age group and comprises 10-12 lessons that incorporate a number of strategies that have been shown to be effective in producing positive youth development outcomes. Developed in the US with the primary aim of maximising reach, adoption and implementation, these curricula were specifically designed to be low-cost, low-intensity and time-limited interventions.

Fifteen separate studies have found some evidence of significant and meaningful outcomes related to participation in the Strong Kids programmes. These include significant gains in students' knowledge of healthy social-emotional behaviour, reductions in students' internalising symptomatology, increases in students' social-emotional competence, and high levels of treatment fidelity and social validity. Despite these promising findings, there is a lack of longer-term follow-up data and the rigour of the randomised studies supporting Strong Kids is compromised by classroom-level randomisation that leaves open the possibility that interactions among and pre-existing differences between participants in the intervention and control groups contributed to the outcomes observed.

Methodological limitations aside, it is not clear whether Strong Kids represents a truly empirically-grounded approach to fostering the resilience of young people. Although the curricula draw on a variety of approaches that have been shown to enhance the wellbeing of children and young people, the active components of many

of these approaches may not have been elucidated at the time of programme development. Of particular relevance to this concern is the previously cited research suggesting that the behavioural, not cognitive, components of CBT are primarily responsible for its therapeutic effects. There is therefore a risk that less helpful components have been included at the expense of those which are primarily responsible for positive outcomes.

Thus, although Strong Kids may be a promising low-cost option for school districts seeking to implement reasonably comprehensive competence-building programmes, more research is required to corroborate and extend existing research findings.

MINDFULNESS-BASED PROGRAMMES

Background

Mindfulness has been variously referred to as a practice, a psychological process, and an outcome in and of itself (Block-Lerner, Holston et al. 2008). For the purposes of this report, mindfulness can be understood as the practice of: (1) intentionally focusing and sustaining attention on immediate experience; and (2) adopting a curious, open and accepting orientation towards that experience. Skilful engagement in this practice is reported to facilitate discrimination between perception and response, thereby promoting the emergence of less reactive and more skilful responses to mental and physiological processes that contribute to emotional distress and maladaptive behaviour (Kabat-Zinn 2003, Bishop, Lau et al. 2004, Shapiro, Carlson et al. 2006).

The capacity to evoke mindfulness can be developed using a variety of training methods. Although these methods have historical roots in a variety of contemplative and philosophical traditions, they are increasingly being used in the West in the absence of recourse to such traditions because of the numerous health benefits that regular mindfulness practice has been reported to confer (Melbourne Academic Mindfulness Interest Group 2006). In terms of mental health, a large and expanding body of research with adult populations suggests that mindfulness training alleviates depression and anxiety, reduces stress and suicide risk, promotes psychological wellbeing, and improves brain function (Baer 2003, Grossman, Niemann et al. 2004, Greeson 2009, Luoma and Villatte 2012). There is consequently a growing interest in using mindfulness training to foster the resilience of children and young people.

While a number of mindfulness-based programmes for children and young people have been developed, current research evaluating their effectiveness is limited. The studies that do exist have largely been exploratory in nature, with many using

uncontrolled pre- and post-test designs. While some studies have used more rigorous experimental designs, their findings are tentative at this stage due to a number of methodological limitations. Since both types of study have been the subject of a number of recent reviews (Burke 2010, Greenberg and Harris 2012, Meiklejohn, Phillips et al. 2012, Mental Health Foundation of New Zealand 2012), this review will focus primarily on the more rigorous studies. Although yoga can be practiced with an orientation towards the cultivation of mindfulness, not all yoga interventions emphasise the quality of attention that is central to mindfulness practice. Interventions focusing primarily on yoga instruction were therefore not included.

Overview of programmes

In general, mindfulness-based programmes for children and young people integrate social and emotional learning with mindfulness practice. The latter consists of age-appropriate activities designed to heighten children's non-judgemental awareness of interoceptive, exteroceptive and proprioceptive sensations[27], mental processes, and their relationships to people, places and things. Many of the programmes have been influenced by the well-established mindfulness-based stress reduction programme (MBSR; Kabat-Zinn 1990). Some have also been influenced by other empirically-supported mindfulness-based therapies, including dialectical behaviour therapy (DBT; Linehan, Comtois et al. 2006), acceptance and commitment therapy (ACT; Hayes, Strosahl et al. 1999), mindfulness-based cognitive therapy (MBCT; Teasdale, Segal et al. 2000), and mindfulness-based training for OCD (Schwartz and Begley 2002). Although programme duration and intensity vary, the curricula are generally presented in a series of 8-10 weekly or bi-weekly 1-2-hour sessions (see Meiklejohn, Phillips et al. 2012 for programme descriptions).

Effectiveness of programmes

Studies evaluating the effectiveness of mindfulness-based programmes have used samples of children and young people drawn from both school and clinical settings. Since the latter provide valuable information about the likely effectiveness of

[27] Interoceptive sensations are those that convey information about the physiological condition of the body, including sensations related to organ function, hunger, thirst, the need for digestive elimination and muscle tension. Exteroceptive sensations are those that convey information about the external environment, including visual, auditory, tactile, olfactory and gustatory sensations. Proprioceptive sensations are those that convey information about the body's spatial orientation, including sensations related to balance, limb and joint position, and movement.

targeted school-based programmes, findings from both types of study will be summarised.

Uncontrolled studies

Uncontrolled pre- and post-test studies using small samples of either primary and middle school-aged children in general education settings or secondary school-aged children in clinical or special education settings have reported post-programme improvements in attention, sleep, working memory, subjective wellbeing, physical health, self-care and interpersonal relationships, and reductions in reactivity, perceived stress, anxiety, depressive symptoms, attention-deficit hyperactivity disorder symptoms, worry and hostility. While offering some indication that mindfulness training with children and young people is feasible and potentially helpful, the uncontrolled nature of these exploratory studies precludes attribution of the observed effects to mindfulness training.

Quasi-experimental studies

Quasi-experimental studies using pre-post test designs and methods other than randomisation to assign students to intervention and control groups have also yielded promising findings. In their preliminary evaluation of an earlier version of what has come to be known as the MindUp programme, Schonert-Reichl and Lawlor (2010) compared outcomes for a total of 246 grade 4-7 students drawn from 6 intervention and 6 control classrooms in an urban school district in Canada. Compared to controls, students exposed to the mindfulness programme evidenced significantly greater pre- to post-test improvements in self-reported optimism and teacher-reported social-emotional competence, with a large overall effect size (0.273) noted for the latter[28].

Broderick and Metz (2009), who conducted a pilot trial of the Learning to BREATHE programme in a private girls' high school in the US, also highlighted the potential benefits of school-based mindfulness training. Compared with the 17 juniors who served as controls, the 105 seniors who participated in the programme and completed both pre- and post-test assessments demonstrated significant reductions in self-reported negative affect and significant increases in feelings of calmness, relaxation and self-acceptance. Significant pre- to post-test improvements in emotion

[28] The effect size index used in this study was Partial Eta Squared. For this particular index, effect sizes ranging from 0.059 to 0.137 are considered moderate, and those greater than 0.137 are considered large.

regulation, tiredness, aches and pains were also observed among programme participants. As with all studies that use non-random methods to assign participants to control and intervention groups, the overarching threat to the validity of the findings from these two studies is the potential for factors other than exposure to the intervention to have contributed to the observed effects.

Randomised controlled studies

A small number of randomised controlled studies have assessed the potential benefits of mindfulness training for children and young people. Of these, three have used non-clinical samples of children and young people drawn from school or recreational settings, and two have used samples of children and young people drawn from clinical settings.

Studies using non-clinical samples

In a study conducted by Napoli, Rock Krech et al. (2005), a total of 228 first- to third-grade students from nine classrooms in two US-based elementary schools were randomly assigned to participate in either the 12-session Attention Academy Program (AAP; intervention group) or 12 sessions of unstructured quiet activities (control group). Analysis of the data from the 194 students who missed no more than a single intervention or control session revealed that, compared to controls, AAP participants exhibited significantly greater post-intervention improvements in self-reported test anxiety, teacher-reported attention and social skills, and objective measures of selective, but not sustained, attention. Reported effect sizes ranged from small to medium (0.39-0.60)[29].

In a similar manner, Flook, Smalley et al. (2010) examined the effect of participation in the 8-week Inner Kids Program (IKP) on students' executive functioning (EF; an umbrella term for a set of cognitive processes that are involved in planning and carrying out regulated, goal-directed activity). A total of 64 ethnically diverse second- and third-grade children from four classrooms at an on-campus university elementary school in the US were randomised to IKP or a silent reading control group. Although no main effects of IKP on teacher or parent reports of EF were found, there was a significant moderating effect of baseline EF, such that those children in the intervention group who were rated as having poorer initial EF showed significant EF improvements when compared to their counterparts in the control group. These pilot data therefore suggest that school-based mindfulness

[29] The effect size index used in this study was Cohen's *d*. See footnote 20 for interpretation.

practice could be particularly beneficial for children with executive functioning difficulties.

In the smallest of the RCTs conducted to date, Liehr and Diaz (2010) recruited children (average age 9.5 ± 1.6 years) from a summer camp in the US in order to evaluate the effects of a programme designed by Mindful Schools on symptoms of depression and anxiety. A total of 18 'minority' children were randomly assigned to the Mindful Schools programme (MS) or health education classes (HE) and self-report measures were used to collect pre- and post-intervention symptom data. Compared to HE controls, MS participants reported significantly lower levels of depressive symptoms over time. Although between-group differences for anxiety symptoms were not significant, descriptive data suggested that MS participants experienced greater improvements than HE controls. While it is impossible to draw conclusions about programme effectiveness from such a small and methodologically compromised study, these pilot data certainly provide a stronger rationale for conducting larger and more rigorous trials of the Mindful Schools programme.

Studies using clinical samples

Semple, Lee et al. (2009) used a cross-lagged RCT design to evaluate the effects of MBCT for children (MBCT-C), a 12-week group intervention adapted from the empirically-supported adult MBCT programme, on measures of attention, anxiety and problem behaviour. Twenty-five inner city children aged 9 to 13 who were enrolled in a clinic-based remedial reading tutoring programme were randomised to MBCT-C or a wait-list control group. Following programme completion, the wait-list controls participated in MBCT-C, thereby providing a second (uncontrolled) trial of the programme. Although no significant between-group differences were found on any measure at the end of the controlled phase of the trial, pooled pre- and post-test data for all study participants revealed significant reductions in parent-reported attention and behaviour problems over time. That the reductions in attention problems were specifically related to participation in MBCT-C was suggested by the finding that significant between-group differences were found with respect to timing, with reductions among initially wait-listed participants occurring only following their participation in the programme. Sub-group analyses of pooled pre- and post-test data for study completers further revealed clinically relevant reductions in anxiety for the six children who initially reported experiencing greater levels of anxiety.

The most rigorous of all the evaluations of mindfulness-based programmes for children and young people conducted to date is the RCT of MBSR for Teens (MBSR-

T) conducted by Biegel, Brown et al. (2009). A total of 102 adolescents (14-18 years of age) who were under current or recent psychiatric outpatient care at a US-based clinical facility were randomised to receive MBSR-T plus usual care or usual care only. Compared to usual care controls, MBSR-T participants showed significant improvements over time on self-report measures of perceived stress, anxiety, self-esteem and several indicators of psychopathology. Assessments made by clinicians blind to intervention status also revealed significant mental health gains over time for MBSR-T versus control participants, with the former being much more likely to show diagnostic improvement over the course of the study. Beneficial effects were apparent at both immediate post-test and 3-month follow up, with the majority of effect sizes for the latter time point falling in the moderate to large range (0.28 to 0.92)[30]. Taken together, these results suggest that MBSR-T may be beneficial as an adjunct to outpatient mental health treatment for adolescents with heterogeneous mental health diagnoses.

Effectiveness for ethnic minority students

The studies conducted by Biegel, Brown et al. (2009), Semple, Lee et al. (2009), Flook, Smalley et al. (2010), Liehr and Diaz (2010) and Schonert-Reichl and Lawlor (2010) have included sizable proportions of ethnic minority students. However, since these evaluations have not examined the moderating impact of ethnicity on programme effectiveness, it is not possible to use them to assess whether ethnic minority students benefitted from programme participation.

A more useful study in this regard is that conducted by Mendelson, Greenberg et al. (2010). These investigators used a randomised controlled study design to assess the impact of a mindfulness and yoga intervention, which was delivered by group leaders of similar ethnic background to the programme participants, on the involuntary stress responses and mental health outcomes of a school sample predominantly comprised of socially disadvantaged ethnic minority students. Analysis of responses to self-report measures administered at baseline and immediately following the 12-week intervention revealed statistically significant improvements in a number of involuntary stress reactions, including rumination, intrusive thoughts and emotional arousal. Although significant differences on measures of mood or relationships with peers and teachers were not observed for the control and intervention groups, the pattern of scores for the mood variables was suggestive of an improvement for the latter. These preliminary findings suggest that

[30] The effect size index used in this study was Cohen's d. See footnote 20 for interpretation.

mindfulness-based interventions delivered by group leaders of similar ethnic background to the programme participants may hold promise for ethnic minority students.

Potential moderators of programme effectiveness

Group leader characteristics

Since mindfulness is widely regarded as being best taught by those who are routinely practicing it in their daily lives (Kabat-Zinn 2003, Meiklejohn, Phillips et al. 2012), the vast majority of studies have assessed the impact of programmes that have been facilitated by highly experienced mindfulness practitioners and teachers. It is therefore not yet clear how effective mindfulness-based programmes might be when facilitated by teachers with less experience of, and commitment to, mindfulness practice.

Commitment to mindfulness practice

In their controlled trial of a modified MBSR programme in two private boys' high schools in the UK, Hupert and Johnson (2010) found no overall effects of programme participation, but did find a significant positive association between the amount of individual practice undertaken outside the classroom and improvement in psychological wellbeing. Biegel, Brown et al. (2009) similarly found that the number of self- and clinician-reported improvements over the course of the MBSR-T study was positively related to the amount of mindfulness practice participants reported having undertaken at-home. These findings suggest that positive outcomes may be contingent on students having, or the programme engendering, substantial commitment to individual mindfulness practice.

Study limitations

The findings of the studies reviewed here are certainly encouraging. Overall, they point to a number of potential benefits of mindfulness-based programmes for children and young people, including reduced stress, improved mental health and enhanced cognitive abilities. However, despite the promise of their findings, most of the studies have methodological limitations that preclude attribution of the effects observed to programme participation, or generalisation of the findings beyond the study context.

For the more rigorous studies alone, these limitations include: small sample sizes (Semple, Lee et al. 2009, Flook, Smalley et al. 2010, Liehr and Diaz 2010, Mendelson,

Greenberg et al. 2010); the reliance on self-report or non-blind third party measures (Napoli, Rock Krech et al. 2005, Broderick and Metz 2009, Semple, Lee et al. 2009, Liehr and Diaz 2010, Mendelson, Greenberg et al. 2010, Schonert-Reichl and Lawlor 2010); the absence of longer-term follow-up data (Napoli, Rock Krech et al. 2005, Broderick and Metz 2009, Flook, Smalley et al. 2010, Liehr and Diaz 2010, Mendelson, Greenberg et al. 2010, Schonert-Reichl and Lawlor 2010); less stringent approaches to data analysis, including failure to conduct intention-to-treat analyses (Napoli, Rock Krech et al. 2005, Mendelson, Greenberg et al. 2010) and the failure account for multiple comparisons and/or the clustered nature of the data (Napoli, Rock Krech et al. 2005, Biegel, Brown et al. 2009, Broderick and Metz 2009, Semple, Lee et al. 2009, Flook, Smalley et al. 2010, Liehr and Diaz 2010, Mendelson, Greenberg et al. 2010); and the use of samples that are likely to be unrepresentative of the wider population of schoolchildren in a given school district (Napoli, Rock Krech et al. 2005, Biegel, Brown et al. 2009, Broderick and Metz 2009, Semple, Lee et al. 2009, Flook, Smalley et al. 2010, Liehr and Diaz 2010).

The varied content of the programmes, including the frequent inclusion of practices that are primarily aimed at the cultivation of qualities that may or may not assist the development of the capacity to be mindful, and the lack of active control groups also make it difficult to attribute the effects observed to mindfulness training *per se*.

Cultural considerations

Although people from diverse cultural backgrounds and religious persuasions have used a variety of practices to evoke mindfulness throughout the ages (Melbourne Academic Mindfulness Interest Group 2006), the practices commonly taught in the majority of secular mindfulness-based programmes have their origins in Buddhism (Baer and Huss 2008). While such practices may be acceptable and beneficial to many students, there is a need to develop appropriate cultural discourse regarding how these practices are delivered. There may also be a need for expanding the repertoire of formally taught practices in order to ensure that the forms used for cultivating mindfulness are relevant and meaningful to culturally and linguistically diverse communities. Given widespread concern about the cultural colonisation of indigenous people, this issue is of particular relevance when considering how the capacity to evoke mindfulness might be most appropriately taught to Māori students. More research into how mindfulness practices can be delivered and/or adapted in order to meet the needs of students from diverse cultural and religious backgrounds is clearly needed.

Potential barriers to implementation

Potential for iatrogenic effects

Contemplative practices require adaptation for use with children and there is a need to identify what constitutes 'age-appropriate' practice for children at various stages of development (Hooker and Fodor 2008, Roeser and Peck 2009). Although several of the studies reviewed here provide descriptions of the programme adaptations that were made in order to meet the age-related needs of younger participants, there has been no systematic study of how the capacity to evoke mindfulness can be optimally nurtured during development.

The question of how best to adapt contemplative practices is especially relevant when considering distressed children and young people. It is not uncommon for those new to mindfulness training to initially report feeling more anxious after engaging in mindfulness practices. A popular explanation for this phenomenon is that people are simply unaccustomed to paying attention to themselves (Kabat-Zinn 1990, Hooker and Fodor 2008). The underlying assumption is that the phenomenon will cease to arise once people get used to being with their experience. While this may be true, those experiencing high levels of distress may initially require additional support or very specific types of practice in order to be able to safely experience difficult states of mind and body (Germer 2005).

In the absence of guidelines for how to keep all students safe, teachers of mindfulness in schools will need to be attuned to the experience and needs of individual students and to have a flexible and nuanced approach to the teaching of mindfulness practice.

Current capacity of teachers to deliver mindfulness programmes

Although a number of mindfulness training programmes for teachers have been developed (Meiklejohn, Phillips et al. 2012), it is not yet clear how much mindfulness experience a teacher would need in order to be able to successfully teach mindfulness practices to students. Since a teacher is more likely to be successful in this endeavour when they are able to embody mindfulness in everyday classroom actions and instructional strategies, training may take longer and require a great deal more personal commitment than other forms of professional development. There are therefore practical issues related to the implementation of school-based mindfulness programmes, including the immediate availability of experienced external facilitators

and the longer-term provision of funding for professional development in mindfulness practice.

Summary of mindfulness-based programmes

The existing research suggests that that mindfulness-based programmes for children and young people hold promise as school-based interventions for enhancing the mental wellbeing of students. Preliminary findings have highlighted a number of potential benefits of programme participation, including reduced stress, improved mental health and enhanced cognitive abilities. However, research in this area is in its infancy and many of the existing studies have methodological limitations that temper the conclusions that can be drawn about programme effectiveness. Even the findings of the most methodologically rigorous study yield little information about the likely effectiveness of school-based programmes because they are based on the experience of a clinical sample of young people drawn from a psychiatric outpatient facility.

In addition to methodological limitations, the existing research has not yet addressed questions regarding what constitutes age-appropriate mindfulness practice for children at different stages of development, or how to further adapt these practices to ensure that they are appropriate for children from diverse cultural backgrounds and safe for those experiencing high levels of distress. There are also practical issues regarding programme implementation, including the challenges of finding external facilitators with sufficient mindfulness experience in the short term, and providing teachers with funding for professional development in mindfulness practice in the long term.

Despite the many unanswered questions and practical challenges, the secularisation of mindfulness training in the West is revolutionising the practice of mental health and it would be a shame to pass up the opportunity to expose schoolchildren to its potential benefits. To reconcile the somewhat conflicting demands of exposure and safety, the wisest approach at present may be to follow the Mental Health Foundation's recommendation to focus on building a local body of evidence by implementing pilot programmes and subjecting them to rigorous evaluations (Mental Health Foundation of New Zealand 2012)[31].

[31] The Mental Health Foundation has developed a school-based mindfulness programme for primary school children aged 6-10 years. In conjunction with researchers at AUT University's School of Education, this programme is currently being trialled and evaluated in Auckland. Preliminary results from this trail are expected to be available at the end of the year (Rix, G., personal communication).

4.5. CONCLUSIONS FOR RESILIENCE-BUILDING PROGRAMMES

LIMITATIONS

Although the programmes reviewed in this section have been presented as resilience-building programmes, there are a number of limitations to the conclusions that can be drawn about their effectiveness in relation to their capacity to promote the psychological resilience of students.

Firstly, all evaluations have assessed programme impact by measuring developmental outcomes that can only be considered as proxy indicators of the more complex attribute of psychological resilience. They have therefore not necessarily been proven to produce more psychologically resilient students. Secondly, a large variety of developmental outcomes, including individual-level competencies that foster psychological resilience and symptoms that are perhaps indicative of reduced resilience, have been measured. This makes it difficult to make direct comparisons between programmes. Thirdly, since the relationship of many of these outcomes to the specific attribute of psychological resilience to suicide has not yet been elucidated, the likely contribution of these programmes to the broader aim of preventing student suicide is presently unclear. Despite these limitations, some useful conclusions can be drawn.

MOST PROMISING PROGRAMMES

The most promising programmes to emerge from this analysis are grade-level PATHS, Zippy's Friends, PRP and the FRIENDS for Life curricula. Although research on school-based mindfulness programmes is at an early stage and no single such programme can be recommended due to a number of them having been developed and trialled, mindfulness-based programmes as a general approach also show promise. Each of these promising programmes has their own unique strengths and limitations and differ in the extent to which they have addressed issues salient to ethnic minority students. Their key features with respect to these issues are summarised in Table A2.

GRADE-LEVEL PATHS VERSUS ZIPPY'S FRIENDS

Grade-level PATHS and Zippy's Friends exclusively target primary school-aged children, which is advantageous in view of the greater potential benefits arising from intervening earlier rather than later in children's school experience. Participation in either programme appears to be associated with improvements in social-emotional

competence and reductions in various problem behaviours. The research supporting grade-level PATHS, however, is arguably more rigorous than that supporting Zippy's Friends, with beneficial intervention effects having been demonstrated for larger and more ethnically diverse samples of children over longer periods of time.

Three programming features also suggest that grade-level PATHS is likely to be associated with greater long-term benefits than Zippy's Friends:

1. Whereas Zippy's Friends solely targets children aged 6-7 years, grade-level PATHS is a comprehensive, developmentally-sequenced programme that comprises separate volumes of lessons for children in grades 1-5.

2. Whereas Zippy's Friends positions individual children as the primary agents of change, grade-level PATHS recognises the importance of emotional learning in the context of meaningful relationships by emphasising use of teaching strategies that optimise the quality of teacher-child and peer-peer interactions.

3. Whereas the development of Zippy's Friends was based on the findings of research in a single area, grade-level PATHS programming represents an integration of theory and research from a variety of different fields.

The only advantage that Zippy's Friends is likely to present over grade-level PATHS is the relative ease with which the programme can be implemented and delivered.

PRP VERSUS FRIENDS FOR LIFE

In contrast to these generic competence-building programmes for very young children, PRP and FRIENDS are CBT-based approaches that include curricula designed to prevent specific symptoms in older children. The research reviewed here suggests that the single PRP curriculum targeting children aged 10-14, and the FRIENDS curricula targeting children aged 7-12 and 12-16, are effective in reducing symptoms of depression and anxiety, respectively. These effects are largest when the curricula are delivered as selected interventions, and when those charged with implementation have either undergone clinical training or have received extensive training and support from the clinically-trained programme developers. These findings highlight the necessity for intended group leaders to receive comprehensive training and supervision from the programme developers or experts familiar with these interventions, and suggest that schools may be best served by delivering the curricula to small groups of at-risk children. Since the practice of CBT is continuously

being refined as new research emerges, it would be ideal if group leaders had CBT expertise.

It is unclear which of these programmes would be more effective in terms of suicide prevention. Major depressive disorder (MDD) was the mental disorder most strongly associated with suicidal behaviour among adults in the *New Zealand Mental Health Survey* (Beautrais 2006). Although risk factors may vary according to age, this suggests that programmes with proven ability to prevent MDD would be particularly beneficial. Although there is some evidence to suggest that PRP's effects on depressive symptoms may translate into the prevention of depressive disorders, more research is needed to explore this possibility as most school-based PRP studies have not assessed diagnostic outcomes. It is also worth bearing in mind that, even though the relationship is not as strong as that for MDD, anxiety disorders are also associated with suicidal behaviour. Since there is already evidence to suggest that the effect of selected school-based applications of FRIENDS on anxiety symptoms translate into the prevention of anxiety disorders, FRIENDS might also be expected to be beneficial in terms of suicide prevention. Whatever the promise of either PRP or FRIENDS may be, it is important to bear in mind that young people may face problems that might not be amenable to resolution by the problem-solving techniques and coping skills featured in these curricula.

MINDFULNESS-BASED PROGRAMMES

The existing evaluations of mindfulness-based programmes point to a number of potential benefits for children and young people, including reduced stress, improved mental health and enhanced cognitive abilities. Although these evaluations have a number of methodological limitations, and there are both practical challenges regarding the implementation of mindfulness-based programmes and uncertainties regarding the appropriateness of various mindfulness practices for children and young people, it would be a shame for schools to miss out on the opportunity to expose children to training that is revolutionising the practice of mental health in the West. The wisest approach at present may be for educators with mindfulness experience to review the content of existing school-based mindfulness programmes and make recommendations regarding which would be the most suitable for trialling in New Zealand schools.

SDM-PSP, TRAVELLERS AND STRONG KIDS

There is currently insufficient high quality research to support the recommendation of SDM-PSP or Travellers. Although these programmes may well be effective, this

needs to be proven by a larger body of rigorous research. The research supporting Strong Kids is of a better quality. However, there are uncertainties regarding the validity of the method that was used to develop the programme, and an absence of longer-term follow-up data. These considerations suggest that it would be prudent to wait for further research on SDM-PSP, Travellers and Strong Kids before considering their implementation in New Zealand.

SUMMARY OF CONCLUSIONS FOR RESILIENCE-BUILDING PROGRAMMES

Overall, this analysis suggests that the resilience of school children could be fostered throughout their school experience by delivering grade-level PATHS to primary school-aged children, PRP or FRIENDS for Life to at-risk intermediate and/or secondary school-aged children, and exposing children of all school ages to developmentally and culturally appropriate mindfulness practice. Since grade-level PATHS, PRP, FRIENDS for Life and most of the mindfulness-based programmes have been developed outside of New Zealand, the successful implementation of these programmes is likely to require funding to finance in-person and/or online support from the programme developers.

Table A2. Characteristics of the most promising general resilience-building programmes

Programme	Description	Evidence for effectiveness	Impact of potential moderators on effectiveness	Strengths	Limitations	Issues for ethnic minority and indigenous students
Zippy's Friends	Universal mental health promotion programme comprising 24 weekly one-hour sessions that use story-based learning to expand the range of effective coping skills for children aged 6-7.	Improves children's emotional literacy, social competence and coping abilities. Reduces problem behaviours such as hyperactivity, internalising behaviour and externalising behaviour. Improvements in coping abilities may persist throughout the year following programme delivery.	Greater perceptions of programme effectiveness in less socially disadvantaged schools.	Manualised. Minimal training (1-2 days) required for teachers to deliver the curriculum. Positive programmatic effects have been replicated in diverse locations and populations.	Does not allow children to build on their learning outside of the classroom or in later school years. One study found some evidence of some unintended negative programmatic effects.	Effectiveness for ethnic minority students could not be assessed as most studies did not report ethnicity of participants. No discussion of cultural biases and assumptions that may be present in this particular approach to intervention.
Grade-level PATHS	Universal social and emotional learning programme designed to be delivered 2-3 times per week to primary schoolchildren in grades 1-5.	Improves children's social-emotional competence and neurocognitive functioning. Reduces internalising and externalising behaviours. Improves classroom atmosphere. Observed improvements may persist for at least 2 years.	Positive intervention effects are stronger and more robust in less socially disadvantaged schools. Positive intervention effects are associated with high levels of administrative support and skilled use of the curriculum by classroom teachers. Extent of teacher training and supervision required for effective programme delivery is not yet known but has the potential to moderate programme effectiveness.	Manualised. Comprehensive and developmentally sequenced. Strong empirical and theoretical grounding. Includes daily activities that encourage the generalisation of skills to everyday situations. Recognises importance of learning within the context of meaningful relationships. Positive programmatic effects observed in US have been replicated in three European countries.	Teachers may require more training and supervision to deliver grade-level PATHS than Zippy's Friends. As a comprehensive programme, implementation may require substantial commitment to the goal of enhancing students' emotional wellbeing.	Most studies used ethnically diverse samples of students but ethnicity was not examined as a potential moderator of programme effectiveness. No discussion of cultural biases and assumptions that may be present in this particular approach to intervention.

Table A2. Characteristics of the most promising general resilience-building programmes

Programme	Description	Evidence for effectiveness	Impact of potential moderators on effectiveness	Strengths	Limitations	Issues for ethnic minority and indigenous students
PRP	Cognitive-behavioural intervention comprising twelve 90- to 120- minute group sessions designed to enhance resilience and prevent symptoms of depression in children aged 10-14.	Reduces depressive symptoms among both boys and girls throughout 12 months of follow-up. May also reduce anxiety symptoms and externalising behaviour but research in this area is limited. Not yet known whether effects on depressive symptoms translate into prevention of depressive disorders.	Effects on depressive symptoms tend to be larger when PRP is delivered as a selected rather than a universal intervention and when group leaders are PRP programme developers rather than community providers. May be particularly beneficial for adolescents with average and above-average levels of hopelessness. No added benefit of parent-training component.	Manualised. Time-limited. Grounded in the wider field of CBT theory and practice. Supported by a large amount of randomised research. PRP developers and research team offer rigorous group leader training and supervision	May be a drop-off in effectiveness of community provider-led PRP as training and supervision contact with the PRP research team diminishes. Only supported as an effective intervention for the prevention of depressive symptoms.	Programme developers have examined the cultural biases and assumptions inherent in the approach to intervention and have created culture-specific PRP applications. Participation in culture-specific PRP applications reduced depressive symptoms among some populations of low-income ethnic minority children living in the US.
FRIENDS for Life	Cognitive-behavioural intervention for childhood anxiety comprising separate 10-session curricula for children aged 7-12 (FRIENDS for Life – Child), and adolescents aged 12-16 (FRIENDS for Life – Youth).	Participation in either curricula reduces anxiety symptoms among both boys and girls throughout at least 12 months of follow-up. Effects of selected curriculum applications on anxiety symptoms may translate into the prevention of anxiety disorders. Effects on depressive symptoms unclear.	Effects on anxiety symptoms tend to be larger when curricula are delivered as selected rather than universal interventions and when group leaders are clinically-trained interventionists rather than school-based personnel. Effects may be stronger for Child versus Youth participants. No added benefit of parent-training component.	Manualised. Developmentally sequenced programme but time-limited curricula. Grounded in the wider field of CBT theory and practice. Supported by a large amount of randomised research.	Group leader training currently on offer in New Zealand may not be adequate for achieving beneficial intervention effects. Only supported as an effective intervention for the prevention of anxiety symptoms and disorders.	Programme developers have some degree of awareness of the cultural biases and assumptions inherent in the approach to intervention but have yet to create culture-specific FRIENDS for Life applications. Some positive programmatic impacts have been observed with students of Non-English speaking background but ethnic groups differ in their reports of which curriculum elements they found most useful.

Table A2. Characteristics of the most promising general resilience-building programmes

Programme	Description	Evidence for effectiveness	Impact of potential moderators on effectiveness	Strengths	Limitations	Issues for ethnic minority and indigenous students
Mindfulness-based programmes	A variety of programmes that integrate social and emotional learning with mindfulness practice for children at various stages of their school experience.	A wide variety of benefits associated with programme participation have been reported, including: improvements in executive functioning, emotional regulation, self-esteem and social-emotional competence; reductions in perceived stress, attention and behaviour problems, and anxiety and depressive symptoms; and increases in feelings of calmness, relaxation and self-acceptance.	Improvements in student wellbeing are positively related to the amount of mindfulness practice undertaken outside the classroom. Extent of group leader experience of mindfulness practice is anticipated to moderate programme effectiveness.	Grounded in the wider field of mindfulness theory and practice.	Research has yet to identify what constitutes age-appropriate mindfulness practice for children at various stages of development. Effect of programmes when delivered by standard classroom teachers is unknown as most studies have assessed the impact of programmes that have been facilitated by highly experienced mindfulness practitioners and teachers. Teacher-training in mindfulness may take longer and require a great deal more personal commitment than other forms of professional development.	Most studies used ethnically diverse samples of students but ethnicity was not examined as a potential moderator of programme effectiveness. One study conducted on a sample comprising predominantly ethnic minority students reported beneficial impacts on students' involuntary stress reactions. Research has yet to identify what constitutes appropriate mindfulness discourse and practice for children from diverse cultural and religious backgrounds.

5. OVERALL CONCLUSIONS

5.1. SYNERGY BETWEEN CATEGORICAL AND GENERAL PROGRAMMES

The two broad classes of programme reviewed for this report – categorical and general programmes – are complementary in terms of suicide prevention. General programmes aimed at building individual-level, resilience-related competencies promote the use of coping skills that may ultimately mitigate the emergence of acute states of distress. However, building such competencies may take a considerable amount of time and it is unlikely that exposure to social and emotional learning curricula will be sufficient to address the many complex mediators of suicidal behaviour. There will thus be an ongoing need for categorical programmes aimed at preparing schools to identify and respond effectively to suicidal and potentially suicidal students.

5.2. MOST PROMISING PROGRAMMES

The most promising social and emotional learning curricula to emerge from this analysis are grade-level PATHS, PRP, FRIENDS for Life – Child and Youth, and mindfulness-based programmes. Since these programmes target different developmental stages, there is the potential to provide skills training to children throughout their entire school experience. The most promising categorical programme in terms of both potential effectiveness and safety is gatekeeper training for adult members of the school community. While such training is unlikely to be effective as a standalone measure, it could serve a vital role as part of a broad and multifaceted suicide prevention strategy that also includes interventions and programme modifications aimed at overcoming some of the known structural and individual barriers to seeking and receiving follow-up support. Since most of these programmes have been evaluated in overseas contexts, it is imperative that they are comprehensively trialled and evaluated in a diverse sample of New Zealand schools prior to considering widespread implementation. All programmes destined for such implementation should be accompanied by clear and logical frameworks for ongoing evaluation, which includes appropriate research designs and outcome measures.

5.3. ISSUES FOR ETHNIC MINORITY AND INDIGENOUS STUDENTS

The number of culturally sensitive school-based suicide prevention and resilience building programmes for children and young people appears to be somewhat limited. Since suicide risk and protective factors are influenced by cultural context,

and different cultural groups manifest distress in different ways, it will be important to ensure that the suicide risk indicators and warning signs communicated by gatekeeper training programmes are valid for ethnic minority and indigenous students. The likely existence of cultural barriers to seeking and receiving support from formal mental health services also highlights the importance of implementing multifaceted suicide prevention strategies that include interventions aimed at overcoming these barriers, and suggests the utility of investigating the degree to which referrals to informal or traditional sources of support are effective in reducing suicide risk among ethnic minority and indigenous students.

Although evaluations of grade-level PATHS have included ethnic minority students, the moderating impact of ethnicity on programme effectiveness has not been explored. PRP is commendable in that specific programme applications for ethnic minority students have been developed and evaluated. Although results regarding effectiveness for specific ethnic groups have been mixed, there is likely to be much to learn from the programme developers regarding the development of culturally appropriate programme adaptations. FRIENDS for Life in its current format may confer some benefits for ethnic minority students. However, the evidence suggests that the programme could be enhanced by culturally sensitive adaptations and/or supplements. In the New Zealand context, it is recommended that any cultural tailoring of these programmes occurs after the impact of the original version has been rigorously evaluated on cohorts of students from distinct cultural backgrounds[32]. Action-based learning in the context of ongoing evaluation can then be used to make culturally sensitive adaptations.

Whether categorical or general, the evidence suggests that school-based programmes are more likely to be effective for ethnic minority and indigenous students if they are developed in collaboration with the relevant communities and embedded within the context of larger community-based suicide prevention efforts. Thus, gatekeeper training could also be provided to trusted and respected community members who have linkages to both professional and informal support networks, and adaptations to the content of social and emotional learning curricula could be made in collaboration with the communities and institutions in which they are to be implemented.

[32] This is the recommended process for developing culturally sensitive psychotherapies. See Hall (2001).

5.4. WHOLE-SCHOOL APPROACHES TO MENTAL HEALTH

Although this review has focused on discrete programmes, there is widespread recognition that such programmes are more likely to be effective if they are supported by a school culture, environment and ethos that promotes mental health by being warm, caring, respectful, ordered, inclusive, creative and positive. Thus, the programme recommendations that follow are not a substitute for a comprehensive school-wide effort to provide a safe and nurturing environment where all children feel a sense of wellbeing and belonging.

PART B: NATIONAL INITIATIVES

To find out what programmes and initiatives may have been implemented in an effort to prevent suicide and/or build resilience among students in New Zealand, key informants from the Mental Health Foundation (MHF), Suicide Prevention Information New Zealand (SPINZ), the Ministry of Education (MoE), and AUT University's School of Education were contacted via e-mail or telephone. The information presented in the following sections was gleaned either directly from the responses we received to this initial contact or from documents and online resources to which we were subsequently directed. It is not intended to inform readers about intervention effectiveness but rather to provide descriptions of the various programmes and initiatives that were identified.

1. CATEGORICAL PROGRAMMES

1.1. GATEKEEPER TRAINING

Lifeline Aotearoa is currently delivering three gatekeeper training programmes of relevance to school communities:

1. A half-day school-based safeTALK (Tell, Ask, Listen, Keep safe) workshop for senior high school students, school personnel and parents.

2. A 2-day community-based Applied Suicide Intervention Skills Training (ASIST) workshop for those community members who have an interest in suicide prevention or work with at-risk people.

3. A half-day community-based tuneUP refresher workshop for graduates of the 2-day ASIST workshop.

Like other gatekeeper training programmes, the safeTALK, ASIST and tuneUP workshops provide training in suicide risk factors, warning signs and responding skills[33]. Each includes role-play practice but, as with other programme components, this is more extensive in the longer 2-day ASIST programme. The safeTALK programme is currently being used in schools located in Auckland, Hamilton and Northland, and the Ministry of Health is both providing funding for the routine delivery and coordinating an evaluation of the ASIST programme[34].

[33] See http://www.livingworks.org.nz/Home_378.aspx for further details.

[34] W. Walmsley, personal communication, July 18, 2013.

Although ASIST originated in Canada, Lifeline Aotearoa has worked with Māori and Pasifika reference and clinical groups in order to tailor the 2-day ASIST workshop to the New Zealand cultural environment. During this process, all ASIST resources were reviewed and further resources were developed, including a cross-cultural handbook and a series of fact sheets on supporting people with different cultural backgrounds. Some of the key resources have been translated into Te Reo Māori[35]. The safeTALK programme is currently undergoing a similar process of cultural tailoring[42].

Although the effectiveness of the safeTALK, ASIST and tuneUP workshops has not been evaluated in school-based contexts, the original ASIST programme was developed using the Social Research and Development Model (social R&D)[36] and its effectiveness in terms of improving the knowledge, attitudes and skills of participants in various non-school contexts has been assessed in a small number of outcome evaluations[37].

2. GENERAL PROGRAMMES

2.1. SOCIAL AND EMOTIONAL LEARNING PROGRAMMES

TRAVELLERS

Travellers is currently being funded by the Ministry of Health (MoH) as part of the *New Zealand Suicide Prevention Strategy*. Most participating schools are in Auckland and Northland, and a national roll-out has commenced[38]. In 2012, ninety-six secondary schools were registered to run the programme[39].

[35] Ministry of Health. 2011. *New Zealand Suicide Prevention Action Plan 2008-2012: Second progress report.* Wellington: Ministry of Health.

[36] Social R&D is a model of social invention that focuses on translating the findings from a body of basic social science research into prescriptive guidelines for helping service practice and social intervention (Rothman 1980).

[37] See http://www.livingworks.net/page/Research%20and%20Evaluations for a full list of existing evaluations.

[38] Ministry of Health. 2011. *New Zealand Suicide Prevention Action Plan 2008-2012: Second progress report*. Wellington: Ministry of Health.

[39] Robertson, S., S. Boyd, R. Dingle and K. Taupo (2012). *Evaluation of Skylight's Travellers Programme: Final report*. Wellington, New Zealand Council for Educational Research (NZCER).

FRIENDS

Group leader training for the FRIENDS curricula is currently being offered by the Lifepaths Charitable Trust. While it is not yet clear how much training individuals with different professional experience may require in order to be able to effectively deliver the programme, Lifepaths is currently offering school personnel and health professionals 1-day training workshops for the delivery of both the FRIENDS for Life and Fun FRIENDS curricula[40].

In addition, and as part of the Youth Mental Health Project, the Ministry of Education are leading and coordinating a trial and evaluation of FRIENDS for Life – Youth in 10 secondary schools[41]. FRIENDS for Life - Child is also being independently trialled in a primary school in Christchurch, with the Information Team at Community & Public Health, Christchurch, playing a central role in evaluating its impact on the school community.

MINDFULNESS-BASED PROGRAMMES

An 8-week school-based mindfulness training programme for primary school children aged 6-10 years has been developed by an experienced mindfulness practitioner and trainer from the Mental Health Foundation who has experience working in schools. It is currently being trialled in five primary schools in the Auckland region and one primary school in Nelson. A comprehensive qualitative evaluation using a case study design to collect detailed information about the individual schools and the perceived effects of the mindfulness training programme is an integral part of this trial and is being conducted by researchers at AUT University's School of Education.

The programme has a strong emphasis on helping children to develop awareness of sensations related to the physical body and the process of breathing. In addition to this standard mindfulness training, it also includes practices aimed at cultivating gratitude and compassion. All programme learning is discussed in relation to its relevance to the *Te Whare Tapa Wha* model of health and the programme demonstrates clear links to the *New Zealand Education Curriculum*, including the key

[40] See http://www.friendsforlife.org.nz/training/ for further details.

[41] See information posted on the official website of the New Zealand Government, http://www.beehive.govt.nz/feature/prime-minister%E2%80%99s-youth-mental-health-project#schools

competencies. Teacher and student resources are available for use between each facilitated mindfulness session[42].

Although mindfulness training may not yet be a standard component of teacher training programmes in New Zealand, primary and early childhood student teachers at AUT University's School of Education currently receive a one-off lecture on mindfulness followed by brief opportunities to further explore mindfulness practice in weekly tutorial sessions[43].

2.2. OTHER INITIATIVES

MINISTRY OF EDUCATION INITIATIVES

PREVENTING AND RESPONDING TO SUICIDE

One of the two MoE responsibilities under the *New Zealand Suicide Prevention Action Plan 2013-2016* (Ministry of Health, 2013)[44] is to disseminate the *Preventing and Responding to Suicide* (Ministry of Education Professional Practice Unit, 2013) resource kit to schools. This kit provides guidelines for preventing and responding to suicide among students and is based on the literature review discussed in the introduction to this document (Te Pou, 2013). As already outlined, the primary focus of the Te Pou review is on examining the evidence base for interventions that are specifically and explicitly aimed at preventing and responding to suicide among students. Its conclusions and recommendations regarding preventative interventions are broadly consistent with those presented for categorical programmes in this document.

TOOLS AND RESOURCES FOR PROMOTING GOOD CYBER CITIZENSHIP AND REDUCING CYBER-BULLYING

The second MoE responsibility under the *New Zealand Suicide Prevention Action Plan 2013-2016* is to ensure information, tools and resources on good cyber citizenship and reducing cyber-bullying continue to be available to schools, parents and young people (Ministry of Health, 2013). To achieve this goal, the MoE is sponsoring and

[42] G. Rix, personal communication, April 30, 2013.

[43] R. Bernay, personal communication, May 7, 2013.

[44] This is a cross-government action plan that brings together the work of eight leading government agencies, which are envisaged as collaborating at both a local and national level in order to achieve the goals set forth in the plan.

working extensively with *NetSafe*, the programme of New Zealand's Internet Safety Group (ISG), to promote cybersafety education to schools. A resource for schools, the *NetSafe Kit for Schools*, has been developed and disseminated. This kit is based upon three core components of cybersafety:

1. An infrastructure of policies, procedures and signed student and staff use agreements, which are actively enforced.

2. An electronic security system.

3. A cyber-safety education programme for the entire school community[45].

NetSafe also maintains a dedicated cyber-bullying website[46], which provides information and advice for young people, parents and teachers seeking to understand and respond effectively to bullying that takes place in cyberspace.

POSITIVE BEHAVIOUR FOR LEARNING

In addition to these two new responsibilities and as part of the *New Zealand Suicide Prevention Strategy*, the MoE is currently rolling out various components of *Positive Behaviour for Learning (PB4L)*, a programme intended to help schools, teachers and parents promote positive behaviour.

PB4L consists of a number of discrete initiatives. These include:

- *PB4L School-wide*, a long-term approach that supports school personnel to set clear behavioural expectations for students and respond to these behaviours in a consistent manner.

- *Incredible Years*, programmes that provide teachers and parents with approaches to help turn disruptive behaviour around and create a more positive classroom and home environment for children aged 3-8.

- *Wellbeing@school*, a website that provides tools and resources to help schools review and improve their school climate.

- *Behaviour Crisis Response Service*, a service available to schools in the aftermath of an extreme event.

[45] See http://www.netsafe.org.nz/archive/schools/the_netsafe_programme_for_schools.html

[46] See http://www.cyberbullying.org.nz/

- *Intensive Behaviour Service*, a 'wraparound' service providing more intensive support for those students who are referred to the MoE's *Severe Behaviour Service*[47].

During 2010-2014:

- 15,000 parents and caregivers will receive the *Incredible Years – Parent Programme*.
- 7,240 early childhood education and primary school teachers will receive the *Incredible Years – Teacher Programme*.
- 400 schools will implement *PB4L School-wide*.
- All schools will have access to a *Behaviour Crisis Response Service*, which will provide quick support from the Ministry of Education to stabilise a crisis situation.
- Up to 100 students with significant challenges and complex needs will be supported each year through an *Intensive Behaviour Service* within their local schools[48].

There are also longer-term plans to deliver FRIENDS for Life - Youth and Check and Connect[49] as part of PB4L[50].

MINISTRY OF HEALTH INITIATIVES

MENTALLY HEALTHY SCHOOLS

Mentally Healthy Schools (MHS) uses a whole-school approach to promoting mental health. It is linked to Health Promoting Schools (HPS), a WHO initiative that facilitates participation and action by the whole school community to address health and wellbeing issues of students, staff and their community. The HPS framework integrates health and wellbeing into the school's planning and review processes, pedagogy, curriculum and assessment activities and is currently used in some New

[47] See http://pb4l.tki.org.nz/About-PB4L/Programmes-and-initiatives

[48] Ministry of Health. 2011. *New Zealand Suicide Prevention Action Plan 2008-2012: Second progress report*. Wellington: Ministry of Health.

[49] An intervention designed to enhance student engagement. See http://checkandconnect.umn.edu/

[50] T. Anderson, personal communication, September 18, 2013.

Zealand primary, intermediate and secondary schools[51]. The MoH is currently seeking a clearer understanding of the coverage, uptake, implementation and effectiveness of MHS in order to identify gaps and plan future investment[52].

MENTAL HEALTH FOUNDATION INITIATIVES

FLOURISHING ENVIRONMENTS ANALYSIS TOOL

Flourishing Environments Analysis Tool (FEAT) is a strengths-based tool designed to assist schools to comprehensively analyse the school-based policies, practices and environments that may impact the wellbeing of the whole school community. Analysis is conducted collaboratively by drawing on the expertise and knowledge of the whole school community, with additional support being provided by local stakeholders such as health promoters. This analysis is ultimately aimed at empowering schools to find their own creative solutions to the issues identified by the tool. The first version of FEAT has been trialled and evaluated in four primary schools in the North Island, with the report detailing the findings of this trial expected later this year. Other versions of FEAT are currently being trialled in early childhood and workplace settings[53].

[51] Cognition Education Limited commissioned by the Ministry of Health. 2010- 2011. *New Zealand Health Promoting Schools National Strategic Framework. Section One: Executive Report*.

[52] Ministry of Health. 2009. *New Zealand Suicide Prevention Action Plan 2008-2012: Report on progress: Year one*. Wellington: Ministry of Health.

[53] C. Fox, personal communication, June 10, 2013.

PART C: KEY FINDINGS

1. CATEGORICAL PROGRAMMES

The evidence suggests that:

1. The most promising school-based categorical programme is gatekeeper training for adult members of the school community.
2. Schools should refrain from implementing suicide screening programmes, peer-helping programmes and suicide-specific education curricula.
3. Schools should embed life skills training in general mental health promotion rather than specific suicide prevention activities.

2. GENERAL PROGRAMMES

The evidence suggests that schools could best foster the resilience of students by:

1. Training teachers to deliver grade-level PATHS to primary school-aged children.
2. Contracting external facilitators with expertise in CBT interventions for children and young people to deliver PRP or the Child and Youth versions of FRIENDS for Life to at-risk intermediate and/or secondary school-aged children.
3. Contracting trained mindfulness facilitators to support children of all school ages to engage in developmentally and culturally appropriate mindfulness practice.

3. CHALLENGES FOR NEW ZEALAND SCHOOLS

The combined results of the literature review and national enquiry suggest that schools in New Zealand wishing to implement the evidence-based programme recommendations outlined above may face a number of significant challenges. These include:

1. The success of gatekeeper programmes is contingent upon the availability of services that can offer effective follow-up support to those students who are identified as being at risk for suicide. Some services may not be available in

some regions of New Zealand. Even if such services are available, they may not yet have the capacity to respond in a timely manner to the gatekeeper-mediated increase in number of referrals.

2. The barriers to gatekeeper-identified students receiving follow-up support may be greater in some regions of New Zealand than others due to students living in smaller communities facing difficulties in confidentially seeking or receiving services.

3. The current national priorities for education in New Zealand may affect schools' ability to prioritise the goal of enhancing students' emotional wellbeing. Since the successful implementation of grade-level PATHS is likely to require substantial educational commitment to this goal, there may be significant structural barriers to its implementation in New Zealand schools.

4. Group leader training for grade-level PATHS and PRP is not currently available in New Zealand. Although the US-based developers of these programmes have delivered training to schools and agencies outside of the US, securing adequate training for interested parties in New Zealand may require a substantial commitment of time and resources.

5. There may be challenges for schools in certain regions in readily accessing external facilitators with expertise in either CBT or mindfulness interventions for children and young people.

4. PROGRAMMES WITH READILY AVAILABLE TRAINING

The results of the national inquiry suggest that the only programmes for which local training is available are gatekeeper training, FRIENDS for Life and Travellers. Although these programmes may therefore be the most straightforward to implement, schools may wish to consider the following points:

1. While the gatekeeper training programmes on offer in New Zealand have similar instructional aims to those reviewed in this document, and include programme components that have been shown to enhance the acquisition of gatekeeper skills, they have yet to be evaluated in school-based contexts.

2. FRIENDS for Life evolved out of a clinical CBT-based treatment programme for childhood anxiety and was developed by a clinical psychologist. Although the intended implementers of its constituent curricula are classroom teachers, the vast majority of FRIENDS evaluations have relied upon clinically trained

personnel to implement the curriculum. When these evaluations are compared to the small number that have charged teachers or school personnel with implementation, the magnitude of the intervention effects for school providers can be seen to be much smaller than that for clinically trained personnel.

3. Although Travellers is endorsed by the Ministry of Health and may well be a beneficial intervention, there is as yet limited evidence to support the effectiveness of this programme in improving student mental health. While Travellers is based on concepts and strategies employed by empirically-supported psychosocial interventions, it remains to be established whether this particular programme formulation is an effective resilience-building intervention for young people.

5. GENERAL RECOMMENDATIONS

Based on the evidence and local considerations summarised above, the following recommendations are provided to schools and district health boards throughout New Zealand.

5.1. CATEGORICAL PROGRAMMES

1. Deliver gatekeeper training to school personnel (teachers, administrators and school health professionals) and parents.

2. Advise schools to refrain from implementing suicide-screening programmes, peer-helping programmes and suicide-specific education curricula.

5.2. GENERAL PROGRAMMES

3. Explore possibilities for building the capacity of New Zealand schools to offer grade-level PATHS as a universal intervention for primary school-aged children, either PRP or the child and youth versions of FRIENDS for Life as selected interventions for at-risk intermediate and secondary school-aged children, and mindfulness-based programmes as either universal or selected interventions for schoolchildren of all ages.

5.3. PROGRAMME-SPECIFIC RECOMMENDATIONS

GATEKEEPER TRAINING PROGRAMMES FOR ADULTS

4. Ensure that the gatekeeper training offered includes role-play practice and that participants are provided with opportunities for strengthening and maintaining their gatekeeper skills over time.

5. Empower parents to make referrals to formal mental health services by instituting a link between school mental health professionals and gatekeeper-trained parents.

6. Ensure that the suicide risk indicators and warning signs communicated by the selected gatekeeper training are culturally sensitive.

7. Extend the offer of gatekeeper training to trusted and respected members of ethnic minority and indigenous communities and ensure that these people have referral linkages to both formal mental health services and informal support networks.

8. Ensure that the professional follow-up services to which the gatekeeper training is linked can offer effective support in a timely manner to those who are identified as being at-risk.

GRADE-LEVEL PATHS

9. Explore options for training primary school teachers in the delivery of grade-level PATHS.

PRP AND FRIENDS FOR LIFE

10. Explore the capacity of local mental health providers, preferably those with expertise in CBT interventions for children and young people, to deliver PRP and/or FRIENDS for Life.

11. If capacity exists, explore options for training these providers in the delivery of PRP and/or FRIENDS for Life.

12. If capacity does not exist, explore options for:

    a. Recruiting and training mental health providers with expertise in CBT interventions for children and young people from other regions of New Zealand.

b. Training school personnel (teachers and school health professionals) in the delivery of PRP and/or FRIENDS for Life.

MINDFULNESS-BASED PROGRAMMES

13. Contract educators with mindfulness experience to review the content of existing mindfulness-based programmes for children and young people, including that which has been developed by the Mental Health Foundation of New Zealand, and make recommendations regarding which would be the most suitable for trialling in New Zealand schools.

14. Explore the capacity of local mindfulness trainers to deliver the recommended mindfulness-based programme.

15. Use the MHF Mindfulness Directory to locate educators and trainers with the requisite mindfulness experience.

16. Consider investing in professional development in mindfulness for local teachers.

TRAVELLERS

17. Consider implementing Travellers at the discretion of individual schools only.

ALL PROGRAMMES

18. Trial and evaluate any programme selected for delivery in a small but diverse sample of schools before considering district-wide implementation. This is especially important for Travellers given the limited evidence currently available to support its effectiveness.

19. Consider collaborating with academic institutions in order to ensure rigorous evaluation.

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