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Running head: *Protective Factors of Suicide Relevant to Emergency Healthcare Settings*

Protective factors of suicide and suicidal behaviour relevant to emergency healthcare settings: A systematic review and narrative synthesis of post-2007 reviews

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Abstract

Objectives: Suicide is a major public health concern and, with recent societal changes, such as economic and technological changes, there may be emerging protective factors that mitigate suicide risk which are unrecognised in emergency healthcare. This systematic review aims to identify protective factors for suicide that can feasibly be assessed in time-limited emergency healthcare settings.

Methods: A systematic review of reviews was conducted via PsycINFO, CINAHL and Medline (2007-2015). Reviews were assessed for methodological quality using AMSTAR.

Results: Twenty-four reviews met the inclusion criteria, eight were assessed as high quality and included in a narrative synthesis. Known protective factors were identified (e.g., social support), along with emerging protective factors (e.g., internet support).

Conclusion: The review synthesises recent research evidence on protective factors and discusses their relevance to emergency healthcare.

Keywords: suicide, protective factors, systematic review, socioeconomic factors

Protective factors of suicide and suicidal behaviour relevant to emergency healthcare settings: A systematic review and narrative synthesis of post-2007 reviews

Suicide is a serious public health concern, with over 800,000 people dying by suicide each year (World Health Organization, 2014). Past suicide research has often focussed on risk factors for suicide in individuals (Kessler, Borges & Walters, 1999; Mościcki, 1997), such as individual, relationship, community and societal factors that contribute to an increased risk of suicide (Centers for Disease Control and Prevention [CDC], 2016). However, recent research has begun to explore protective factors of suicide (e.g., Choi et al., 2013). Protective factors of suicide are features such as individual (e.g., personality traits), family, and community (e.g., access to mental health services) that make it less likely that individuals will consider, attempt, or die by suicide (Suicide Prevention Resource Centre, 2011). Identifying and understanding protective factors are argued to be of equal importance to researching and understanding risk factors (CDC, 2016; Larkin, Di Blasi, & Arensman, 2014). According to the CDC (2016), protective factors have been relatively under-researched and not studied as extensively or rigorously as risk factors. Furthermore, literature reviews and formal tests of protective factors are rare in the suicide literature (Halfon, Labelle, Cohen, Guilé, & Breton, 2013; Nock et al., 2008).

McLean, Maxwell, Platt, Harris, and Jepson (2008) conducted a comprehensive systematic review explicitly exploring both risk and protective factors of suicide and suicidal behaviour. The review included a search for existing reviews and primary studies of protective factors from 1996 to 2007. The search identified one review and 44 primary studies relating to protective factors that met the inclusion criteria. Protective factors of suicide identified included: coping skills; reasons for living; physical activity and health; family connectedness; supportive schools; social support; religious participation;

employment; social values; and health treatment. The review identified gaps in the protective factor literature, which included self-help and help seeking; neighbourhood quality; social capital; and older people. The review demonstrated that, although a number of protective factors have been identified, some are little researched, or not empirically assessed. Since 2008 however, there have been a number of societal changes. According to Barr, Taylor-Robinson, Scott-Samuel, McKee and Stuckler (2014), the 2008 global financial crisis has been linked to increases suicides in England. Similarly, this trend of increased suicide since the global recession extends worldwide, to 27 European countries, and 18 American countries, and particularly in men, and countries with higher levels of job losses (Chang, Stuckler, Yip, & Gunnell, 2013). There has also been technological advances in society for example, internet usage, which may impact suicide (Shand, Ridani, Tighe, & Christensen, 2013; Van Geel, Vedder, & Tanilon, 2014). Therefore, further exploration to identify current protective factors which may have developed due to societal changes such as internet use, may be beneficial to mediate risk. For example, the identification of emerging protective factors may assist health and social care professionals to carry out a comprehensive assessment of risk and protective factors, which may in turn help to mediate risk which has been impacted upon by societal change.

Research has also investigated whether protective factors can predict suicide attempts. For example, Choi et al. (2013) found that a person's previous year's highest global functioning score, as measured by the Global Assessment of Functioning, and being over 45 years old, served as protective factors against multiple suicide attempts, however this was not a longitudinal study, and only assessed participants from one hospital. Simon (2011) notes that protective factors are frequently overlooked in clinical assessments and suicide risk assessment forms. Recent research established that the SAD PERSONS scale is the most commonly used risk assessment scale used in hospitals in England to assess suicide risk

following self-harm (Quinlivan et al., 2014), however SAD PERSONS fails to adequately address protective factors. In violence risk assessment practices, the consideration for protective factors within assessment is increasingly being brought to the forefront (Jones & Brown, 2008), with some assessment tools now focussed solely on protective factors (e.g., the Structured Assessment of Protective Factors (SAPROF); de Vogel, de Ruiter, Bouman, & de Vries Robbe, 2007).

Improving understanding of current protective factors could assist healthcare staff in their assessments, as research has found that staff in emergency departments can be negative or ambivalent toward suicidal individuals (Pompili et al., 2005). The research additionally notes that patients are subjected to stigmatisation and lack of empathy, which can decrease the quality of care, and further emphasises the need for protocols, guidelines and education for emergency staff. In a qualitative study, Macleod (2013) interviewed behavioural health clinicians who assess for suicide risk. Clinicians found suicide assessment to be an anxiety provoking process, as respondents felt very aware that to some degree they may have an impact over the future direction of a patient's life. This can lead to clinician burnout and compassion fatigue (Smart et al., 2014; Sprang, Clark, & Whitt-Woosley, 2007), which is characterised as a gradual lessening of compassion overtime due to the direct experience of helping others in distress. By updating and synthesising the literature on suicide protective factors this can contribute to a greater understanding of suicide, potentially reduce stigmatisation and burnout amongst healthcare staff, and develop healthcare training, protocols and risk assessment screening measures specific to these factors.

Findings consistently show that at many individuals who go on to complete suicide have attended emergency departments at least once in the year prior to their death. For example, Gairin, House and Owens (2003) obtained a regional list of 219 suicides for a 5-year period and found that 85 (39%) had attended an emergency department 12 months prior

to their death. Similarly, Da Cruz et al. (2011) found that of 286 completed suicides by individuals with a mental illness, 124 (43%) had attended an emergency department in the year prior to their death. Given that healthcare staff find this a challenging part of their role (Macleod, 2013; Smart et al., 2014), as well as emergency departments being time-limited, further research into the assessment of suicide in these settings, including the assessment of protective factors is imperative. Particularly to identify current protective factors that could be useful in assessment in these settings, as Simon (2010) comments that the assessment of protective factors provides an essential balance in suicide risk assessment.

Aims & Objectives

At present, the literature identifying protective factors of suicide is under-researched (Centers for Disease Control and Prevention, 2015). Therefore, the aim of the current research is to provide a high-quality review of reviews of suicide protective factor literature which may have developed due to recent societal changes since the last comprehensive review on protective factors for those at risk of suicide (McLean et al., 2008). Furthermore, as those contemplating suicide or who go on to complete suicide attend emergency departments frequently (Da Cruz et al., 2011), the aim is to identify findings that are applicable to assessment in these settings, for example, protective factors that are feasible to assess within a busy and time-limited emergency department. To clarify, the current review is concerned only with suicide that involves suicidal intent; the current review will not include systematic reviews that explore suicidal behaviours such as self-harm when it is not associated with suicidal intent.

Method

The methodology followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) statement (Moher, Liberati, Tetzlaff, Altman & The PRISMA

Group, 2009) and uses PRISMA items 6-13, 17-20, and the recommended study flow diagram. Items that were not included were outside the scope of the current review.

Searches

Three databases (PsycINFO; CINAHL; MEDLINE) were searched via EBSCO for articles published between January 1, 2007 and December 2015. The search screening process is displayed in Figure 1. The keyword search terms used in the database search were: suicid* AND self-harm* OR resilien* OR recovery OR protect* OR cop* OR preven* OR reduc*. Limiters included the dates of publication, publication type (systematic reviews and meta-analyses), and English language only. Further articles were sought using a hand-search of the reference lists of the quality assessed included papers.

Inclusion & Exclusion Criteria

To identify protective factors for suicide, suicidal ideation and behaviours that can be easily and feasibly assessed in time-limited emergency healthcare settings, high-quality systematic reviews with meta-analyses and/or narrative synthesis for all age groups were explored. A review of reviews, rather than including primary studies, was chosen due to the broad nature of the subject and to allow the creation of a summary of reviews in a single document (Smith, Devane, Begley & Clarke, 2011). Furthermore, reviews of reviews have the potential to be a useful tool for the translation of health evidence and decision-making (Hartling, Chisholm, Thomson, & Dryden, 2012). Reviews were identified during the searches using the database publication type limiter. Reviews including findings of protective factors for suicide were included, even if the review itself was not exclusively exploring protective factors alone, i.e. if a review paper was more broadly reviewing epidemiology of suicide, or exploring both risk and protective factors. A date restriction of 2007 to 2015 was

imposed, as an earlier review (McLean et al., 2008) covered research prior to these dates.

Reviews were excluded using the following criteria:

- Protective factors which could not be easily and feasibly be assessed in emergency healthcare settings, e.g., genetic findings relating to protective factors, problem solving skills etc.
- Either irrelevant or with no generalisable application to emergency healthcare settings, e.g., research specifically exploring indigenous populations
- Reviews of suicidal behaviours such as self-harm, that is not explicitly linked with suicidal intent.
- Protective factors for suicide in confined, non-hospital settings, e.g., in prisons or care homes
- Assisted suicide or euthanasia
- Primary studies and non-systematic/meta-analytic reviews
- Evaluations of non-pharmaceutical interventions for suicidal behaviour
- Grey literature
- Those published in a language other than English

Screening & Data Extraction

Data were exported from each database and de-duplicated. Titles and abstracts were screened and assessed for their adherence to the inclusion criteria by one reviewer (KMCC), then appraised by a second (JM). Full-texts were also screened for inclusion where appropriate e.g., when there was insufficient information in the abstracts to assess adherence to the inclusion criteria. Data were extracted from articles that met the inclusion criteria by one reviewer (KMCC) using a standardised form, and checked by another (JM). Any disagreements could be discussed with a third reviewer, but this was not required.

Quality Appraisal

Articles that met the inclusion criteria were quality appraised for final inclusion using: A Measurement Tool to Assess Systematic Reviews (AMSTAR) checklist (Shea et al., 2007). The tool consists of 11 items, including the assessment of literature searching, quality of included studies, and assessment of publication bias. The AMSTAR has good agreement, face, content and construct validity, reliability and feasibility for measuring the methodological quality of systematic reviews (Shea et al., 2007; Shea et al., 2009). Of the available 11 AMSTAR item scores, 8-11 are characterised as high quality, 4-7 are medium quality, and scores of 0-3 are low quality. A square root sample ($N = 5$) of the completed quality assessments were independently appraised by a second reviewer (JM).

Data Synthesis

A narrative synthesis was undertaken due to likely substantial heterogeneity from the wide variation in study designs and populations in the reviews of suicide protective factors that could be relevant to emergency healthcare settings for example, varying age groups and health problems. The data synthesis followed Popay et al.'s (2006) guidelines on conducting a narrative synthesis within a systematic review, and is therefore based on established guidelines for best practice. Key findings relating to protective factors were extracted by two researchers (KMcC & JM) from each paper into a summary table. These were then compared across papers to identify higher level themes and categorised similar protective factors together into meaningful, and similar, groupings. The themes were then synthesised further following critical discussions until consensus on the structure and content included in each theme was reached (Table 1.). Some reviews may appear more than once in the results section, as they included data of protective factors of suicide that are relevant to multiple categories.

Results

Study Selection & Quality

The search in PsycINFO generated 984 articles, CINAHL a further 364, and MEDLINE found 1801 articles. The combined search yielded a total of 3149 articles, of which 1350 were removed as duplicates. Of the remaining 1799 that were screened for inclusion using titles, abstracts, and full texts, 1775 were excluded as they did not meet the inclusion criteria. One article (Haw, Hawton, Gunnell, & Platt, 2014) did not explicitly meet the inclusion criteria of being either a systematic review or meta-analysis, and was however a selective review. It was decided that this review would be retained as although selective in its reporting of results, the review was conducted systematically including using database searches, search terms, and inclusion of possible studies from reference lists. Furthermore, the review undertook its own quality assessment. With this selective review included, a total of 24 reviews were assessed for quality and final inclusion using the AMSTAR checklist. Of the 24 reviews, four were found to be of poor quality, twelve were medium quality, and the remaining eight were judged to be of high-quality and were included in the review. The mean overall AMSTAR score was 6.83, and the mean AMSTAR score of the high-quality articles was 9.38, indicating a distinction between the overall quality rating and the quality rating for the included articles. The reference lists of the eight high-quality included reviews were hand-searched, to identify other reviews to include; however none met the inclusion criteria.

Narrative Synthesis of Evidence

The eight included reviews comprised seven systematic reviews employing a narrative synthesis of results and the remaining review conducted a meta-analysis. The heterogeneity of the studies further emphasises the suitability and appropriateness of the narrative synthesis approach adopted in the current research. The narrative synthesis produced evidence for

protective factors that could feasibly be assessed in emergency healthcare settings i.e., those that could quickly be assessed by a healthcare professional, and were categorised into four overarching themes: Social Support; Family; Sexuality; and Health. Social support comprised of three sub-themes: Social Connections; Group Membership; and Internet Use. The theme Family consisted of four sub-themes: Family Connectedness; Marriage; and Pregnancy and Children. Sexuality was identified as a theme in its own right, as was the final theme, Health. Each of the themes and sub-themes are discussed below, with each overarching theme's relevance and possible contribution to and/or practical application to emergency healthcare assessments of suicide being discussed in a concluding sub-section.

Social Support

This theme highlights the importance of belonging to and engaging with others in a social way; whether that is via organised groups or on a more personal, one-to-one level. It is comprised of three sub-themes (Social Connections; Group Membership; and Internet Use) that relate to social support within suicide protective factors and that could be applied to suicide assessment in emergency healthcare.

Social Connections

For the purpose of this sub-theme, Social Connectedness refers to having social connections (e.g., friends, close relationships) and does not include research with family members. Three reviews contributed to this sub-theme (Lakeman & FitzGerald, 2008; Nock et al., 2008; Pompili et al., 2013). Lakeman and FitzGerald (2008) conducted a systematic review of 12 papers investigating how people live with and overcome being suicidal. The populations included in this review varied and included both young people and older adults. Results found that reconnection with others was associated with recovery or resolution crisis, also reconnecting with friends and seeking (or accepting) help from others is pivotal to

recovery. Furthermore, teenagers reporting a close relationship with at least one person who was significant in their lives, or they established a spiritual/religious connection with, was perceived as instrumental in overcoming negative self-perceptions, inspiring hope, providing meaning and moving past being suicidal.

Nock et al. (2008) conducted a systematic review broadly investigating the prevalence, trends in, and risk and protective factors for suicidal behaviour in the United States and cross-nationally. Results suggested that social connectedness outside the context of religious affiliation were shown to be significantly associated with lower rates of suicidal behaviour. Pompili et al. (2013) conducted a review of 18 studies exploring Post-Traumatic Stress Disorder (PTSD) in veterans and suicide risk and found that being satisfied with social networks was protective for suicidal risk in veterans without PTSD, however this was less protective in veterans reporting PTSD symptoms. This theme clearly indicates that having social connections can mitigate suicide risk in individuals, and this is something that could easily be assessed by emergency healthcare staff during assessment.

Group Membership

In three papers, group membership was an important sub-theme (Haw et al., 2014; Lakeman & FitzGerald, 2008; Nock et al., 2008). In the Nock et al. (2008) review, results were also presented for religion as a protective factor and suggested that religious beliefs, religious practice, and spirituality have been associated with a decreased probability of suicide attempts. Potential mediators of this relation, such as moral objections to suicide and social support, also seem to protect against suicide attempts among persons at risk. However, it was noted that suicides were more frequent in rural areas, which had greater religiosity. Haw et al. (2014) conducted a selective review to explore contributory and ameliorating factors associated with economic recession and suicide. Results found that membership of the

church appears to exert a protective effect on all-cause mortality. Furthermore, in times of economic recession in similar countries, those with higher organisation membership, such as trade unions, sports groups or political organisations, have lower all-cause mortality rates, including suicide. Lakeman and FitzGerald (2008) conducted a systematic review of 12 qualitative research papers addressing how people live with and get over being suicidal. Results found that formal support groups and professional contact for HIV-infected gay men to be helpful in protecting against suicide, as connections with healthcare professionals were formed. This theme further emphasises social support as a protective factor of suicide, and whether an individual is part of an organised group can be feasibly assessed in emergency settings.

Internet Use

A further sub-theme within Social Support is Internet Use which describes how online social support is a potential protective factor for people at risk of suicide. One review was identified for this sub-theme. Daine et al. (2013) conducted a systematic review exploring the effects of internet use on suicide. Sixteen studies were included in the review and suggested positive influences of internet forums and internet media, in which internet forum users were found to develop relationships, connect with others, meet people with similar problems, and to seek empathy and support rather than advice and used more generally as a coping mechanism. Whether an individual uses the internet for social support could be taken into account by emergency healthcare staff. However, it should be noted that the review also reported negative influences of the internet on suicide and suicidal behaviour, such as learning about suicide online; suicidal ideation in relation to online gaming overuse; and cyberbullying.

Family

This theme explores protective factors in relation to family and is comprised of three sub-themes: Family Connectedness; Marriage; and Pregnancy and Children. Three systematic reviews from the eight included in the current review contributed to this theme (Lakeman & FitzGerald, 2008; Nock et al., 2008; Pompili et al., 2013).

Family Connectedness

Family Connectedness refers to social support and connections of family members. Nock et al.'s (2008) systematic review identified that perceptions of family support and connectedness have been shown to be significantly associated with lower rates of suicidal behaviour. The review by Lakeman and FitzGerald (2008) addressing how people live with and get over being suicidal and found that reconnecting with family as pivotal to recovery. In terms of practice, assessing an individual's family support may indicate whether that individual is at risk.

Marriage

This sub-theme reports findings of one paper related to protective effects of marriage for suicide and suicidal behaviour which could feasibly be assessed in emergency healthcare settings. Pompili et al. (2013) conducted a review of 18 studies exploring PTSD in veterans and suicide risk. Results found that being married was a protective factor for suicidal risk in veterans without PTSD, however this was less protective in veterans reporting PTSD symptoms.

Pregnancy & Children

This sub-theme included one paper that reported findings of suicidal behaviour in relation to pregnancy and children. Nock et al. (2008) found that being pregnant protects against suicide. This was concluded by assessing autopsy reports of females who had completed suicide, and finding that the number of suicides of pregnant women was only one-third of that expected. The review also suggests that having young children in the home also are protective against suicide; however findings suggest that an exception of this would be increased risk in women with postpartum psychosis, although results find this to be too uncommon to have any impact on the general positive effect. It should also be noted however, the presence of young children is associated with a significantly increased risk of first onset of suicidal ideation.

Sexuality

This theme of Sexuality included one review paper and describes how an individual's sexuality and suicide risk can be mediated by family. Bouris et al. (2010) explored parental influences on the health and well-being of lesbian, gay and bisexual (LGB) youth. A total of 31 quantitative articles were reviewed, which examined how parents influence LGB youth's experience with suicide. Results found that parent-child relationships characterised by closeness and support again emerged as having a protective association with suicide among LGB youth, with family connectedness being negatively associated with suicide. Furthermore, adolescents who felt more cared about by their parents are significantly less likely to have suicidal behaviours. In line with these results, family support of young LGB individuals should perhaps be assessed during a suicide risk assessment.

Health

This theme included two systematic reviews relating to medication for depression (Barbui, Esposito, & Cipriani, 2009), and epilepsy (Ferrer et al., 2014). Barbui et al. (2009) conducted a meta-analysis of over 200,000 depressed individuals (over eight studies) exposed to selective serotonin reuptake inhibitors (SSRIs). Among adults, SSRI exposure significantly decreased the risk of completed or attempted suicide (random-effect *OR* 0.57, 95% CI 0.47–0.70). Furthermore, among elderly people (aged 65 or more years), exposure to SSRIs had a significant protective effect (random-effect *OR* 0.46, 95% CI 0.27–0.79). However, for adolescents, SSRIs have been found to significantly increase risk of completed or attempted suicide in adolescents (*OR* 1.92, 95% CI 1.51–2.44).

Ferrer et al. (2014) conducted a systematic review exploring the relationship between antiepileptic drugs (AEDs) and suicide across all ages and genders. A total of 11 studies were included, and a narrative synthesis was employed. The evidence of any relationship between AEDs and suicide was mixed, as mixed evidence was found as to whether AEDs may have a protective effect on patients with bipolar disorder. Also, it was concluded that there was not enough data to confirm the association between an increased risk of suicide and AEDs as a group. However, with regard to individual drugs, they concluded that carbamazepine and valproic acid were protective. The results of this theme could easily be implemented into practice, as a patient's prescription history could be taken into account during suicide risk assessment.

Discussion

The current review adds to the protective factor literature relevant to emergency healthcare settings, which is thus far under-researched. This is of particular importance due to the number of individuals who go on to complete suicide after attendance at emergency

departments (Da Cruz et al., 2011; Gairin et al., 2003). The identified protective factors can be utilised into practice to hopefully impact on suicide prevention in these settings. Similarities to past research and known protective factors for suicide that could easily be assessed in emergency healthcare settings were found, including the importance of social and familial connectedness, and the impact of health and medication.

A strength of the current review is that it identified emerging protective factors such as the role that family support has in mediating suicide in LGB individuals (Bouris et al., 2010). This was previously identified as a key gap in the protective factor literature by McLean et al. (2008). Assessment that includes LGB individuals support networks is easily identifiable by healthcare professionals in emergency healthcare settings, and is a particularly important finding as LGB individuals have an increased risk of suicidal ideation, suicidal behaviour and suicide attempts in comparison to heterosexuals (King et al., 2008). Moreover, a recent UK survey of over 1500 LGBT young people, results found that nearly one in four LGB young people have tried to take their own life at some point (Guasp, 2012). Therefore, emerging findings in this area may aid in identifying individuals at risk.

However, Bouris et al. (2010) noted the dearth of prospective research with LGB individuals; in particular, a lack of longitudinal findings and research with ethnic minorities and rural communities. Also, results tended to focus on negative and not positive outcomes. Furthermore, the review did not investigate protective factors of suicide with transgender individuals indicating a literature gap, which has also been identified in the risk factor literature (McClatchey, Murray, Rowat & Chouliara, 2017), and as nearly half of trans people under 26 have attempted suicide (Stonewall, 2017), this is an area of research with a high need of investigation.

Another emerging protective factor is internet usage; in particular the social support aspects of internet usage (Daine et al., 2013). This protective factor and social support of this type could be easily identified by healthcare professionals in emergency healthcare settings. This is a positive finding which indicates that there has been an expansion in research in this previously under-researched area. However, the Daine et al. review of internet use is based on a small number of papers, often with no clear outcome measures. This is to be expected, as this area of research is in relative infancy as worldwide internet users has risen by a quarter between 2005 and 2014 (International Telecommunication Union [ITU], 2015). Internet use had also risen in younger populations, and research has found that support from virtual communities, and the use of mobile apps designed for suicide prevention in this population can have a positive effect on suicide and suicidal behaviour self-injurious thoughts and behaviours (Shand et al., 2013; Tseng & Yang, 2015). Conversely, prior research has also found that internet usage and its associations may increase the risk of suicidal behaviour (van Geel et al., 2014). Therefore, further research should investigate the impact of internet use, such as online support and the use of apps, on suicidal behaviours and whether its usage may act as a protective factor or not, as this is recent social change which is thus far under-researched.

In support for the rationale of conducting an update of the existing protective factor literature, Haw (2014) found that group membership (e.g., the church, trade unions, sports groups or political organisations) have a protective effect on all-cause mortality, including suicide. Given the impact that the global recession has had on suicide rates (Barr et al., 2014; Change et al., 2013), assessment of those who have been impacted by the recession, e.g., unemployment, redundancies, could consider this type of social support at a mitigating factor.

With regards to group membership and aligned with prior literature (Kleiman & Liu, 2013), social support was found to be a protective factor of suicide. Within the Group

Membership sub-theme of Social Support, one of the three included reviews discussed findings of support groups and professional contact for HIV-infected gay men to be helpful in protecting against suicide (Lakeman and FitzGerald, 2008). Suicide protective factor research was previously identified as a gap in the literature by McLean et al. (2008). Although individuals living with HIV are a distinct group, living with HIV can perhaps be characterised as chronic illness, thus results could perhaps be generalised to individuals with other chronic illnesses, however further research is warranted to assess whether support groups may mediate suicide risk for other conditions. Furthermore, within the theme Family, which included Family Support and Connectedness. It should be noted that one of the three reviews included was addressing suicide risk among veterans only (Pompili et al., 2013). Although veterans can be considered a sub-group of the population, the United Kingdom has an ex-service community of around 6.2 million people (The Royal British Legion, 2014), and suicide in men aged 24 years and younger who had left the Armed Forces is approximately two to three times higher than the general population (Kapur, While, Blatchley, Bray & Harrison, 2009). This indicates that assessment of suicide risk in veterans is a significant issue, thus the inclusion of this review, although exclusively exploring protective effects in veterans, is an important finding.

The current research identified that exposure to SSRI's significantly decreased the risk of completed or attempted suicide among adults and elderly individuals with depression (Barbui, Esposito, & Cipriani, 2009). This could easily be assessed in healthcare settings, and may aid clinical decision making regarding suicide risk in depressed patients. However, the current review identified mixed results regarding whether AEDs protect against suicide risk (Ferrer et al., 2014), hence more research is needed in this area before this can be reliably included in assessing protective factors for suicide within emergency admissions. In addition, a factor as specific as AED use, while relevant within the healthcare setting, is not applicable

to the majority of prospective patients within an emergency healthcare setting. Therefore, the feasibility of assessing for this potential protective factor of suicide within an emergency healthcare setting is also not entirely practical. With the present level of reliability, and taking into account potential feasibility issues, this factor may not be suitable for regular assessments with all patients, and instead could be considered instead only with those known to have epilepsy and be using AEDs, by a specialist who is knowledgeable in this area.

Utilising Findings into Practice

The current review adds to the protective factor literature, which thus far have been under-researched (Centers for Disease Control and Prevention, 2015; Halfon et al., 2013). The review has identified known protective factors that could easily be assessed in emergency healthcare settings, for example whether an individual has perceived sufficient social support. Emerging protective factors were also identified, such as online support (Daine et al., 2013). This type of protective factor could easily be incorporated into assessment. The review also identified that close familial relationships provided protective effects in LGB youths. According to Van Orden (2012), current suicide risk assessment tools do not contain guidelines for clinicians on how to tailor risk assessment and crisis management procedures for diverse patient populations, which includes patient sexual orientation. Therefore, the findings of this review, that having supportive family members when identifying as LGB can mediate risk, could be applied and incorporated into future suicide risk assessment procedures tailored for sexual orientation. As this is a high risk group (Guasp, 2012), this may be beneficial in identifying individuals that need further assessment and support.

Protective factors are frequently overlooked in clinical assessments and risk assessment forms (Simon, 2011), and widely used risk assessment tools such as the SAD PERSONS

scale (Quinlivan et al. 2014) do not assess for protective factors. Given that emergency departments are often where those contemplating suicide or who complete suicide in the near future attend (Da Cruz et al., 2011), formal assessment of protective factors may identify those in need of further in-depth assessment and support planning. Simon (2010) notes that protective factors should be assessed to provide an essential balance in risk assessment, and the current review provides evidence of protective factors that can be incorporated into assessment in emergency healthcare settings.

Current State of Suicide Protective Factors Research

From the narrow results of this review, it is evident that suicide protective factors are remarkably under-researched. Of the total eight included reviews, not one explored protective factors of suicide exclusively; and the majority of the included reviews only reported on a small number of studies of protective factors from a larger subset (e.g. Lakeman & Fitzgerald, 2008; Nock et al., 2008). This highlights the paucity of specific investigations into protective factors alone and shows a need for this research. Updating and furthering this research, may aid in the identification and management of individuals who are at immediate risk of suicide and those who are not. Simon (2010) notes that in healthcare, protective factors require the same thorough assessment as risk factors, and that an assessment that considers only risk factors is incomplete. However, formal assessments of protective factors are rare in the suicide literature (Nock et al., 2008), therefore further research exclusively exploring protective factors may be beneficial in aiding future suicide risk assessment in emergency healthcare settings.

Strengths, Limitations, and Risk of Bias

A strength of the current review is that it updates existing suicide protective factors that are easily identifiable in emergency healthcare settings. The review only used papers which were assessed as high-quality, increasing the robustness of the conclusions reached. This update is warranted, as suicide is affected by external factors such as the economy and social change (Barr et al., 2014; ITU, 2015). This is helpful in identifying areas requiring further attention (e.g. within the LGBT community) and those which have strong evidence to be incorporated into assessment. A review of reviews, rather than including primary studies, was chosen due to the broad nature of protective factors, and this systematic review of reviews allows the creation of a summary of reviews in a single document (Smith et al., 2011). A limitation of this is that primary studies were not included in the search, which could have led to a potential loss of recent and relevant protective factor research, and which resulted in limited findings. This could have been mediated by including the medium quality assessed reviews to increase the numbers of included reviews and the scope of the results. However, it was deemed that the inclusion of only high-quality assessed reviews may increase the robustness of the concluded protective factors. Future research could benefit from further reviews of primary studies of protective factors of suicide, from which their applicability to emergency departments could perhaps be drawn.

Finally, none of the included reviews are specific to emergency healthcare settings, however the reported findings could easily be applied to these settings. A further limitation of the review is that a meta-analysis was not undertaken as meta-analysis is regarded as being superior to narrative synthesis of systematic reviews (Fagard, Staessen, & Thijs, 1996). Following the Cochrane Handbook for Systematic Reviews, forest plots were not generated

in this study, as they are discouraged when only a single study is found for a particular outcome (Schünemann et al., 2011), as was present in much of the findings.

Conclusions

Overall, the current review updates suicide protective factor literature and provides findings that could potentially be implemented into suicide risk assessments for use in emergency healthcare settings. Furthermore, the review identified areas where further research is needed, in particular protective factors among LGBT individuals, and emerging protective factors such as internet usage. Overall, further suicide protective factor research is needed as protective factors are often overlooked in comparison to the exploration of risk factors, and may be beneficial in assessing an individual for risk of suicide in healthcare settings.

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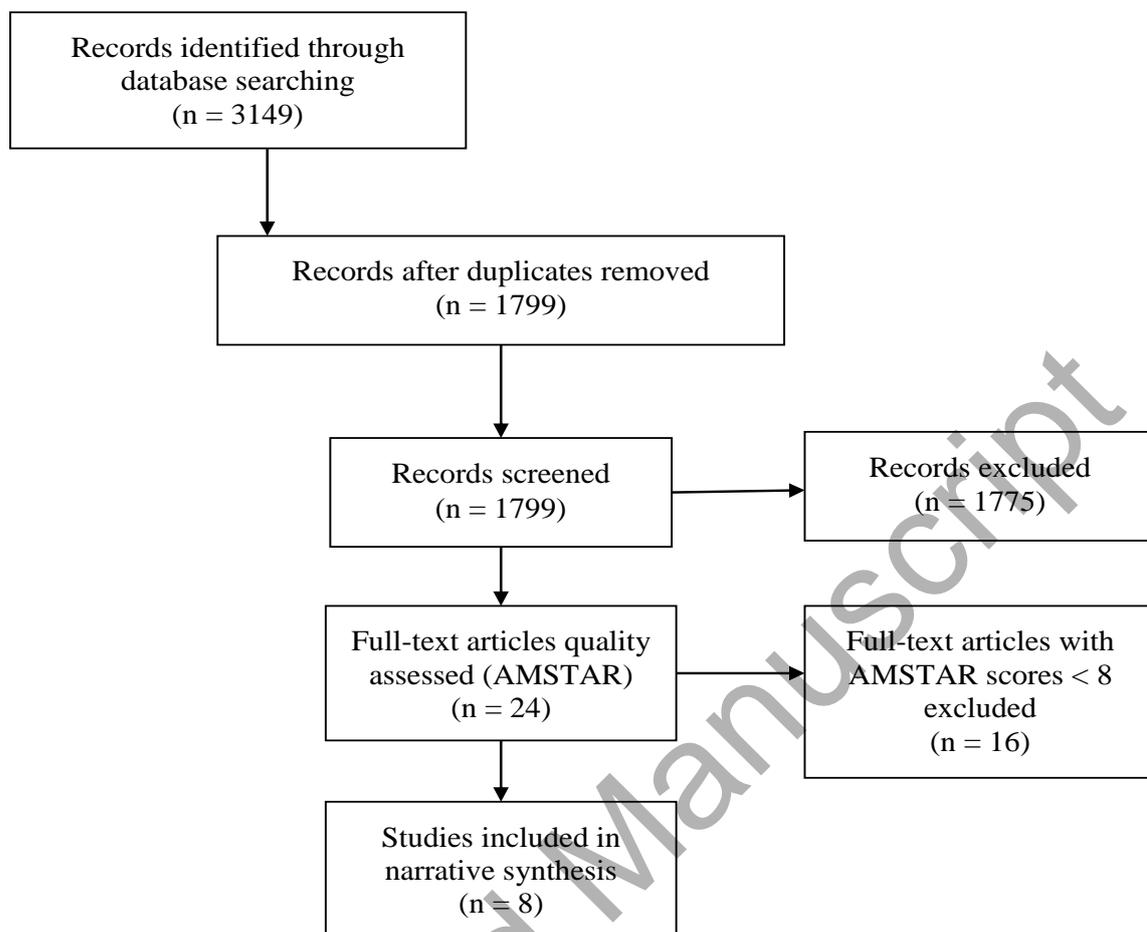


Figure 1. Flowchart of Included Studies

Table 1
Identified Suicide Protective Factors

Suicide Protective Factors	Number of Reviews Identified
Social Support	
Social Connections	3
Group Membership	3
Internet Use	1
Family	
Family Connectedness	2
Marriage	1
Pregnancy & Children	1
Sexuality	1
Health	
Medication	2

*some reviews were applicable under more than one category, and so the numbers when totalled in the right hand column will not equal the number of reviews included within the narrative synthesis.