Scotland's Suicide Prevention Action Plan

National Suicide Prevention Leadership Group
Every Life Matters Suicide Prevention Action Plan
Academic Advisory Group

Preventative approaches, protective factors and interventions for the reduction of suicide among young people.

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Contents

1. Introduction

Scotland's Suicide Prevention Action Plan (SPAP) highlights the importance of effective suicide prevention actions targeted towards at high-risk groups (Action 7) and of considering the needs of children and young people (Action 8). In July 2021, Delivery Leads (DLs) of Actions 7 and 8 of Scotland's SPAP requested that the Academic Advisory Group (AAG):

1. Reviews existing literature to identify preventative approaches, protective factors and interventions which have shown to reduce risk of suicide among young people.
2. Investigates community places (e.g., schools, healthcare clinics) and relationships with community figures (e.g., teachers, healthcare workers)
3. Identifies gaps in the existing literature regarding preventative interventions for young people.

This brief report covers these three areas.

2. Methods

A literature search was conducted to identify peer-reviewed publications which explore possible factors or interventions which may reduce suicide risk in young people. To identify relevant papers, suicidal risk was defined using the World Health Organisation (2014) definition of suicidal behaviour as 'behaviours that include thinking about suicide (or ideation), planning for suicide, attempting suicide and suicide itself'. Five academic databases were used for this search: CINHAL, Medline, PsychArticles, PsychInfo, and Web of Science. Search terms were entered into the databases and then narrowed by major and minor subject headings (e.g., MeSH; see appendix 1 for more details). Inclusion criteria for the current report were publications which: i) explored at least two primary data studies (e.g., systematic review, editorial); ii) explored suicide or suicidal behaviour; iii) explored protective factors or evaluated interventions; iv) were available as full text articles; v) were written in English; vi) were peer-reviewed; and vii) were published since 2000. Consistent with previous literature reports (National Suicide Leadership Group, Unpublished) 'young people 'were defined as those aged 16-24 years old. Publications were excluded if findings pertaining specifically to those aged 16-24 years could not be extracted.

3. Results

79 reviews were initially identified through database searches. After duplicates were removed, titles and abstracts were screened. Thirty studies were screened for full-text eligibility, of which 18 were included in this review. Most studies were excluded during full-text screening because they did not explore either protective factors or interventions (n=10). Characteristics of the included papers are summarised in appendix 2.

3.1. What existing preventative approaches, protective factors or interventions are effective in reducing the risk of suicide among young people?

To address the above question, each aspect of reducing suicide risk is discussed individually below:

3.1.1. Preventative approaches

Preventative approaches are strategies which are intended to avert the occurrence of suicidal behaviour.

Preventative approaches were identified in only one systematic review. Across 12 studies of young people aged between 15 to-24 years old from the United States, Balis & Postolache (2008) explored two preventative approaches. The first approach was limiting access to means, including alcohol, drugs, firearms, particularly in areas where these resources are more available. However, the paper did not go into more detail about this approach. The second preventative strategy explored health clinics in Latino participants (ages). In this strategy, health clinics culturally attuned to their patients (e.g., staff and materials were bilingual and/or bicultural) created an informal atmosphere with minimal administrative procedures, publicly minimised mental health stigma and focused on preventative healthcare. Both strategies were found to be associated with reduced incidence of suicide death in young people aged 15-24.

3.1.2.Protective factors

Protective factors are any experiences or exposures which prevent or reduce the risk of suicidal behaviour. Seven overarching protective factors were explored in nine papers included in this report.

Family connectedness/cohesion. Family connectedness was measured using self-report measures (e.g., Family Environment Scale, Perception of Family Support Scale, Family Adaptability and Cohesion Evaluation Scale) and was significantly associated with reduced suicidal thoughts (Balis & Postolache, 2008; Buchman-Schmitt et al., 2014; Cha et al., 2018) and suicidal behaviour (Canino, 2001; Gould & Kramer, 2001; Russell, 2003). In two reviews these associations were examined in the context of ethnicity. Canino (2001) found that presence of family support weakened the association between stress and suicidal behaviour in Mexican and American samples (15-24 years old), while Balis & Postolache (2008) found that family ties were particularly associated with reduced suicidal ideation and suicide death in minority ethnicities across several studies (15-24 years old). Four reviews which compared various supports (parent, school and peer) (Balis & Postolache, 2008; Buchman-Schmitt et al., 2014; Cha et al., 2018; Russell, 2003) concluded that parental support was the most protective type of support against suicidal ideation or behaviour (<21 years old). In worldwide reviews, both Balis & Postolache (2008) (15-24 years old) and Grimmond et al. (2019) (<25 years old) found connectivity with others, including having caring family relationships and supportive tribal leaders, was associated with lower rates of suicidal behaviour and suicide death across ethnicities.

Peer relationships/social support. Peer relationships and social support was measured using self-support measures (e.g., Adolescent Support Inventory, Social Embeddedness Scale). Balis & Postolache (2008) found that social ties were particularly associated with reduced suicidal ideation and suicide death in minority ethnicities across several studies (15–24-year-olds). Buchman-Schmitt et al. (2014) drew the same conclusion as Balis & Postolache (2008) across all ethnicities (including White populations), with this association being stronger in females. In sexual minority populations (childhood- 21 years old), Russell (2003) found social support was linked with improved self-esteem and low suicidal ideation, while family support was associated with fewer mental health problems. These findings from systematic reviews and editorials were contradicted in a meta-analysis of 12-26

year olds which found no significant associations between social support or resilience and suicide attempts or suicide deaths (Miranda-Mendizabal, 2019).

Religion/ religious coping. Balis & Postolache (2008) was the only article to explore religion and religious coping as a means of managing stress, suicidal ideation and behaviour. The authors conclude that religious coping, including spirituality and hope, is effective in managing stress and is associated with reduced suicidal ideation among American, Black and Chinese youth (15-24 years). Personal devotion to their religion and orthodox religious beliefs were found to be the strongest protective factors from suicidal ideation and behaviour in both Black and White populations. The same review also found that membership of a religious group was associated with lower rates of suicide in minority ethnicities when compared to White populations.

Connection to culture and community. Two reviews (Cha et al. 2018; Grimmond et al., 2019) explored connections to one's culture (e.g., ethnicity, race) and local community (adolescent social group e.g., Goth, Emo). Both reviews concluded that connectivity to culture and community via shared cultural norms and/or heritage can protect against suicidal behaviour in those under 25 years (Grimmond et al., 2019) or aged 15-24 years (Cha et al., 2018).

School settings. School settings includes connectivity with peers at school, academic attainment and learning experiences were explored across two reviews. A meta-analysis by Marraccini and Brier (2017) found a statistically significant association between high self-reported connectedness with school peers and low instance of self-reported suicide attempt (OR: 0.589, 95% CI: 0.493, 0.704, p <0 .0001) across ten studies exploring among 11–17-year-olds worldwide. One study included in the review by Balis and Postolache (2008) found that positive school experiences were protective for Native American populations. However, it was unclear whether these experiences related to academic performance or connectivity with peers. According to an editorial by Buchman-Schmitt et al. (2014), academic attainment was found to be protective against suicide death.

Thinking styles. The association between suicidal behaviour and thinking styles, including positive future thinking, self-acceptance, resolution of triggering events, problem-solving and personal control was explored in several of the included studies. An editorial by Canino (2001) reported that, in two studies of participants <25 years old, positive future thinking had a positive role in mediating the association between stress and suicidal behaviour in Mexican and American samples. A systematic review by Grimmond et al. (2019) found that, among those aged <25 years, resolution of past negative experiences (e.g., triggering events) was associated with fewer instances of suicidal behaviour compared to non-resolution of past negative experiences. Self-acceptance of sexual minority status was found to be protective against suicide death among young persons aged <24 years living in the US (Russell, 2003). Among those aged 15-24 living in the USA, persons with problem-solving skills and personal control had fewer instances of suicidal behaviour than age peers without these traits (Gould & Kramer, 2001).

Non-prejudicial experiences. A worldwide report on 5-29 year olds by Cha et al. (2018) found that those who did not have ethnic minority status or were not the object of discrimination (e.g., racism, homophobia, bullying) were less likely to engage in suicidal behaviours or report suicidal ideation than those with a minority status or who were recipients of discrimination.

3.1.3. Interventions

Fristad & Shaver (2001) classified an intervention as 'good 'if there were at least two randomised controlled trails (RCT) to establish its efficacy and nine further studies which were sufficiently powered using an alternative design or had an 'equivalent study design to an RCT'.

3.1.3.1.School-based interventions.

School-based interventions, including Signs of Suicide (SOS), life-skills and gatekeeper training, were explored in five publications.

Signs of Suicide (SOS). SOS is a school-based psychoeducation program which aims to increase students' understanding of suicide, as well as risk factors for depression and suicidal behaviour. The SOS intervention was investigated in three reviews Balis & Postolache, 2008; Buchman-Schmitt et al., 2014; Peña & Caine, 2006). Buchman-Schmitt et al. (2014) found that rates of attempted suicide among children and adolescents were significantly reduced in those who received the SOS intervention compared to those who did not receive the intervention. Balis & Postolache (2008) reported that compared to baseline, 15-24 year olds reported an increased awareness of the signs of suicidal behaviour and depression, and greater understanding of how to manage low mood, suicidal ideation and suicidal behaviour following SOS interventions. However though differences by ethnicity were identified. Following the intervention, White participants were more likely to indicate increased knowledge about suicide and depression, whereas Black participants reported reduced suicidal thoughts and suicide attempts. At three-month follow-up of SOS, Peña & Caine (2006) found that 15-18 year olds reported a significant reduction in self-reported suicide attempts. However, despite this reduction, Peña & Caine (2006) reported that the results of the screening measures typically overwhelmed the school services, due to the number of students reporting severity of suicidal ideation or behaviour severity which warranted further support from school counselling services. In the same time-period, however, participants did not report any increase in help-seeking (Peña & Caine, 2006). Balis & Postolache (2008) concluded that SOS was likely to be more effective if the clinician used culturally informed approaches (e.g., recognising the socio-economic status of the individual and the financial resources available to them) when developing ideas and solutions with patients.

Life-skills. Gould & Kramer (2001) concluded that school-based interventions which taught life-skills (e.g., decision making, personal control) and social support perspectives improved these protective factors among 15-24 year olds as well as reducing risk factors of suicidal behaviour (Gould & Kramer, 2001).

Gatekeeper training. School-based gatekeeper training of parents, school staff, or community representatives was explored by Robinson et al. (2013), who stated there was 'reasonable evidence ' to indicate that the training, combined with routine mental health checks, may be effective in suicide prevention. However, Robinson et al. (2013) also suggested that this would be most effective to selected populations (as opposed to using it as an indicated or universal approach) in tandem with a suicide screening tool.

3.1.3.2.Healthcare interventions.

Three healthcare interventions were explored in the publications included in this report: cognitive-behavioural therapy, dialectical behaviour therapy and youth support systems. The results relating to each of these approaches are summarised below.

Cognitive-behavioural therapy (CBT). Several cognitive-behavioural therapy (CBT) approaches were explored in these reviews. Counsellors Care (C-Care) is an individual intervention which includes computer-assisted assessments of risk and protective factors for suicidal behaviour, and counselling-reinforced social skills and problem solving. Coping and Support Training (CAST) is a group-based intervention to equip participants with life-skills, including coping strategies for stress. A worldwide systematic review of under 18 year olds conducted by Buchman-Schmitt et al. (2014) found that those who received both C-Care and CAST were found to have significantly more favourable outcomes than those who did not receive these interventions, with the best results found among participants who received both interventions. These results included reported improvements in strength of social bonds and problem-solving skills (Buchman-Schmitt et al., 2014). Similar reductions in suicidal behaviour were observed in 15–29-year-olds 18 months after receiving Integrated CBT (I-CBT) or Attachment-based Family Therapy (ABFT) compared to those who did not receive any intervention (Cha et al., 2018). Fristad & Shaver (2001) report that Successful Negotiation Acting Positively (SNAP), a structured outpatient treatment for children and adolescents, including interpersonal problem-focused approaches (to improve family communication and resolve maladaptive cognitions), was found to be most effective when family attend and participate in the treatment process. However, the paper acknowledges that no papers were included in their review where comparisons were made between groups which included family attendance and non-attendance to the SNAP sessions.

Russell (2003) conducted the only review to explore the effectiveness of interventions for a specific youth population. The review concluded that suicide interventions which included peer support, stress management and stigma management components were most effective in reducing suicide and suicide attempts in sexual minority groups.

Youth support systems. Fristad & Shaver (2001) found one study which explored youth support systems with psychoeducational treatment sessions to equip young people with the skills to draw-upon and manage their social connections. Six months after treatment there was a significant reduction in suicidal ideation, though there was no statistically significant change in suicide attempts (age of participants not provided).

3.2.Community places

Investigations into the protectiveness of community places were limited, with only three reviews exploring three locations: places of worship, schools and healthcare settings.

Places of worship and religious communities. Balis & Postolache (2008) reported evidence that religious community membership may protect against suicidal behaviour and ideation via the promotion of social cohesion, meaning for life and self-esteem.

School. Both Balis & Postolache (2008) and Buchman-Schmitt et al. (2014) identified that school could have a protective role against suicidal ideation and behaviour, specifically via positive school experiences (Balis & Postolache, 2008) and high school attainment (Buchman-Schmitt et al., 2014).

Healthcare settings. An editorial by Russell (2003) cited several studies which argued that access to healthcare promotes self-esteem and sexual health, both of which are negatively associated with suicidal ideation. However, the impact of actual attendance (as opposed to access) at healthcare settings was not reported.

3.3.Gaps in the existing literature

Many of the reviews included here emphasised the need for further replication of findings or longitudinal assessments of the associations identified between potential protective and preventative factors in relation to suicidal ideation, behaviour or death (Marraccini & Brier, 2017; Peña & Caine, 2006). In particular, the need for randomised-controlled trials (RCTs) (Peña & Caine, 2006; Robinson et al., 2013), which are regarded as the gold-standard for evaluating clinical interventions, was stressed. More specific calls for research included: exploring the role of stigma associated with psychiatric disorders (Balis & Postolache, 2008); frameworks for contextualising the interaction between protective and risk factors (Buchman-Schmitt et al., 2014; Goldston, 2004); distinguishing between those who attempt suicide and those who die by suicide (Canino, 2001); understanding the role of school connectedness (Marraccini & Brier, 2017); and understanding how to increase awareness of warning signs and protective factors in schools (Grimmond et al., 2019; Russell, 2003). Fristad & Shaver (2001) found evidence that dialectical behaviour therapy (DBT) was effective in reducing suicidal ideation and behaviour in adults. However, the same review did not identify sufficient evidence to draw any conclusions about its use with young people.

4. Discussion

This report has identified protective factors, preventative approaches, interventions and gaps in literature relating to suicidal behaviour among young people. Major protective approaches identified in the literature were interpersonal connectivity (especially parents, peer support and religious group membership), social acceptance (e.g., no experience of discrimination or bullying) and academic attainment.

Several interventions were shown to be associated with reduced suicidal ideation, behaviour and death. School-based interventions were found to equip students with self-protective skills. Help-seeking may not necessarily increase; rather, young people may successfully use internalised skills to manage their distressing thoughts and self-injurious behaviours. It was suggested that interventions which include problem-solving coping strategies and social skills (e.g., communication) may be most effective. These findings reflect the theme of interpersonal connectivity identified within the protective factors of this review.

Although very few papers explored the merits of communal places as protective against suicide, it was found that schools and places of worship potentially protect young people against suicidal behaviour. These institutions may facilitate a sense of membership and social identity. One review reported the association between suicidal behaviour and availability of healthcare, but did not address the association with attendance at these services. The potential protective role of public places against suicidal behaviour requires further exploration.

These findings are compatible with existing research which has found that interpersonal relationships are particularly important to young people and young adults. Young people typically use social networks to support their transition into adulthood, develop their identity and increase their independence.

There were calls for robust evaluation designs (e.g., RCTs) to explore the efficacy of interventions, and for longitudinal studies to investigate the role of protective factors in mitigating suicide risk.

4.1 Limitations

Several limitations of this review should be considered. This report only investigated peer-reviewed publications where protective factors were actively explored. However, any factors which can reduce the effect of known risks of suicide would also be protective. There was a significant overlap of studies across reviews, which may lead to the over-statement of some conclusions. Although some reviews did draw comparisons between different ethnicities, White and/ or female participants were over-represented in many studies. No reviews specifically commented on the specific role of communal places and their role in protecting individuals from suicidal ideation (e.g., exploring if school attendance offered adolescents respite from stressors at home). Instead, reviews explored associations between the *availability* of schools, medical centres or places of worship, or the communities affiliated with these public places. This review includes peer-reviewed editorials, which do not undergo the same rigorous reporting evaluation as systematic reviews or meta-analyses. Finally, the purpose of this report was to inform suicide prevention strategies within Scotland. However, no papers included in this report specifically focused on populations in Scotland and very few included studies from the UK. Therefore, the relevance of the findings discussed here may not be applicable to the Scottish context.

4.2 Conclusions

The evidence of the current review highlights the importance of interpersonal factors, including connectivity with parents, peers and other community groups, as well as wider acceptance from their community, in protecting against suicidal behaviour in young people. Young people who have received interventions which focus on adaptive coping strategies and social skills in schools and healthcare settings have been shown to have better suicide-related outcomes than young people who have not received these interventions. These interventions may improve a young person's ability to manage their self-injurious thoughts or acts (although not necessarily impacting on help-seeking behaviour). Further research using RCTs and prospective approaches are needed to better understand the role of these interventions and protective factors, especially across different sexual and ethnic minority groups and Scottish residents. Further investigation is also required to understand what, if any, role communal buildings have in protecting young people from suicide risk.

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Appendix 1 Search strategy

Search method	Search terms	Results
S1	prevention OR intervention OR protective	4,955,916
S2	young people OR youth OR adolescents OR young adults	3,903,376
S3	suicide OR self-harm OR self harm OR self-injury OR self-injury	198,840
S4	S1 & S2 & S3	24,252
L1	Narrowed by major subject heading: • Suicidality • Suicide prevention • Attempted suicide • Suicide, attempted • Suicide	13,567
L2	Narrowed by (minor) subject heading: • Students • Prevention • Treatment • Protective factors • High school students • Suicidality • Youth suicide • Attempted suicide • Suicide prevention • Suicide	1,010
L3	Narrow by methodology • Meta-synthesis • Meta-analysis • Systematic review • Literature review	86
L4	• Published date: 01/01/2000- present	79
Total after duplicates removed		68
Included in title screening		68
Included in abstract screening		62
Included in full text screening		30
Included in review		14

Appendix 2 Publication summaries

Author	Type of publication (Number of studies)	Study designs included	Geographic area	Age group included in current review (years)
Balis & Postolache (2008)	Systematic review (87)	Cross-sectional Longitudinal	USA	15-24
Buchman-Schmitt et al. (2014)	Editorial (NS)	Case control Cross-sectional Longitudinal	Worldwide	<18
Canino (2001)	Editorial (NS)	Longitudinal	USA and Mexico	15-24
Cha et al. (2018),	Annual review (NS)	Case study Cross-sectional	Worldwide	15-24
Fristad & Shaver (2001)	Editorial (NS)	RCT	Not stated	14-18
Goldstein & Franzen (2020)	Systematic review	Cross-sectional Longitudinal	Worldwide	14-24
Gould (2003)	Systematic review	Cross-sectional Evaluation studies Longitudinal RCT	USA	10-24
Grimmond et al. (2019)	Systematic review (27)	Qualitative second-hand interviews	Worldwide	<25
Marraccini & Brier (2017)	Meta-analysis (20)	Cross-sectional	Worldwide	11-17
Miranda-Mendizabal (2019)	Meta-analysis (67)	Longitudinal	Worldwide (mostly USA)	12-26
Peña & Caine (2006)	Systematic review (17)	Cross-sectional RCT	USA	9-18
Robinson et al. (2013)	Systematic review (46)	Case series nRET Rolling group design RCT	USA	12-17
Russell (2003)	Editorial (NS)	Longitudinal	Worldwide (mostly USA)	(M) 18-27

NS = Not stated. RCT = Randomised controlled trial, nRCT= non-randomised experimental trial. M= Mean age

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