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# **Reviewing the effectiveness of interventions for suicide prevention**

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## Contents

List of tables.....	3
1. Background & introduction.....	4
2. Summarising evidence of effective suicide prevention interventions .....	5
2.1. Community-based suicide prevention strategies .....	5
2.2. Suicide prevention training.....	6
2.3. Postvention support .....	6
2.4. Public information campaigns .....	7
3. Methodology .....	8
Limitations & caveats .....	9
4. Green & blue care.....	10
Key points:.....	11
5. Complementary therapies.....	12
Key points:.....	13
6. Creative therapies.....	14
Key points:.....	15
7. Mentoring, advocacy, befriending and peer support .....	16
Key points:.....	16
8. Physical activity .....	18
Key points:.....	19
9. Counselling and psychotherapy .....	20
Key points:.....	22
10. Crisis de-escalation interventions.....	23
Key points:.....	23
11. Mindfulness & meditation .....	25
Key points:.....	26
13. Family therapy and social support.....	27
Family therapy/support .....	27
Social support.....	28
Key points:.....	29
14. Tables of academic articles.....	31
Glossary of terms.....	78
References.....	79

## List of tables

Table 1: Number of articles identified for inclusion.....	8
Table 2: Academic literature for green and blue care .....	31
Table 3: Academic literature for complementary therapies .....	34
Table 4: Academic research for mentoring, advocacy and peer support .....	36
Table 5: Academic evidence for physical activity .....	38
Table 6: Academic literature for creative therapies .....	44
Table 7: Academic literature for counselling and psychotherapies .....	46
Table 8: Academic literature for crisis de-escalation.....	54
Table 9: Academic literature for mindfulness & meditation .....	59
Table 10: Academic literature for family therapy/support and social support .....	66

## 1. Background & introduction

The suicide prevention strategy for Northern Ireland (NI) was updated in 2019 when the Department of Health published Protect Life 2 (PL2)<sup>54</sup>. The Strategy outlines two key aims:

- To reduce the suicide rate in NI by 10% by 2024; and
- Ensure suicide prevention services and support is delivered appropriately in deprived areas where suicide and self-harm rates are highest.

The Strategy is guided by 10 principles that highlight the need for robust evidence-based practice that is person-centric, coordinated, collaborative and multi-disciplinary that bridges the spectrum of statutory, academic and community organisations. Implementation of the Strategy is led by the Public Health Agency (PHA).

To support the drive for evidence-based practice, the Health Intelligence Unit, PHA has undertaken a series of rapid reviews examining the evidence for a wide range of suicide prevention interventions. The rapid reviews supplement an earlier review on '*What works for suicide prevention*' (summarised in [Section 2](#)). The evidence review in 2018 included a high-level overview of helplines, awareness, media reporting, psychotherapies and pharmacotherapies, restricting access to means, screening for suicidal risk, community networks and suicide prevention development officers, web-based interventions, education and training, postvention and public information campaigns.

The current series of rapid reviews furthers this earlier work by focusing on the evidence base relevant to a wide range of interventions currently being delivered in community settings in Northern Ireland. To identify the scope of the review, engagement was carried out with the community and voluntary sector in Northern Ireland to identify the interventions used for suicide prevention. This resulted in a range of interventions which were grouped in a way that seemed meaningful and allowing for the reviews to be completed. Interventions included in the 2018 review were specifically excluded from the rapid reviews, resulting in nine topics for review.

This paper first summarises the key findings from the review conducted in 2018. The methodological approach for the series of rapid reviews is then outlined. This document is set out in an accessible way: tables providing further information about studies included in the reviews are summarised in the appendices. The main body of the document outlines high-level findings for each review topic, covering an overview of the evidence and key points noted. .

**Please note:** this body of work does not cover all suicide prevention initiatives and is focused on suicide prevention initiatives that are delivered in our communities in NI. Other bodies of work are also available that will extend the scope of the work included. For example, see also NICE guidance NG105 '*Preventing suicide in community and custodial settings*'<sup>130\*</sup>.

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\* See also [Evidence | Preventing suicide in community and custodial settings | Guidance | NICE](#)

## 2. Summarising evidence of effective suicide prevention interventions

This section summarises key findings from an unpublished review on the efficacy of suicide prevention initiatives which covered four broad areas:

1. Community-based suicide prevention initiatives;
2. Suicide prevention training;
3. Public information campaigns; and
4. Postvention support.

### 2.1. Community-based suicide prevention strategies

Specifically, community-based suicide prevention strategies explored the efficacy of interventions delivered at the 'grass-roots' level. The review focused on interventions delivered in the community but excluded those delivered in schools, hospitals or custodial settings. Key findings included:

- **Restricting access to means and public places** has strong evidence of effectiveness<sup>120</sup>. Restricting access to means includes (but is not limited to) restricted sales for medications or poisons, restricting or changing the composition of lethal substances (such as gas), erecting barriers at bridges, other high areas, or at train/subway stations, engaging with families to restrict access to means in the home if someone is vulnerable, gun control etc. Some argue that restricting access to means cannot cover all eventualities (eg hanging) and may encourage the substitution of means<sup>143</sup>. However, restricting the access to means remains a key element in many individual suicide safety plans and a central component of many countries' suicide prevention efforts.
- There is strong evidence of effectiveness in the promotion of and adherence to **media reporting guidelines** for suicide prevention. Addressing inappropriate media reports of suicide, regionally and locally, is beneficial in minimising suicide contagion, reduce stigma and promote help-seeking behaviour while raising awareness of services and support available for individuals in suicidal crisis. Inappropriate media reporting has been associated with romanticising, glamorising and normalising suicide and consequently increases in suicides<sup>26, 101</sup>.
- **Interventions to encourage help-seeking behaviour** are essential to combat stigma and encourage individuals in need to seek help. Help-seeking strategies may benefit from a targeted approach to reach vulnerable groups and individuals (eg males, youth etc<sup>157</sup>).
- **Crisis helplines** are efficacious in addressing immediate suicidal crisis, as well as reducing psychological pain, depression, hopelessness, suicidal thoughts and behaviour<sup>128, 100, 95</sup>. However, the long-term benefits are unknown and some authors note that suicide rates do not decrease in countries with crisis helplines which may suggest they are inefficacious suicide prevention strategies<sup>105</sup>. In Northern Ireland, for example, crude suicide rates have remained relatively stable. However, crisis helplines are offered as a multi-strategy approach to suicide and it is unknown whether suicide rates would increase without crisis helplines.
- **Psychotherapies and pharmacotherapies** are a central component of suicide prevention that may reduce suicidal behaviour<sup>120</sup>. Psychotherapies are also addressed in this review.
- **Community networks and Suicide Prevention Development Officers (SPDOs)** consist of key individuals who build networks and collaboration at the community level. Their work will include raising awareness of suicide prevention, signposting to support services, working to reduce stigma, and provide suicide prevention training. In Northern Ireland, an evaluation showed the benefit of SPDOs included accessing hard-to-reach vulnerable populations and

linking them to support<sup>149</sup>. Benefits included greater cohesion between community-based suicide prevention services and agencies through collaboration and partnerships. SPDOs also had a high degree of local knowledge of services and activities that was complementary to other community-based suicide prevention work.

- There is much debate about **screening for suicidal risk** is an effective suicide prevention strategy. Research indicates that a small proportion of those identified as high risk for suicide will go on to take their own life<sup>148</sup>. With poor predictive value, suicide risk screening may be clinically ineffective<sup>27</sup>.

## 2.2. Suicide prevention training

Suicide prevention training aims to challenge stigma, improve participants' knowledge, attitudes and understanding of suicide, and to increase trainees' confidence and ability to intervene with an individual they are concerned about by accessing appropriate help/services. Key findings include:

- There is evidence that training **key gatekeepers** (ie those who may be more likely to be in contact with individuals or groups who may be at high risk<sup>89</sup>) is associated with increases in usage of mental health (MH) services. Those trained are more likely than untrained counterparts to directly ask vulnerable individuals if they are thinking of suicide and link that person to relevant support<sup>102</sup>. However, some authors argue that the long-term efficacy of gatekeeper training is unknown<sup>15</sup>. This may be mitigated by providing refresher training<sup>45</sup>.
- **Evaluation of training programmes in the Northern Ireland context** found that *safeTALK*<sup>137</sup>, *ASIST*<sup>150</sup> and *MHFA*<sup>151</sup> were effective in improving knowledge and understanding of suicide, identifying suicidal risk or warning signs, changing attitudes, reducing fear about intervening with someone, increasing confidence in intervening and increasing knowledge and services and support available. In 3-6 month follow-up studies, some trainees did put their training into practice.
- **E-learning and web-based suicide prevention training** is considered supplementary to face-to-face training and may be used to overcome practical barriers associated with face-to-face training<sup>78</sup>. (Note that this method of training has been widely utilised as a result of the COVID-19 pandemic and imposed government restrictions. However, this summary has not reviewed evidence in relation to this recent move to e-learning approaches resulting from COVID-related restrictions). Despite being cost-effective to deliver<sup>52</sup>, there is a paucity of research examining the efficacy of e-learning or web-based suicide prevention training. This highlights the need for more evaluation work and in particular should address safety concerns as the identification of and support provided to vulnerable participants is difficult.

## 2.3. Postvention support

Postvention support is offered to those who are bereaved by suicide and can include the deceased's family and friends, wider social circle, community and potentially strangers (depending on the circumstances). The biopsychosocial impacts are wide ranging and can include suicidal risk<sup>16, 119, 144</sup>. Key findings include:

- Overall, the evidence of efficacy for postvention support is mixed. Bereavement support programmes can have positive impacts for those bereaved by suicide, at least in the short term<sup>8, 5, 51, 12</sup>. Long term impacts are under researched;
- There is some evidence of efficacy in that those receiving support can lower the intensity of uncomplicated grief, anxiety and depressive symptoms<sup>113, 138, 38</sup>. However, little is known about the mechanisms that postvention support works and for who based on the desired outcomes or characteristics of individuals receiving postvention support.

- Efficacy of postvention is lower for children and young people due to a lack of robust evaluation work including this cohort<sup>94</sup>;
- Postvention support is multifaceted and consists of multiple intervention strategies making it difficult to ascertain which strategies work best. Many interventions used in postvention support are also included in the current review. These include psychotherapies, complementary therapies, creative therapies, family and social support etc.

## 2.4. Public information campaigns

Public information campaigns (PICs) are an increasingly popular strategy to affect change in health behaviours at the population level. Mass media PICs utilise multiple platforms (eg TV, radio, billboards, newspapers, digital advertising etc) to promote positive health behaviours. It is unsurprising that this method is also considered as a suicide prevention strategy. Key findings are as follows:

- Evidence is mixed in relation to public information campaigns as a suicide prevention strategy. Short-term improvements include increased MH literacy and decreased stigma<sup>61, 72, 19</sup>. The impact on help-seeking behaviour is unclear but there is some evidence that PICs can increase calls to crisis helplines<sup>173, 135, 19</sup>. However, there is no evidence that PICs reduce suicidal thoughts and/or behaviour<sup>177, 72, 120</sup>.
- There are risks associated with PICs directly tackling suicide that need to be considered. Risks include normalising suicide<sup>35</sup> and stimulating imitation behaviour or maladaptive coping methods<sup>26</sup>. This is particularly the case for vulnerable individuals and/or groups (eg young people)<sup>182, 101</sup>.
- More research is needed to ascertain the impact of PICs to address suicide prevention<sup>120, 74</sup>. Such research should include a focus on key messages, desired outcomes, and impacts on vulnerable individuals and/or groups.

### 3. Methodology

The rapid reviews were conducted using a systematic approach but are not intended to be systematic reviews. Searches were conducted in five electronic databases for each of the nine review topics. Electronic databases included psycINFO, psycARTICLES, EMBASE, Web of Science, and CINAHL.

Given the wide range of reviews to be conducted, strict search terms were applied and focused on relevance to suicide and the intervention of interest. Search results that included self-harm were included (but not specifically searched for), and articles relating to wider aspects of mental health (MH) were excluded if the link with suicide prevention was not clear. Articles were limited to English articles published between 2011 and 2021 (to date).

Where evidence was particularly weak, the search terms were broadened and additional electronic databases were searched (including *Google Scholar*). However, this was only required for a small number of reviews.

Psychotherapies were included in the 2018 review but have again featured in the rapid reviews due to differing operational definitions used in the engagement exercise. It was considered appropriate to restrict identified research to systematic reviews and meta-analyses to reduce demand on resources.

The selection of articles for inclusion in the rapid reviews followed an iterative process. Initially, titles and abstracts were scanned to ensure they met the inclusion/exclusion criteria. Articles were excluded if they did not meet these criteria. If the article content was unclear from the title and abstract, full articles were then scanned. Articles that were not clear in meeting the criteria were excluded. The remaining articles were then read in full and summarised in the tables included in the appendices before being summarised in the rapid reviews.

Table 1 summarises the total number of articles scanned (titles and abstracts), the number of articles to be read in full, and the number of articles included in the review.

**Table 1: Number of articles identified for inclusion**

Review topic:	Total articles returned n	Articles for full read n	Articles to be included in review n
Green & blue care	1,738	33	7
Complementary therapies	1,994	20	5
Creative therapies	641	31	10
Mentoring & advocacy	1,117	22	11
Physical activity	1,634	37	25
Counselling & psychotherapies	280	31	14
Crisis de-escalation	1,425	30	9
Mindfulness & meditation	844	38	19
Family therapy/support	1,299	58	23
Peer/social support	1,595	13	6



## Limitations & caveats

The following outlines a number of limitations and caveats that should be noted when interpreting the findings of the series of rapid reviews performed:

- Whilst a systematic approach was taken to conducting the literature searches, the following rapid reviews are not a full systematic review of the literature. Due to the extent of reviews to be conducted, search terms were agreed by the authors prior to conducting the searches. Whilst articles relating to self-harm and wider MH impacts were included where relevant, they were not included as specific search terms.
- The interventions included in the rapid reviews were identified by a process of engagement with the community and voluntary sector in Northern Ireland in 2020. Operational definitions of interventions identified in the academic literature may not reflect the interventions currently provided.
- The types of interventions described in the engagement process were categorised by the authors through an iterative process in ways that were deemed meaningful in relation to the academic evidence. However, it was difficult to define the categories with some interventions appearing in a number of searches. For example, yoga appeared in searches for meditation and physical activity. The authors' judgement was used in these cases and is referred to in the main bodies of the reviews, where appropriate.
- Given the focus on interventions currently provided, novel and innovative interventions were not the focus of the rapid reviews. For example, emerging evidence for e-health is not included.
- The interventions focused on as part of these reviews are examined in isolation. However, suicide prevention strategies with individuals may employ multiple interventions. The rapid reviews examine the impact of interventions in isolation and potential cumulative effects of interventions are not included, nor are multi-component interventions.
- In a final note, caution is advised when making definitive conclusions about the evidence. Where evidence is weak, it should not be regarded as evidence of ineffectiveness but should be considered as an area where evaluation and evidence is requires development.

#### 4. Green & blue care

Green care and blue care refer to interventions using the environment (plants, water, animals and/or landscapes) in which individuals take part in a combination of activities which are intended to promote health and may/may not be limited to physical activity<sup>69, 179, 161</sup>. Green care is land-based and blue care is water-based. Green and blue care are based on the socioecological model of health which indicates that health is impacted by the interactions between individual, the community, and the physical, social and political environments<sup>14</sup>. The recent rise in popularity of these types of interventions has also gained the attention of Public Health England and the UK Houses of Parliament who note the benefits on health overall<sup>86, 152</sup>.

Evidence showing the benefits of green and blue care on mental wellbeing is growing with benefits including reduced stress and depression, improved mood, social inclusion, restoration of cognitive attention, greater optimism, improved self-esteem, self-belief, self-efficacy, confidence, happiness and quality of life, mindfulness, reduced PTSD symptoms, and psychological restorativeness<sup>14, 23, 40, 76, 123, 129, 146, 161</sup>. The benefits of green and blue care on physical and mental health (MH) are reported across the lifespan. Whilst evidence of the benefits of green and blue care on MH is growing, evidence of impact on suicide prevention is limited.

Baybutt et al. 2018<sup>14</sup> and Farrier et al. 2019<sup>66</sup> evaluated the impact of therapeutic horticulture programme on UK prisoners' health. The first phase of evaluation (2008–12) was relatively small-scale with five focus groups with prisoners and five one-to-one interviews with prison staff. The evaluation reported the programme benefited prisoners' MH by providing them with a sense of pride and achievement, increasing their self-belief and interpersonal skills. Prisoners were also improved in mindfulness techniques. Health benefits were reported as increased physical activity (PA), healthier eating and improved sleep. The second phase of evaluation (2013–15) included 897 prisoners from eight prisons with baseline and 12-week post-programme follow-up and one-to-one interviews with 12 prisoners. Whilst wider benefits on MH were again reported, the therapeutic horticulture programme was found to reduce incidence of self-harming behaviour.

A case study reported benefits of a therapeutic horticulture programme on a woman who was bereaved by suicide<sup>123</sup>. The gardening aspect of the programme was reportedly a 'cure for pain' and a distraction but allowed the woman to participate in gardening activities that symbolised her life and her loss. The authors argue that the therapeutic aspects of this work allowed the counsellor to engage with the woman in a meaningful and non-traditional way that facilitated bereavement support. However, it is unclear whether the reported benefits were solely due to therapeutic horticulture as the woman was also attending one-to-one counselling and a support group.

Whilst these studies focus on the combined strategies of activity in green space and therapy (ie green care), other studies have explored the benefits solely of being in green spaces. This has typically involved large-scale national health survey data combined with postcode mapping to identify access to green spaces. In Korea, less access to green spaces was associated with increased risk of depression, suicide ideation (SI) and suicide attempts (SAs)<sup>127</sup>. In contrast, access to green spaces in a Canadian study was associated with higher levels of self-reported stress and psychological distress<sup>46</sup>. The authors reported that benefits of access to green space on MH are impacted by neighbourhood-level characteristics and outcome measurement.

It is clear that evidence is emerging to support the benefits of green and blue care on physical and MH generally. The paucity of evidence exploring the impact of green and blue care on suicide prevention specifically means there is much we do not yet know<sup>131</sup>. Early research shows promise, particularly where therapeutic engagement is part of the intervention. It is clear that much more research is needed in this area to understand how green and blue care impact health and any factors that might influence efficacy.

**Key points:**

- Green and blue care are gaining popularity with evidence of benefit on MH;
- Gaining recognition among Public Health England and UK Houses of Parliament;
- Benefits on MH include reduced levels of stress, reduced symptoms of depression, improved mood, social inclusion, restoration of cognitive attention, greater optimism, improved self-esteem, self-belief, self-efficacy, confidence, happiness and quality of life, mindfulness, and psychological restorativeness;
- Benefits on physical health (not reported in this review);
- Insufficient high quality evidence of impact on suicide prevention;
- Early research showing promise when therapeutic engagement is an element of the intervention.

## 5. Complementary therapies

Complementary therapies are used to describe any type of treatment that is used to support or replace usual forms of treatment. This rapid review centred on aromatherapy, massage, acupuncture and Reiki. Complementary therapy can be defined as any healthcare strategy that is not conventional<sup>62</sup>. This definition is quite wide and can include anything from diet to mindfulness, homeopathic treatment or acupuncture etc. With such a wide definition, searches returned articles for yoga, mindfulness, exercise, dance, music therapy, art therapy and green care. See other rapid reviews within this document: [Mindfulness & meditation](#), [Creative therapies](#) and [Green & blue care](#). Searches also included articles for animal-based therapy and religious practices which are excluded from this review.

Five articles met the inclusion criteria (ie related to suicide prevention and included one of the four complementary therapies above) and related to aromatherapy and acupuncture. No articles were found for massage or reiki in relation to suicide prevention. The small number of articles identified highlights the lack of robust, peer-reviewed evidence for the impact of complementary therapies on suicide prevention.

In terms of MH, a literature review and a review of randomised control trials concluded insufficient evidence of the benefits of acupuncture on depression<sup>175, 153</sup>. Another systematic review exploring the benefits of aromatherapy on mood disorders also reached a conclusion of insufficient evidence<sup>121</sup>.

Two studies (by the same author) examined the effect of acupuncture on suicide ideation (SI) and salivary cortisol<sup>141, 142</sup>. The authors drew from the theoretical assumption that suicidal behaviour occurs when cortisol levels are dysregulated<sup>133</sup>. In a case study and a small RCT (n=24), Pirnia et al.<sup>141, 142</sup> reported that receiving acupuncture twice a week for four weeks was associated with reduced SI and regulated cortisol levels. However, participants were also receiving methadone treatment following drug addiction and it would not be possible to ascertain whether reduced SI was impacted by other factors. Another pre- post-test study investigating acupuncture reported that one treatment per week for four weeks led to significant reductions in perceived stress and improved emotional wellbeing among military veterans<sup>1</sup>. Taken together, these studies indicate some benefits of acupuncture but more research would be required to make firm conclusions.

An evaluation of a multimodal programme delivered in the United States showed promise in reducing SI and associated symptoms among veterans<sup>183</sup>). As a group at high risk of suicide in USA, 126 veterans were referred by their clinician to an intensive 4-week treatment programme which required them to attend five days per week for three hours per day. The intervention included acupressure, meditation, mindfulness, narrative therapy, music therapy, line dancing, yoga, acupuncture, sleep hygiene, spirituality, nutrition and cooking, financial literacy and assertiveness training. In total, 65% of participants reported having thought about or attempted suicide in their lifetime and 18% had a red-flag on their military record. Authors reported that the intervention was effective in improving depression, hopelessness and SI and that these effects were stronger among those identified as having a history of SI or suicide attempt (SA). However, as the authors noted, the effects of this intervention may be due to the multimodal approach. Furthermore, analytical breakdowns were not provided by the intervention types engaged in, and there was low uptake in treatments of relevance to this rapid review (ie acupressure and acupuncture). The long-term efficacy of the intervention is also not reported. Consequently, it not possible to ascertain if any of the reported benefits were associated with the therapies focused on in this review.

Findings in relation to aromatherapy are mixed. In a small scale RCT (n=42) Won & Choi (2017)<sup>194</sup> reported no association between aromatherapy and SI or salivary cortisol. However, in a pre- and post-test design study, participants were assigned to the intervention (n=68) or control groups (n=72)<sup>6</sup>. In the intervention group, participants who received body contact care with aromatherapy

had reduced depressive symptoms, anxiety and SI. Whilst findings are mixed, the type of oil used or combination thereof may have differing impacts but the evidence base is currently too limited to ascertain this.

**Key points:**

- Few studies have explored the relationship between complementary therapies and suicide prevention;
- Evidence that is available is limited by small samples, differing intervention protocols, specific target populations (eg veterans) and lack of robust evaluation. The focus on veterans and those with addiction issues and serious mental illness, and cultural impacts mean that findings cannot be generalised to the general population.
- Three systematic reviews included in this review reported insufficient evidence of the benefits of acupuncture or aromatherapy on mood disorders;
- Insufficient evidence to make conclusions about the efficacy of complementary therapies for suicide prevention;
- More evidence is needed to determine the efficacy of acupuncture, aromatherapy, reiki or massage in helping to prevent suicide. In particular, multi-component interventions which offer complementary therapies as a part of an overall package of care should be robustly evaluated.

## 6. Creative therapies

Creative therapies offer an alternative to allow individuals to explore complex, traumatic or powerful emotional states in a non-threatening way that can help the individual to make sense, externalise and reframe issues, integrating learning to allow for self-exploration and development<sup>28, 77, 171</sup>. This rapid review focused on creative therapies including music, arts, play, crafts, writing, dancing, psychodrama, visual arts (such as photography).

There is some evidence to indicate that creative arts may be efficacious in helping to promote mental wellbeing and alleviate the symptoms of mental health (MH) problems. Benefits are reported to include reduced anxiety, depression, psychological trauma and may be effective in helping hard to reach groups<sup>21, 147, 167</sup>. However, literature covering all of the individual creative therapies and/or in relation to suicide prevention is scarce.

The searches performed returned 10 articles to be included in the review. The majority of articles referenced art therapy (n=6), music therapy (n=2; both by the same author), creative writing (n=1) and multiple creative therapies (n=1). There were no articles identified for play therapy, crafts, or dancing. Notably, the types of evidence identified varied from reflective autobiographical accounts of the benefits of art to evaluations of interventions. Variations were also noted in the range of interventions evaluated including case studies, training/workshop type training, to therapeutic work with clients.

Two articles presented autobiographical reflections of the benefits of art and creative writing/poetry in helping them deal with a death by suicide in their family<sup>81, 190</sup>. Both articles highlighted how art and writing can help individuals to make sense of their experiences and grieve for their loss. The articles were moving in the experiences described and worthy for inclusion in this review. However, evaluating therapeutic interventions was not the focus of these articles and, as such; it is not possible to assess the benefits reported or how they may apply to others.

Two of the six studies focusing on art therapy, focused on evaluating formal interventions. Blomdahl et al. (2018)<sup>17</sup> reported on a blind multi-centre RCT in Sweden comparing the efficacy of phenomenological art therapy programme and treatment as usual (TAU). The intervention consisted of 10 one-hour art sessions with a new art task assigned for each session with TAU offering a range of other therapies (eg acupuncture, electroconvulsive therapy, cognitive behavioural therapy, pharmacological etc.). Data were collected baseline and 13 weeks post treatment. The authors reported that depressive symptoms reduced for participants receiving art therapy group but not TAU. In terms of suicidal behaviour, suicide ideation (SI) reportedly improved for both groups with no differences post-intervention between groups. This suggests that art therapy can be as effective as TAU in treating SI but may be more efficacious for MH benefits. The second study focused on the SI of 14 female participants who survived an ISIS attack in Iraq and had been subjected to physical and sexual abuse<sup>3</sup>. Participants took part in an art therapy intervention consisting of three one-hour sessions per week for two months and involved drawing what they thought of as the non-violent aspects of nature. Post-intervention, the authors reported significant decreases in SI, the wish to die, feelings of capability to carry out a planned suicide and significant increases in wish to live. There was no change in the reason to live among participants and the authors felt this could be indicative of future ideation and/or attempts among the cohort. However, although all participants had histories of telling someone about their suicide plans which may indicate their reason to live was a stable protective factor.

Other art-based evidence was did not involve therapeutic treatment for individuals experiencing suicide but examined the benefits of art-based activity in suicide prevention. For example, Rasmussen et al. (2017)<sup>156</sup> analysed administrative data for 335 Aboriginal prisoners in Australia where prisoners could voluntarily attend an art programme that was available every day of the week. The authors reported that increased days attending the art programme were associated with 19% decreased incidence of suicide/self-harm risk.

Silverman et al. (2013)<sup>171</sup> described a case study of a suicide symposium where 18 individuals representing a range of different cultural, community and religious organisations in Canada. The authors reported that creating art to raise awareness of suicide allowed participants to engage with a difficult topic, engage with meaningful dialogue and create a desire to take action. Similarly, Gerlach and Greene (2020)<sup>77</sup> reported that providing artistic supplies and space allowed university students in the USA to engage with the topic of suicide prevention and combat stigma.

Focusing on film-making, photography and psychodrama techniques, Testoni et al. (2020)<sup>176</sup> evaluated a school-based training programme to help students cope with their negative emotions following the death of a peer. A control group was used to evaluate the efficacy of the training programme for postvention support. The training programme was designed to help trainees to explore the topic of death, the meaning of life and admitting that life is precious even if difficult at times. The intervention had no impact on resilience, hopelessness or psychological wellbeing. There was some indication that the intervention helped participants to overcome difficulties in identifying and communicating their feelings. However, psychometric testing indicated the measurement used had low reliability and caution should be used when interpreting this finding.

The final two studies included in the review were not focused on suicide prevention but explored the benefits of music in reducing loneliness among older, retired men. These two studies were included in the review given the risk factors for suicide includes loneliness and men. Lindblad and deBoise (2020)<sup>112</sup> and Lindblad (2021)<sup>111</sup> did not involve a formal therapeutic intervention but described a group of men coming together to share in listening and talking about their musical interests. All men responded to recruitment advertisements but did not know each other before the group sessions. The findings were mixed across the two studies with Lindblad and deBoise<sup>112</sup> concluding that music provided social and emotional rewards. Whereas, Lindblad<sup>111</sup> reported that whilst participants enjoyed attending the sessions, the sessions did not facilitate self-disclosure or social connectedness and thus did not reduce loneliness.

This review included a wide range of evidence in relation to some creative arts and suicide prevention. The focus of evidence is wide ranging including self-reflections, evaluations of therapeutic interventions, analysis of prison administrative data, and descriptive studies of group-based activities. The focus of suicide prevention activity is also wide ranging including helping individuals experiencing suicidal crisis, postvention support, and suicide awareness and training. This highlights the versatility of arts-based work that can be used to address suicide prevention. However, this variability in a small number of studies contributing to suicide prevention makes it difficult to draw any conclusions about how creative therapies might be effective in combating suicide.

### **Key points:**

- Insufficient evidence to highlight the role of creative therapies (in general) in helping to address suicide and/or self-harm;
- Insufficient evidence to identify any specific creative therapy that might be efficacious in helping to prevent suicide and/or self-harm;
- Wide variability within the small number of articles making up the evidence base;
- The evidence included shows the versatility of arts-based work that can contribute to a range of suicide prevention activity but requires more research.

## 7. Mentoring, advocacy, befriending and peer support

Mentors are informal and naturally occurring, or formal and facilitated by an organisation (ie school or community organisation). Mentor relationships require a reciprocal relationship, developmental benefits for the mentee and regular and consistent interaction which can be maintained through a number of mediums (ie face-to-face, telephone, e-mail)<sup>82</sup>. Traditionally, mentors were present in the occupational setting to support career progression of individuals with a move to increasingly providing psychosocial support. The proposed mechanism by which mentoring has an effect on suicide and suicide-related outcomes can be explained by the Interpersonal Theory of Suicide which states that by increasing feelings of belongingness and reducing feelings of being a burden to others this may decrease an individual's desire or capacity for suicide<sup>180</sup>. Indeed, qualitative evaluation of a football-based intervention aimed at resilience building for recently redundant men (potentially at-risk of suicide) highlighted mentoring and peer support components as key active ingredients of their intervention<sup>58</sup>.

Published evidence addressing the potential for mentoring interventions to reduce suicide and suicidality was sparse. There were no studies identified for befriending and suicide prevention. Evidence covered interventions which had a direct and/or indirect effect on suicidality. Interventions varied widely ranging from light touch 'friendly support'<sup>39</sup> to intervention components grounded in therapeutic approaches (eg Acceptance Commitment Theory)<sup>104</sup> and populations of study were heterogeneous (ie some with a history of SAs and others with potentially increased suicide risk such as feeling lonely).

Though mentoring demonstrated feasibility and participants reported satisfaction<sup>106</sup>, evidence from two RCTs was mixed with regards to the impact of mentoring on psychological or Interpersonal Theory of Suicide variables<sup>39, 102</sup>. Findings across the two studies were similar with regards to suicide-related outcomes indicating that mentoring was not effective for reducing suicide-related outcomes; however, more evidence is needed to explore this effect further. In the first study, SI was reduced for both groups but group differences were not significant. For related psychological outcomes there were significantly greater reductions in depression and anxiety and improvements in burden among peer companionship participants compared to treatment as usual (TAU). Improvements in feelings of belonging were similar for both groups. There was no difference in intervention effects according to gender<sup>39</sup>. Loneliness was significantly more improved for the intervention than the control group in the second RCT. Community connectedness, thwarted belongingness, self-esteem and depression changed in the expected direction (ie benefits for the intervention group), but this did not reach levels of statistical significance. Suicide ideation declined at a similar level for both groups. The number of participants engaged in suicidal behaviour during the study was low and similar across intervention (n=8) and control (n=7) groups<sup>102</sup>.

There are a small number of ongoing studies aiming to evaluate the impact of mentor interventions on suicidal outcomes, the findings of which will not be published for some time<sup>83, 104, 118</sup>. A small body of evidence from observational studies<sup>185, 59</sup> is mixed regarding the relationship between having a natural mentor and suicidality.

### Key points:

- What constitutes as mentoring varies within the literature;
- Observational studies report mixed findings with regards to whether or not having a mentor has benefits for suicidality outcomes;
- Very little experimental evidence has examined the impact of mentoring on suicidality and related MH outcomes;
- Evidence was mixed for psychological symptoms, but no benefits for suicidal outcomes due to mentoring were reported;



- There are a small number of ongoing experimental studies which will add to the evidence base on the role of mentors on suicidality outcomes in the future.

## 8. Physical activity

To maintain good health and wellbeing, the World Health Organisation physical activity (PA) guidelines<sup>195</sup> recommend at least 150 minutes or 75 minutes of moderate or vigorous activity (respectively) per week, and muscle strengthening exercises at least three days per week for adults. Children are recommended to be active for at least one hour each day and to undertake muscle strengthening exercises at least three days a week. The proposed mechanism by which PA may improve suicidality is indirect via factors such as sleep, depression and positive mental health (MH)<sup>50, 20</sup>. Other proposed mechanisms include social support if PA is undertaken as part of a group or team<sup>11, 145</sup>.

Most cross-sectional evidence has focussed on high school or college students. A few studies investigated specific populations (eg veterans in rehabilitation for post-traumatic stress disorder<sup>18</sup> and lesbian, gay and bisexual students<sup>90</sup>); these studies have found that PA may be protective against suicidal thoughts and/or behaviour.

Sport participation was associated with less reporting of suicide ideation (SI) or suicide attempts (SAs) in previous year for high school students. However, for some female ethnic minority groups' (eg Asian- American, African- American and Hispanic-American) participation in sport was associated with increased likelihood of reporting suicide-related outcomes in the past year<sup>110</sup>.

Supporting evidence for PA participation and non-suicidal self-injury (NSSI) was found in a small number of studies<sup>18, 91</sup>, whereas a third study found no association between PA and NSSI among high school students<sup>115</sup>.

Studies which did not disaggregate analysis by sex found that PA was associated with reduced reporting of suicide-related outcomes<sup>97, 79, 92</sup>. However, it is not possible to determine cause and effect from cross-sectional studies. For instance, does PA reduce suicidality or are individuals who do not experience suicidality more likely to participate in PA?

Most cross-sectional studies looked at the association of PA and suicidality disaggregated by sex because of the sex differences that are already known regarding suicide-related behaviours. For males, most evidence supported the association of PA and lower suicide-related outcomes<sup>140, 178, 67, 124</sup>. Other studies did not support an association<sup>98</sup> or only partially supported an association<sup>80, 163</sup>. The evidence for females was much more mixed with some studies finding that PA is associated with less reporting of suicidality<sup>98, 140, 124</sup>, whereas, other studies found that PA may be related to an increase in suicidality reporting<sup>178, 67</sup>. The nature of PA may be important for females, for example, increased frequency of PA was related to less suicidality, whereas, PA duration and intensity had a different relationship: both low and high levels of each were associated with increased reporting of suicidality<sup>80</sup>. PA at different ages may also be important for females; PA was related to less suicidality reporting for younger (11-14 year olds), but increased reporting for older (15-20 year olds) girls<sup>163</sup>.

Systematic reviews are considered to be the gold standard level of evidence. A systematic review which identified 29 studies reported there is clear evidence from observational studies that PA is associated with reduced levels of SI among adults (aged 18 years to 64 years old), but the evidence was not clear for adolescents or older adults (aged 65 years old and over). Evidence from intervention studies was limited and mixed<sup>181</sup>.

Beyond the studies included in the aforementioned review, limited additional longitudinal and experimental evidence (n=2 studies) was identified which investigated the impact of PA on suicide-related outcomes. One longitudinal study<sup>20</sup> found that high levels of PA at baseline were related to reduced reporting of suicidality at three-year follow-up among German university students. A RCT<sup>132</sup> investigating the impact of low versus high dose yoga among individuals with major

depressive disorder found that there was some evidence of resolution of SI without intent, though only a small proportion of participants reported suicidality during the study.

Exercise in moderation may be important when considering the role of PA in suicidality. Exercise dependence (akin to DSM-IV criteria for substance dependence) was found to be associated with increased suicidality-related outcomes<sup>60, 159</sup>. Excessive exercise includes exercising despite pain and injuries which may be considered a form of self-harm – an increased capacity for suicide which is part of the Interpersonal Theory of Suicide<sup>180</sup>.

**Key points:**

- The physical and MH benefits of PA and exercise are well-known;
- There is a large body of observational evidence which points to the potential that PA may be promising for suicide-related outcomes;
- However, age, ethnicity and gender may be important considerations for PA may have benefits or harms in terms of suicide-related outcomes;
- Research demonstrates that too little (sedentary behaviour) or too much exercise (excessive exercise) may have a detrimental effects on suicidal outcomes; moderation of PA may be important;
- The limited available experimental and longitudinal evidence of the role of PA in suicidality is mixed.

## 9. Counselling and psychotherapy

Talking therapies is an umbrella term used to describe a range of counselling and psychotherapeutic approaches. Despite the breadth of theoretical approaches that exist, they can be generally characterised by the establishment of a therapist-client relationship involving “verbal communication, structured and purposeful therapist-patient encounters, and the establishment of a therapeutic relationship” (pp. E2)<sup>44</sup>. There is existing evidence that counselling and psychotherapy can have many benefits for a range of mental health (MH) problems<sup>87, 158, 34, 2</sup>.

A number of systematic reviews addressing suicidality were available in the peer-reviewed, academic literature. Identified reviews for this rapid review were heterogeneous in scope meaning that it was difficult to determine a clear picture of the efficacy of psychotherapy for suicidality. For example, some reviews focussed exclusively on psychotherapy or psychosocial interventions (including psychotherapy) more generally as compared to either a treatment as usual (TAU), no treatment condition or a less intensive/other treatment condition on specific outcomes (ie suicide attempts (SAs)) or more general psychological outcomes including suicidality.

Twenty-nine RCTs of psychosocial interventions compared to TAU, enhanced usual care (EUC), lower intensity or alternative treatment for adults who had engaged in self-harm in the previous 6-months were included in one review<sup>84</sup>. A meta-analysis of Cognitive Behavioural-based psychotherapy (inclusive of Cognitive Behavioural Therapy (CBT) and Problem-Solving Therapy (PST)) compared to control groups found a reduction in repetition of self-harm at 6- and 12-months for the treatment group (n=12 and n=10 studies contributing data, respectively). For completed suicides there was no treatment effect found (n=15 studies). A comparison of Dialectical Behaviour Therapy (DBT) with a control group found no treatment effect for self-harm or completed suicides.

A comprehensive review of a range of study types (including controlled studies, before and after studies, evidence reviews) found evidence for the effectiveness of counselling and psychotherapy delivered to individuals at risk of suicide (current suicide ideation (SI) or history of attempts) and any psychiatric diagnosis. Three included reviews found evidence for the effectiveness of CBT (one review) and PST (two reviews), whereas, a fourth review found no evidence of the efficacy of psychosocial interventions for self-harm and suicide. Specifically, a meta-analysis of studies which included a control group found a moderate treatment effect on suicidality outcomes; sub-group analysis for individual therapy types (CBT, DBT and PST) found that all were effective. When examining factors which may explain treatment effectiveness, fewer hours of therapy (<6 versus >6<20), inpatient setting (versus other settings) and shorter follow-up times (versus longer follow-up times) had greater treatment effects. Similar analysis was undertaken for before-and-after studies and a large treatment effect over the course of therapy was found. However, only DBT and PST were effective, whereas, fewer hours of therapy (<6 versus >6<20) and studies with less than 50% of women represented were most effective<sup>192</sup>.

In a companion review, Winter et al. (2014)<sup>193</sup> conducted a meta-synthesis of qualitative studies of clients or therapists involved in counselling or psychotherapy and identified three overarching themes relating to the process, effectiveness and barriers/facilitators of psychotherapy. In terms of sub-themes relating to effectiveness, decreases in self-destructive behaviour and improvements in quality of life (including sub-themes dealing with emotions, improvements in interpersonal life and aspirations) were identified<sup>193</sup>.

One review synthesised twelve studies which examined the impact suicide-related behaviour from psychoanalytic or psychodynamic therapies which were delivered in healthcare and community settings, to child and adult populations. Findings were inconsistent which is attributable to outcome measurement. For example, there was a significant reduction in the number of patients who attempted suicide at 12-month follow-up in the therapy compared to TAU (n=3 studies), but no treatment effect was found when looking at the number of suicide attempts (SAs) during the same

follow-up period (n=2 studies). At 6-month follow-up, a beneficial treatment effect was found for the number of patients who engaged in self-harm (n=2 studies); this was not replicated for 12-month follow-up (n=3 studies) nor for the number of self-harm episodes at 12-month follow-up (n=3 studies). There was no evidence that psychotherapies were more or less beneficial for specific populations (adult versus adolescents), self-harm history (acute versus chronic) or length of intervention<sup>22</sup>.

A review of reviews brought together the evidence for psychosocial interventions targeting suicide-related behaviours among children and young adults (under 25 years old). The review noted small study samples and under-powered studies and concluded that evidence is unclear regarding a treatment effect for SI or SAs<sup>43</sup>. Devenish et al. (2016)<sup>53</sup> reviewed psychological treatments for suicidal-related outcomes for 11-19 year olds; their findings demonstrate how treatment effects may differ depending on the comparison group. For instance, when psychotherapies were compared to pharmacotherapy or CBT was compared to other psychotherapies there were reductions in suicide-related outcomes across all groups. However, in a smaller number of studies comparing psychotherapies to TAU, a significant treatment effect for a reduction in suicidality was observed<sup>53</sup>. A further review focussing on interventions to prevent or reduce suicidal behaviour among older adults reported on two psychotherapy studies only with inconsistent evidence that interventions are effective<sup>134</sup>.

Many of the identified reviews focussed on clinical populations and it is important to be mindful that the findings from these reviews may not be generalisable to the general population. However, one review of adults with borderline personality disorder (BPD) and a history of suicidal behaviour compared the effectiveness of less intensive (<100 hours within 12 months) to more intensive psychotherapy (>100 hours within 12 months) on depression and suicidal acts. Three trials each respectively were identified for each level of psychotherapy intensity. There was insufficient evidence to conclude whether more or less intense treatment has greater benefit for individuals<sup>49</sup>. A second review targeting psychotherapy among individuals with BPD reported substantial variability across studies in the number of individuals not initiating or discontinuing treatment and estimate that psychotherapy would not be effective for around 40% of individuals<sup>103</sup>. In a third review of adults with BPD, when psychotherapy alone was compared to control groups, beneficial treatment effects were found for self-harm and suicide. However, when psychotherapy in addition to TAU was compared to TAU only, this treatment effect was not apparent. It is worth noting that fewer studies contributed to the latter analysis (range 2-6 studies) than the former analysis (range 5-13 studies)<sup>44</sup>.

Though one review focussed on populations presenting with SI, SAs or plans, populations included individuals with a mental illness (eg BPD and mood disorders). CBT or DBT were the most prominently represented therapies and studies were observational so cause and effect cannot be determined. Nevertheless, therapies were associated with a reduction in SI and SAs for the majority of studies<sup>122</sup>.

A systematic review and meta-analysis of RCTs comparing TAU, placebo or waiting list to psychological treatment for adults with depression on SI, suicidal risk (n=3 studies) and hopelessness reported no treatment effect<sup>47</sup>. Evidence was not clear regarding the effectiveness of psychotherapy for prevention of suicidal behaviour among individuals with alcohol problems<sup>88</sup>.

Only one review was identified which assessed the evidence for a specific type of therapy, in this case, CBT for suicidal thoughts and/or behaviour. Small to medium effects of face-to-face CBT for SI and behaviours were observed. When e-delivered CBT was compared to face-to-face CBT, no between group differences were reported and reductions in SI was observed from pre- to post-treatment for both groups<sup>108</sup>.

**Key points:**

- A wide range of comparison groups (including no treatment, TAU or alternative treatment groups) were utilised across review studies;
- It is difficult to determine the effectiveness of psychotherapy as results may differ depending on comparison group;
- Often, small, underpowered studies were included in reviews meaning it can be difficult to trust conclusions drawn in light of methodological issues;
- There is limited evidence to suggest that less intensive therapies may be more effective in the context of psychotherapy for suicidality, but this needs further exploration;
- There is some evidence that specific psychotherapies may be effective;
- Evidence for the effect of psychotherapy on suicidality among specific populations was unclear eg older adults, individuals under 25 years old, individuals with BPD and individuals with alcohol-related issues;
- Evidence of no treatment effect of psychotherapy on suicide-related outcomes for individuals with depression;
- Equivocal effects for face-to-face delivered and e-CBT were found.

## 10. Crisis de-escalation interventions

Within the local community and voluntary sector in NI, crisis de-escalation was described as immediate intervention responding to an individual in acute crisis (ie actively suicidal). It is reactive and concerned with keeping the person safe and well in that moment, and working with them to reduce the distress experienced during the crisis. Identified academic literature reported on crisis de-escalation which was provided by statutory health care or other service providers (ie police) or settings (ie schools). Examples of crisis interventions in the academic literature are reported below and were not solely focussed on suicidal crisis:

A school-based crisis intervention (*Prevention of Escalating Adolescent Crisis Events (PEACE)*) protocol was implemented for young people who presented with homicidal and/or suicidal crisis. The intervention involved a comprehensive risk assessment, treatment and safety planning as well as referrals to a school-based clinician. The protocol was applied to 42 students across 68 crisis events within the 2013-14 school years. There were no completed suicides or suicide attempts (SAs) that needed medical intervention on the same day the protocol was applied. Students at immediate risk for self-harm (n=5) were admitted to hospital within two weeks; one student was hospitalised twice within the same year and a further student required medical attention for a medication overdose months following implementation of the protocol. Twenty students subsequently went on to be supported by other mental health (MH) services<sup>125</sup>. It is important to be mindful that for one school, the base rate of suicides is likely to be low and it can therefore be difficult to attribute the absence of attempted or complete suicides to the PEACE protocol.

Mobile crisis services include an Australian joint police-mental health response unit where MH is suspected during a police call<sup>109</sup>, a Swedish triage system to dispatch a psychiatric emergency response unit<sup>114</sup>, and a mobile crisis intervention service in Connecticut, USA<sup>68</sup>. Subsequent intervention, service use or referral, as well as, user experience were evaluated as outcomes; no suicide-related outcomes were reported.

Interventions involving safety plan/crisis response plan (CRP) interventions for individuals presenting in crisis to an Emergency Department (ED)<sup>174</sup> or military personnel presenting in an emergency<sup>24</sup> were identified. Intervention components include: recognising warning signs, employing internal coping strategies, utilising social contacts as a distraction from suicidal thoughts, contacting family members or friends, contacting MH professionals or agencies and reducing access or use of lethal means. A case study was reported in the literature<sup>174</sup>. An RCT of CRPs versus safety contracts found that CRPs may reduce SAs and SI<sup>24</sup> and CRPs among this cohort were reported to be acceptable<sup>25</sup>.

Family interventions implemented in ED when a young person presents in crisis were identified in the literature. The Family Intervention Suicide Prevention (FISP), is a brief youth and family crisis therapy session in the ED. Components include: reframing the SA as a problem to be solved, providing education to families (including restricting access to means), identifying triggers and supports and development of a safety plan. Evaluated in an RCT comparing the FISP to enhanced usual care (EUC), no between-group difference in suicidal outcomes was found<sup>9</sup>. A similar intervention, the Family-Based Crisis Intervention (FBCI) was compared to treatment as usual (TAU) and found that lower levels of suicidality over the course of the study was reported by young people in both groups<sup>187</sup>.

### Key points:

- It was difficult to identify community crisis de-escalation interventions delivered by community and voluntary organisations within the academic literature;
- Identified academic literature evaluated crisis de-escalation services provided by statutory health care or other organisations (eg police, schools);

- Crisis interventions were heterogeneous in terms of their target populations, components, how they were delivered and the outcomes assessed making comparisons difficult;
- There is insufficient evidence regarding the effectiveness of crisis de-escalation for suicidal-related outcomes.



## 11. Mindfulness & meditation

With roots in Buddhism, the focus of mindfulness and meditation (referred to throughout this section as mindfulness-based interventions, MBI) is on developing awareness of the current moment and learning to accept this experience in a non-judgemental way<sup>33, 95, 37, 117</sup>. Mindfulness is grounded in the assumption that there is no singular truth and truth can change depending on experiences. Thoughts and emotions are regarded as passing mental events and this viewpoint helps to prevent internalisation of negative or destructive thoughts and emotions<sup>109, 95, 70</sup>. By this separation between the self and our thoughts, mindfulness can aid in the process of desensitisation of distressing sensations, thoughts and/or emotions that the suicidal individual experiences<sup>95</sup>. This separation also allows the individual to accept the negative experiences and understand that they will pass which is essential for suicide prevention.

Benefits for mental wellbeing has been documented<sup>33, 95</sup> and includes improved mental wellbeing generally, improved behavioural and emotional regulation and improved impulse control. MBI have been associated with reductions in anger, aggression, anxiety disorders and/or symptoms, depressive symptoms, psychological distress, rumination, alcohol and/or drug misuse. Higher levels of life satisfaction, quality of life, positive affect and self-compassion have also been associated with MBI.

Whilst MBI are thought to be less stigmatising than other methods of support<sup>109</sup>, little is known about how and who mindfulness-based interventions work best for<sup>95</sup>. Furthermore, studies exploring the benefits of MBI in reducing suicidal thoughts and/or behaviour are limited<sup>109</sup>. Whilst the mental health (MH) outcomes of MBI may be proximally linked to suicidal behaviour, several authors caution against assuming that improved mental wellbeing associated with MBIs will translate to suicide preventative measures<sup>71, 117</sup>.

Please note that dialectical behavioural therapy (DBT) was not included within the search terms for this review. Whilst DBT draws on mindfulness, it is aligned with Cognitive Behavioural Therapy (CBT), and was developed to help individuals with borderline personality disorder with suicidal thoughts and/or behaviours<sup>31</sup>. See section [Counselling and psychotherapy](#) for a more in-depth discussion.

Searches of academic databases returned 19 articles deemed suitable for review. These included four review papers, four RCTs, one case study, seven pre-post design studies and one post design study. Where specified, the articles mainly focused on mindfulness-based cognitive therapy (MBCT; n=7) followed by generic MBI (n=3) and mindfulness-based stress reduction (MBSR; n=2). Outcome measures were largely focused on suicide ideation (SI; n=9) with only seven measuring suicidal behaviour.

The systematic reviews included studies published pre-2020 and also reported that MBI have a positive impact in reducing SI in adult<sup>31, 165</sup> and adolescent populations<sup>33, 154</sup>. In addition to wider benefits on mental wellbeing, Raj et al. (2020)<sup>154</sup> reported MBI also has a positive impact on feelings of burdensomeness and thwarted belongingness (central components of the Interpersonal Theory of Suicide), in adolescents at least. Whilst moderating effects have been largely ignored in the literature, Schmelefske et al. (2019)<sup>165</sup> reported that the impact of MBI in reducing SI is greatest in older participants and female participants. Methodological impacts were also noted across the systematic reviews. The inclusion of a control group lessens the size of effect found whilst comparison against those on waiting lists can over-inflate positive findings<sup>154, 165</sup>. Furthermore, findings may be impacted by outcome measurements<sup>140</sup>. Indeed, the RCT described above by Forkmann et al. (2016)<sup>70</sup> reported that MBI positively impacted only one out of two measures of SI.

All four RCTs evaluated the effects of MBCT on SI. Three studies were focused on secondary analysis of outpatient data for adults with a history of depression<sup>13, 70, 71</sup> and one focused on 'left

behind' children in China<sup>116</sup>. Lu et al.'s (2019)<sup>116</sup> study reported that MBCT had a positive impact on reducing SI among children with findings approaching (but not reaching) statistical significance. The RCTs focusing on adult populations compared MBCT (consisting of 8 sessions lasting 2.5 hrs) to treatment as usual (TAU<sup>13, 70</sup>) or those on a waiting list for treatment<sup>71</sup>. Although suicidal behaviour was not measured by any of the studies, they found that MBCT was more efficacious than TAU in reducing SI. The studies by Forkman et al.<sup>70, 71</sup> reported that the reduction in SI was held when changes in depression were controlled for but the later study reported this was dependent on the outcome measure used.

Cross sectional studies demonstrated some positive findings for the efficacy of MBI in reducing suicide-related outcomes but findings were mixed and limited. Evaluation studies employing pre- and post-test designs produced mixed findings for the efficacy of the impact of MBIs on reducing suicide-related outcomes. SI was reportedly reduced in adult and adolescent populations<sup>32, 109, 155, 169</sup> or factors relating to suicide such as reductions in self-criticism<sup>93</sup>. Collins et al. (2016 & 2017)<sup>36, 37</sup> applied experimental design to test the effect of an MBI on experimentally induced feelings of burdensomeness and thwarted belonging among university students. According to the Interpersonal Theory of Suicide, both burdensomeness and thwarted belongingness are thought to contribute to suicide. The experimental studies relied on the assumption that suicide is a means of escape from burdensomeness and thwarted belonging. The authors created a computer-based 'Interpersonal Persistence Task' with participants randomly assigned to the experimental or control groups. Across a number of studies, the authors reported that the desire to 'escape'/quit the task was higher among participants who did not receive the MBI. They also associated the desire to quit the task with higher psychological distress and likelihood for suicidal behaviour. The authors caveated their findings, however, to say that mindfulness may be better as a preventative tool rather than a crisis intervention. However, other studies reported no change on SI<sup>29, 175</sup>, or factors relating to suicide such as hopelessness<sup>32</sup>, recognising one's own suicide risk or using safety plans<sup>30</sup>. The findings are limited by the use of small sized clinical samples. The quality of studies also varied with the use of non-standardised outcome measures, not measuring a wider range of suicide-related outcomes and there was some variation in the interventions examined.

Finally, Luoma and Villate (2012)<sup>117</sup> reported on two case studies of individuals who received MBI in a clinical setting. A 22 year old female who had a history of suicidal behaviour and multiple axes I and II disorders received 28 sessions of ACT. One year post therapy she no longer met the criteria for any psychological disorder and did not present at suicidal risk. The other case involved a 47 year old male who had attempted suicide and had received ACT treatment for six months. After treatment, he no longer presented at suicidal risk and had returned to work.

### **Key points:**

- There is a growing body of evidence that MBIs are efficacious in reducing SI among patients treated for mental illness (typically depression);
- MBIs have a wide range of MH benefits including reducing depressive symptoms, psychological distress, rumination, self-criticism and alcohol/drug misuse; and improving behavioural and emotional regulation, impulse control, life satisfaction, quality of life, positive affect, and self-compassion;
- MBIs might be better as a preventative strategy for suicidal behaviour rather than crisis intervention;
- Evidence is limited to the impact on SI and as such we do not have evidence of impact on suicidal behaviour;
- The majority of evidence relates to MBIs delivered to clinical samples in clinical settings receiving mindfulness interventions that are standardised (ie MBCT, MBSR or ACT).

## 13. Family therapy and social support

### Family therapy/support

Positive family attributes (eg cohesion, warmth, emotional support, parental availability/monitoring etc) are often cited as a protective factor for suicide and with issues within the family (eg family-related stress, conflict, parental criticism, rejection, control etc) reported as a suicide risk factors<sup>64, 164, 168</sup>. As such, family therapy aims to strengthen the bonds between family members with the goal to prevent suicidal thoughts/behaviours among some members of the family. Family therapy usually contains elements of psychoeducation, safety-planning and promotes help-seeking for suicidal behaviour<sup>107</sup>.

Twenty-three academic papers were identified through this rapid review, including two review papers, six case studies, and the findings from 15 clinical trials of which 11 were RCTs. All of the articles referred to adolescent, clinical samples with participants being recruited primarily as outpatients recruited in clinical settings. Nine of the articles covered attachment-based family therapy (ABFT) with other therapies including Intensive Contextual Therapy (ICT; n=2), (SHIFT; n=2), (FBCI; n=2), (FC BIT; n=1), (PFT; n=1), (FBI; n=1), (FFT; n=1), and (F CBT; n=1). Several of the articles presented secondary analysis of the same RCT, meaning studies were not unique.

Evidence primarily reported on ABFT as a family therapy and was the focus of three case studies and six RCT papers. Based on attachment theory, ABFT is a manualised therapy that aims to repair the parent-child relationship as a suicide prevention strategy for children and young people<sup>56, 57</sup>. Insecure attachment has been associated with suicidal behaviours<sup>149</sup>, suggesting that strengthening the attachment base may be useful for suicide prevention. ABFT consists of 16 weekly sessions that include joint sessions between parents and children/young people and individual sessions. The therapy aims to shift the family dynamic from one of problem-focused attention to re-establishing bond and attachment between parents and children/young people<sup>64</sup>.

Studies examining the efficacy of ABFT in reducing suicidal behaviour among adolescents have produced mixed results. Of the six RCTs, three studies covering two RCTs reported efficacy during treatment at least which favoured ABFT over enhanced usual care (EUC) in reducing suicide ideation (SI)<sup>57, 149, 55</sup>. However, two of these studies<sup>149, 55</sup> found this effect was only evident during treatment and efficacy was not significantly different compared to EUC at follow-up. Whilst SI decreased for participants receiving ABFT and EUC, ABFT worked faster during treatment. However, there was no difference between treatments by follow-up: gains continued for those receiving EUC but slowed for ABFT. These findings are supported by another RCT conducted by Waraan et al. (2021)<sup>184</sup> who found that time was the only factor that accounted for reductions in SI. The authors suggested that as girls mature, SI decreases which is relevant given that all of the RCTs were conducted with primarily female samples (ranging from 82–95% of the samples). Finally, in another RCT by Esposito-Smythers et al. (2019)<sup>63</sup>, a family-based CBT trial showed no difference between the intervention and treatment as usual (TAU) on the lethality of suicide attempts (SAs) post-intervention, depressive symptoms, severity of ideation or self-harm incidence among adolescent inpatients.

A final RCT compared ABFT to another treatment which was Family Enhanced Non-directive Support (FE-NST<sup>56</sup>). In a sample of 129 adolescents aged 12–18 (82% female), the authors found no difference between the treatment types on SI. However, greater improvements were reported for depression among the ABFT treatment arm compared to EUC.

All three case studies reported that ABFT is effective in reducing suicidal thoughts and/or behaviour among adolescent females<sup>65, 168, 191</sup>. In all cases, the authors noted that SI worsened mid-treatment before improving and Ewing et al. (2015) reported this effect was still evident 52 weeks following treatment<sup>65</sup>.

The remaining studies examined a range of family-based interventions (FBI) for addressing suicidal behaviour. This included Family Focused Therapy (FFT; n=2<sup>126, 136</sup>), the Self-Harm Intervention: Family Therapy Trial (SHIFT; n=2<sup>41,42</sup>), Family-based Crisis Intervention (FBCI; n=1<sup>175</sup>), Emotionally Focused Family Therapy (EFFT; n=1<sup>164</sup>), Family Centred Brief Intensive Treatment (FC-BIT; n=1<sup>7</sup>), Intensive Contextual Treatment (ICT; n=2<sup>188, 189</sup>), SAFETY programme (n=1<sup>164</sup>) and non-specified FBI (n=1<sup>160</sup>). These studies included randomised controlled trials and case studies, again all conducted with adolescents in largely female samples in clinical settings. The number of sessions provided to adolescents varied from 6 to 35 sessions.

Again, findings were mixed for this wider range of FBIs. A female in one case study no longer suffered with suicidal thoughts following treatment lasting 21 sessions<sup>160</sup>. However, two other cases who received 12 and 13 sessions, described a male and female (respectively) who still demonstrated suicidal thoughts and/or behaviour<sup>136, 164</sup>.

Three studies reported on intensive therapies (ie lasting 35 weeks) with mixed findings. In comparison to another treatment (Intensive Outpatient Therapy), FBI resulted in faster reductions in suicide-related outcomes, depression and anxiety<sup>7</sup>. Across two studies, Wijana et al. (2018 & 2021)<sup>188, 189</sup> reported that FBI was effective in reducing self-harm, parental stress and anxiety, and hospital inpatient care. Whilst there was no comparison treatment groups in these studies, Wijana et al. (2021)<sup>189</sup> reported that those who responded favourably to the FBI had reduced inpatient and hospital-based care but had a greater demand on primary and psychological care. However, in a review of FBIs, Aggarwal and Patton (2018)<sup>4</sup> found that while better treatment outcomes are associated with more treatment sessions, there was little difference between treatments lasting 12 weeks compared to more intensive treatments.

In a large scale UK-based RCT, Cottrell et al. (2018)<sup>41</sup> reported the findings of an 8-week FBI compared to TAU among 417 adolescents. In 2020, Cottrell et al.<sup>42</sup> extended the follow-up period to evaluate the long-term impact of FBI on repeat self-harm admissions. Their initial study reported that the FBI treatment group had significantly higher reductions in comparison to the TAU group but no change in relation to self-harm. The effects on SI had dissipated by follow-up. In the extended follow-up, the authors concluded that improvements to self-harm were not related to FBI with no differences found between FBI and TAU but that improvements were noted in terms of reduced self-harm incidence. Between the two studies, the authors reported that FBI resulted in only marginal differences and improvements in reduced self-harm were age-related. They concluded that FBI was not cost-effective in comparison to TAU.

Overall, as with an earlier review<sup>73</sup>, this rapid review has found mixed findings in relation to the efficacy of FBIs in reducing suicidal thoughts and/or behaviours. The mechanisms by which FBI operates also remain elusive. Efficacy has been associated by some authors with reduced perceived family conflict<sup>126</sup>, increases in family connectedness<sup>160</sup>, changes in parent behaviour<sup>170</sup>, or the number of sessions attended<sup>4</sup>. Barriers that may impact on treatment efficacy include parental response to suicidal behaviour<sup>172</sup> and motivation to improve familial relationships<sup>107</sup>.

## **Social support**

Despite social support featuring heavy in literature as a protective factor (and lack thereof as a risk factor) for suicide, evaluations of interventions designed to promote social support are scarce. However, this is not to say that other interventions have not promoted social support – see [Green & blue care](#) and [Creative therapies](#) for instance. See also [Mentoring, advocacy and peer support](#) for additional relevant studies. In total, six papers were identified for inclusion in this review in relation to suicide prevention interventions promoting social support.

Two papers reported on support groups (Peers for Valued Living [PREVAIL] and Survivors of Suicide Attempts [SOSA]) facilitated by a clinician and a peer with lived experience<sup>139, 85</sup>. Both studies included individuals at high risk of suicide and collected various suicide-related measures

(such as SAs, ideation, hopelessness). However, the findings from the studies were mixed. In a feasibility study, Pfeiffer et al.<sup>139</sup> reported that the PREVAIL peer specialist programme was attended by participants for six sessions lasting 54 minutes on average. However, 18% attempted suicide within the six month post-intervention observation phase. In addition, there was low uptake in half of the 70 inpatient participants initially recruited for the study. In the SOAS trial, Hom et al.<sup>85</sup> reported on an 8-week support group intervention delivered by a clinician and peer specialist. Of the 92 participants with history of SAs, clinically significant improvements were noted for SI (reduced for 25.9%), hopelessness (reduced for 30.8%) and resilience (increased for 20.3%). The authors noted that these findings held when the number of suicides and number of sessions attended were controlled for. However, neither study compared findings to a control group or alternative intervention.

In a prison population, Auzoult and Abdellaoui (2013)<sup>10</sup> recruited 54 inmates and 17 healthcare professionals across four prisons. In half of the prison sites a French peer support programme (Fellow Prisoners Support) had been implemented. Whilst the authors did not report directly on suicide-related outcomes, they found that in the prisons with the intervention implemented, prisoners were more likely than healthcare professionals to believe that they can reduce prison suicide but were less likely to identify suicide risk.

Two studies described the application of social support for postvention. Schotanus-Dijkstra et al. (2014)<sup>166</sup> conducted a content analysis of 1,250 messages posted on two online forums by 165 individuals bereaved by suicide. The ways in which the forums were typically used to garner social support included postings about the individuals' personal experience (77%), to express one's own grief (45%), and to offer condolences (40%). The second postvention study described group therapy for a total of eight children aged 6–12 years<sup>48</sup>. The intervention consisted of 12 sessions lasting two hours. The intervention was considered feasible but required a larger sample size to perform statistical testing on outcomes. Despite the small sample size, the authors noted improvements for emotion, grief and hope but reported deterioration on anger.

The final study consisted of an online survey of a sub-sample of undergraduate students (n=126) who reported that a friend/family member had disclosed suicidal thoughts and/or behaviour and their reactions to this disclosure<sup>75</sup>. Typically, the types of support provided by participants to a person at risk of suicide included providing social support by emphasising reasons for living and spending more time with the person, providing information and encouraging help-seeking, telling someone else/seeking additional support, and providing crisis support including using restraint if needed. Whilst this study is helpful in showing the types of support provided by peers to those at risk of suicide, it is not reported whether the reactions were informed by suicide prevention training or the resultant impact on the person at risk. In addition, the authors also reported that a small number of respondents were bereaved by suicide despite their attempts to support the individual at risk. This highlights the need to provide support to peers of individuals at risk if interventions target them in suicide prevention initiatives.

In summary, there is some evidence that support groups, if carefully implemented may show promise for helping those at risk of suicide. However, such interventions are not without risk such as the risk of suicide contagion or normalisation of suicidal behaviour, and suicide risk being underestimated. It is clear that given the lack of evidence available, more research is required to identify how support groups and social support could be better utilised in suicide prevention interventions.

### **Key points:**

- Evidence relating to family therapy/support is driven by clinical studies conducted with female adolescent samples, and outcome measures typically include SI, depression, self-harm and in some instances self-harm;

- Much of the evidence is based on small samples making generalisation of findings difficult. Many studies are impacted by high attrition rates;
- There is no evidence relating to adult samples, males or interventions delivered in non-clinical samples in community-based settings;
- ABFT dominates the evidence with findings suggesting that ABFT is more efficacious in reducing SI than EUC in the short-term. In the long-term, benefits of ABFT are held but improvements appear to continue for individuals receiving EUC resulting in equivalence between treatments;
- Reductions in self-harm and suicidal behaviour among female adolescents may be age-related rather than as a result of treatment;
- Findings of this review are inconclusive in determining whether family support is efficacious in reducing suicidal thoughts and/or behaviour. More research is required based on larger samples and with different target populations that evaluate family therapy and support, going beyond clinical settings and samples;
- Despite social support being associated with protective and risk factors for suicide, evidence of interventions primarily designed to promote social support is scarce. There is clearly a need for more research so that social support interventions and their applicability to suicide prevention are better understood. This includes the mechanisms by which they might work and for whom, efficacy in comparison to other types of treatment, the identification of unintended risks and how these might be mitigated.

Author, aims & objectives	Method	Findings
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## 14. Tables of academic articles

**Table 2: Academic literature for green and blue care**

Green & Blue Care		
<p>Baybutt et al. (2018)<sup>14</sup></p> <p>UK</p> <p>To identify and explore the impacts of GOOP for participating prisoners.</p>	<p>Intervention: <i>Greener on the outside for prisons</i> (GOOP) – horticultural therapy programme for prisoners intended to have positive impacts on mental wellbeing, PA and healthier eating.</p> <p>Phase 1: 2008–2012 across prisons in NW England. Evaluation period was last 6 months of Phase I.</p> <ul style="list-style-type: none"> <li>• Focus groups with prisoners at 5 participating prisons (5 male &amp; 1 female prison) lasting 40 mins;</li> <li>• 1:1 interviews with 5 prison staff members lasting 30 mins.</li> </ul> <p>Data analysed using thematic analysis</p>	<p>Positive impact on health incl. connection with own journeys and MH challenges; sense of pride &amp; achievement; building self-esteem &amp; self-belief; increased PA; improved sleep, eating healthier.</p> <p>Other benefits: increased knowledge &amp; skills for gardening; interpersonal skills &amp; team work; improved perseverance, concentration and mindfulness; building trust.</p> <p>Concl: nature connections can play an important salutogenic role, promoting human flourishing.</p>
<p>Farrier et al. (2019)<sup>66</sup></p> <p>UK</p> <p>To determine impact of GOOP on prisoners' health &amp; wellbeing and their lives on a broader scale; and to inform future programme development by understanding 'what works and why'</p>	<p>Phase II evaluation 2013–15.</p> <p>Survey data of 897 prisoners who participated in GOOP across 8 prisons (7 male and 1 female prisons). Measures collected at baseline and 12 weeks follow-up. Outcome survey measures incl. positive mental wellbeing and self-harm.</p> <p>Interviews with 12 prisoners lasting 25-50mins and data analysed using Biographic-Narrative Interpretive Method (BNIM)</p>	<p>88% showed improvement in feeling more confident.</p> <p>Reduced incidence of self-harming behaviour. Higher levels of social interaction for 95%, especially among some with social anxiety.</p> <p>Other benefits: increased learning, improved relationships.</p>
<p>Mercedes &amp; Swank (2019)<sup>123</sup></p> <p>USA</p>	<p>Case study method – 55 year old woman who witnessed her son's violent suicide. Case also joined a support group and engaged in 1:1 counselling.</p>	<p>Therapy involved encouraging storytelling, meaning-making and developing rituals in the garden. Some gardening activities symbolised her life. Gardening described as 'distraction' and a cure for pain.</p> <p>This type of therapy allows counsellors to engage with clients and assist them in grieving in a non-traditional, intimate and intentional manner.</p>
<p>Min et al. (2017)<sup>127</sup></p> <p>South Korea</p> <p>To investigate whether parks and green areas were associated with the risk for depression or</p>	<p>Korean Community Health Survey 2009 data matched to 2009 Korean Statistical Information Service regarding m2 per capita parks and green areas in 214 cities and counties.</p> <p>Survey included measures</p>	<p>Living in areas with less park and green areas was associated with greater odds of depression (25%) and depressive symptoms (13%), SI (18%) and suicidal attempts (25%).</p> <p>The effects of parks and green areas on depression and suicide may be mediated by moderate PA.</p>



Author, aims & objectives	Method	Findings
<p>suicidal indicators among adults and examine whether these associations are likely to be mediated by PA</p>	<p>sociodemographic information, lifestyle indicators, &amp; self-reported health indicators experienced in last 12 months (incl depression, SI, suicide PA, smoking status &amp; alcohol consumption)</p>	
<p>Rosa et al. (2021)<sup>161</sup></p> <p>Korea</p> <p>To determine whether there is sufficient evidence supporting forest therapy as an effective intervention to prevent and treat depression</p>	<p>4 systematic reviews were identified including 13 primary studies. Data from primary studies subjected to meta-analysis.</p>	<p>Support for effectiveness of forest therapy in reducing depression:</p> <ul style="list-style-type: none"> <li>• RCTs (n=3) found 60% reduction of depressive symptoms from baseline and in comparison to TAU, forest therapy participants were 17 times more likely to achieve remission &amp; 3 times more likely to respond to treatment.</li> <li>• NRCTs (n=2) response to treatment more likely to occur in forest group.</li> <li>• In comparison to similar activities in hospital, improvement was greater in forest therapy group (based on 2 RCTs) with forest group 2X likely to achieve remission.</li> <li>• Forest therapy reduced depressive symptoms more than the diet plus forest-based exercise.</li> <li>• When compared to just walking in a forest, forest therapy group more likely to achieve remission (n=1).</li> </ul> <p>People in forest therapy had higher reduction in depressive symptoms than people in other groups.</p>
<p>Crouse et al. (2021)<sup>46</sup></p> <p>Canada</p> <p>To examine whether living in greener areas of Canadian cities is associated with better MH and wellbeing (reducing odds of reporting high levels of self-perceived life stress, high psychological distress and poor self-rated MH).</p>	<p>Secondary data analysis of 8 cycles of a population-based Canadian Community Health Survey 2000-2016 n=397,900 matched against postcode data to determine proximity to greener areas.</p> <p>MH indicators incl. stress (n=395,900) &amp; psychological distress (n=95,300)</p>	<ul style="list-style-type: none"> <li>• Reduced odds of poor self-rated MH OR 0.95 to 0.92 per interquartile range increases in greenness within 250m and 1km.</li> <li>• Psychological distress – inverse associations ranging from -0.05 to -0.09 associated with increases in greenness within 250m and 1km.</li> <li>• Only negligible differences in effect sizes between three greenness buffers.</li> <li>• Greenness was associated with increased odds of perceived life stress among those living in the least deprived areas.</li> <li>• Found inverse associations between residential greenness and self-reported stress, distress and general MH.</li> <li>• Healthier people were not living in areas that were greener than others.</li> <li>• The potential benefits of greenness on MH are variable across personal and neighbourhood-level characteristics and sensitive to measurement.</li> </ul>
<p>Mutz &amp; Muller (2016)<sup>129</sup></p> <p>Germany</p> <p>To investigate the effects of outdoor adventures on young people's MHWB; and test which, if any, MH benefits are related to outdoor adventures</p>	<p>Longitudinal study with control groups across two studies. Study 1 recruiting 14 year old school pupils and Study 2 recruiting university students</p> <p>Outcome measures incl. perceived stress, mindfulness, self-efficacy, happiness, and life satisfaction</p>	<ul style="list-style-type: none"> <li>• Study 1: moderate to large decrease in 'demand' subscale of perceived stress; large increases in mindfulness; increased life satisfaction.</li> <li>• Study 2: reduced stress (particularly subscales worries and demands); higher mindfulness, self-efficacy, life satisfaction &amp; happiness.</li> </ul>



Author, aims & objectives	Method	Findings
<p>Costello et al. (2019)<sup>40</sup></p> <p>Australia</p> <p>To develop a deeper understanding of how informal open-water swimming groups help their members manage healthy ageing.</p>	<p>Ethnographic study using observation and in-depth interviews (n=17, mostly older individuals)</p>	<ul style="list-style-type: none"> <li>• Greater improvement compared to controls</li> <li>• Post-swim feelings of relief, exhilaration, euphoria, satisfaction and relaxation.</li> <li>• Social contact with others and with time bonding with others and social support offered.</li> </ul>
<p>Núñez-González et al. (2020)<sup>131</sup></p> <p>Canada</p> <p>To collect, summarise, critically assess and interpret the evidence related to systematic reviews of the built environment on MH.</p>	<p>Overview of systematic reviews.</p> <p>Databases searched: Cochrane, EMBASE, MEDLINE, LILACS, psycINFO</p> <p>11 studies published 2010-2019 included in review. Includes a total of 178 primary studies.</p>	<p>Insufficient evidence to make firm conclusions on the effects of the built environment interventions on MH.</p>
<p>Britton et al. (2020)<sup>23</sup></p> <p>Ireland</p> <p>To look at the use of blue space in therapeutic interventions for the promotion of health and wellbeing; to address the gap in understanding the health benefits of blue space and to systematically identify, summarise and synthesize studies that have examined the benefits, if any, of blue care for attaining or restoring psychological and/or physical health and wellbeing.</p>	<p>Systematic review of 14 databases</p> <p>33 studies included published 2004-2017, including 2031 participants</p> <p>Participants' presenting issues incl. PTSD, depression, emotional difficulties, social exclusion, sensory issues, addiction, ASD, aggression &amp; other physical health concerns. Interventions ranged from single day to 6 months of activity but details were limited and lacking from 8 studies.</p>	<p>MH benefits noted across studies including self-esteem, self-efficacy, social confidence, resilience, improvement on mood, stress or other self-reported measures, enhanced social relationships, environmental connectedness which is linked with psychological restorativeness</p> <p>Barriers included lack of resources, access issues, fears and stigma associated with personal abilities, level of fitness, environment, social and cultural norms, illness and facilitator/therapist ability</p>

Author, aims & objectives	Method	Findings
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**Table 3: Academic literature for complementary therapies**

Complementary therapies		
<p>Abanes et al. (2020)<sup>1</sup></p> <p>USA</p> <p>To investigate the feasibility &amp; acceptability of standardised stress acupuncture (SSA) in a military sample and assess perceived stress and general health before and after the intervention.</p>	<p>Pre- and post-intervention involving 1 SSA treatment per week for four weeks with 16 military personnel.</p> <p>Outcome measures incl. acupuncture expectancy, perceived stress, general physical MH and social functioning, blood pressure, &amp; heart rate</p>	<p>Significant improvements in stress, levels of energy and social functioning.</p> <p>Emotional wellbeing improved and a clinically significant change for 25%</p> <p>No significant changes for acupuncture expectancy, blood pressure or heart rate</p>
<p>Pirnia et al. (2019a)<sup>141</sup></p> <p>Iran</p> <p>To evaluate the effectiveness of auricular acupuncture on the secretion of saliva cortisol.</p>	<p>Case study of 32 year old male with history of drug misuse, depression and SA.</p> <p>Methadone therapy and acupuncture twice a week for four weeks. Secretion rate of cortisol measured across 8 sessions of acupuncture.</p>	<p>Acupuncture associated with decreased salivary cortisol and SI.</p>
<p>Pirnia et al. (2019b)<sup>142</sup></p> <p>Iran</p> <p>To examine whether acupuncture is effective in the regulation of salivary cortisol levels by reducing SI.</p>	<p>A RCT for 24 patients (12 intervention &amp; 12 controls) on methadone therapy and who had persistent depression and SI.</p> <p>Acupuncture performed 2 X per week for 4 weeks and cortisol measured.</p>	<p>Acupuncture positively associated with reduced salivary cortisol at weeks 5, 6, 7 and 8. Acupuncture associated with reduced SI at weeks 6 7 and 8.</p>
<p>Won &amp; Choi (2017)<sup>194</sup></p> <p>Republic of Korea</p> <p>To examine the influence of aromatherapy on academic stress, academic self-efficacy, SI &amp; salivary cortisol among middle school students</p>	<p>RCT of 42 participants (20 intervention &amp; 22 controls)</p> <p>Outcome measures incl. academic stress, academic self-efficacy, SI</p>	<p>Aromatherapy associated with decreased academic stress &amp; increased academic self-efficacy.</p> <p>Aromatherapy not associated with changes in SI or salivary cortisol.</p>
<p>Amadéo et al. (2020)<sup>6</sup></p> <p>Tahiti</p> <p>To assess the effectiveness of a body contact care (BCC) or Mobile Intervention Team (MIT) intervention to reduce the number of SA in patients with SI with/without history of SA; and to measure the effect of the BCC intervention on anxiety, mood and SI</p>	<p>Non-randomised controlled trial with 29 males &amp; 39 females in the intervention group and 38 males &amp; 34 females in control group</p> <p>BCC Intervention incl. 5 sessions of aromatherapy with ylang ylang provided over 4 months</p>	<p>Those receiving BCC or MIT had a lower SA rate compared to those in control group</p> <p>BCC intervention only associated with significantly reduced depressive symptoms, anxiety and SI.</p>

Author, aims & objectives	Method	Findings
<p>Vitale et al. (2021)<sup>183</sup></p> <p>USA</p> <p>To evaluate the benefits of a multimodal Complementary and Integrative Health (CIH) approach in reducing SI and associated symptoms among veterans</p>	<p>126 veterans (87 males, 39 females) referred by a clinician to an intensive 4-week programme attending 5 days per week for 3 hours per day. At baseline, 17.5% at high risk for suicide in the past 5 years &amp; 65% had a lifetime history of SI and/or SA</p> <p>Intervention incl. acupressure, meditation, mindfulness, narrative therapy, music therapy, line dancing, yoga, acupuncture, sleep hygiene, spirituality, nutrition and cooking, financial literacy &amp; interpersonal effectiveness.</p> <p>Outcome measures incl. general physical and MH, depression, hopelessness, sleep quality, group cohesion &amp; programme monitoring data</p>	<ul style="list-style-type: none"> <li>• Improvements for depression &amp; hopelessness were observed with medium to large effect sizes and greater gains within suicide groups.</li> <li>• Significant reduction in SI observed for both suicide groups</li> <li>• Those with prior history of SI and/or SA showed reduction in pain symptoms.</li> </ul>

Author, aims & objectives	Method	Findings
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**Table 4: Academic research for mentoring, advocacy and peer support**

Mentoring, advocacy & peer support		
<p>Conwell et al. (2020)<sup>39</sup></p> <p>USA</p> <p>To test if compared to TAU, a peer companion intervention would lead to greater improvements in SI, depression, anxiety, perceived burdensomeness, &amp; thwarted belongingness among older adults who reported feeling lonely or being a burden on others</p>	<p>A non-blinded, RCT for 369 community-dwelling individuals aged 60+ who were lonely allocated to receive a peer companionship intervention (<i>The Senior Companionship</i>; n=190; F=103; M=87) or TAU (n=179; F=100; M=79).</p> <p>Intervention: peer companions provide friendly in-person (primarily), telephone or electronic support, 4X per month. TAU: no intervention</p> <p>Outcome measures incl. SI, depressive symptoms, anxiety, feelings of belonging and burdensomeness. Outcomes assessed 3-, 6- and 12-months post-randomisation.</p>	<p>On average, peer companions reported 1 in-person meeting lasting 1.75 hours per month (range 0-5 visits; 0-19 hours of visiting time) and 2 telephone calls lasting 31 minutes per month (range 0-6 calls; 0-3.5 hours). Visits included having tea/coffee, golfing, lunch, friendly chats and dancing.</p> <p>Intervention associated with significantly greater reductions in depression and anxiety and improvements in burden among peer companionship participants compared to usual care.</p> <p>Improvements for SI and belonging were similar for both groups.</p> <p>There was no difference in intervention effects according to gender.</p>
<p>Weber Ku et al. (2020)<sup>185</sup></p> <p>USA</p> <p>To examine the prevalence and characteristics of natural mentoring relationships &amp; history of caregiver childhood abuse in a large, nationally representative sample. To examine the associations between these relationships and long-term psychological and health outcomes.</p>	<p>Wave 1, 3 and 4 in-home interview data collected from children and their parents participating in the Add Health. A large, nationally representative longitudinal dataset was used. Main sample (n=12,270; 76.25% with a mentor), sexual abuse sub-sample (n=606; 74.89% with a mentor) &amp; physical abuse sub-sample (n=3,650; 78.75% with a mentor).</p> <p>Outcomes incl. presence of mentor (Other than your parents or step-parents), length of relationship, frequency of contact, closeness of relationship and caregiver physical and sexual abuse, SI, binge drinking, recent STI, non-violent anti-social behaviours, violent anti-social behaviour &amp; violence re-exposure.</p>	<p>Participants who reported having a mentor during adolescence and having a longer mentoring relationship lowered the association between abuse during childhood and SI.</p>
<p>Dixon et al. (2019)<sup>58</sup></p> <p>England</p> <p>To understand the impact of a community-based football-based MH intervention (the Redcar and Cleveland Boot Room).</p>	<p>Evaluation (non-participant observation and interactive group discussion (n=12; age range 45-65 years old)) of the intervention targeted at men who were made redundant from the closure of steelworks in the North-west of England.</p> <p>Discussion guide covered experiences of attending/engaging in the 'Boot Room'- what worked/didn't work well, views and perspectives of the 'Boot Room's' value incl. strategies for engagement &amp; thoughts on sustainability</p> <p>Intervention to promote mental</p>	<p>The theme: <i>Active ingredients of the Boot Room: Peer-support, mentoring and member-led activities</i>. Men described being tempted to isolate themselves following redundancy and the Boot Room was a timely intervention by alleviating isolation, boosting self-esteem, sense of wellbeing and confidence through social/peer support and mutual support.</p> <p>Other themes: <i>The language of football and shared identity for initiating and sustaining engagement in the Boot Room; The Boot Room as a vehicle for building MH resilience; Sustainability of the Boot Room and; Group conclusions and advice for health practitioners.</i></p>

Author, aims & objectives	Method	Findings
	<p>resilience and well-being for men using a 'Boot Room' football metaphor. Facilitated by trained community health champion. The intervention is unstructured and guided by participants, not the MH champion. Objectives incl. engagement in the football-themed MH resilience intervention, raise awareness of the importance of MH, facilitate greater self-awareness of MH and emotional resilience in self and distress in others, to promote the social acceptability of talking about MH, help-seeking and local support services, &amp; to change/challenge male attitudes towards personal MH.</p>	
<p>Pfeiffer et al. (2019)<sup>139</sup></p> <p>USA</p> <p>To demonstrate the feasibility and acceptability of a peer specialist intervention titled Peers for Valued Living (PREVAIL)</p>	<p>RCT of 70 adult psychiatric inpatient participants with history and high risk of SA and/or SI, assigned to peer mentorship (n=34) or TAU (n=36).</p> <p>Intervention: PREVAIL involved 'peer specialists' to be trained in a range of skills/tools (incl. safety plans, developing hope kits, WRAP, CBT, goal-setting, mindfulness and relaxation techniques) to address suicidal risk and increase hope and connectedness. This is achieved via supportive listening, sharing one's own recovery story and tailor these to someone who is high risk for suicide. Intervention delivered over 12 weeks for a total of 12 meetings (more frequently held initially)</p> <p>Primary outcome measures incl. acceptability &amp; feasibility. Secondary measures incl. fidelity, SA, SI, hopelessness, hope, belongingness. Measures collected at baseline, 3-months and 6-months.</p>	<p>88% (30/34) of intervention participants met with the peer mentor.</p> <p>Completion of assessments at 3 and 6 months was high (76-79%).</p> <p>The mean number of sessions attended was 6 typically lasting for 54 mins with low-level engagement in approximately half of the sample.</p> <p>Feasibility and acceptability were demonstrated.</p> <p>Though the study was not powered or designed to assess the SA over the course of the intervention, 15% attempted suicide at 3 months rising to 18% at 6 months.</p> <p>On the whole experiences of the intervention were good, though a small minority not satisfied with the intervention, its content or peer relationship. One individual felt worse because they perceived the peer mentor's experience to be worse than theirs.</p>
<p>King et al. 2018<sup>99</sup></p> <p>To evaluate the impact of a youth mentorship programme (Let's Connect) aimed to reduce loneliness, depression and SI; and increase belongingness, self-esteem and community connectedness at 6-months.</p>	<p>RCT of 218 young people aged between 12-15 years presenting at ED who scored positively for bully victimisation, bully perpetration and low social connectedness assigned to intervention or TAU.</p> <p>Intervention: Let's Connect involved trained community mentors who were matched to participants based on gender, shared interests, geographic proximity and other factors e.g. scheduling conflicts. An action plan was developed between the mentor and participant; mentors and participants were encouraged to participate in planned activities 2X per month for 6-month duration.</p>	<p>Loneliness improved to a greater extent for the intervention than TAU which was significant.</p> <p>Community connectedness, thwarted belongingness, self-esteem and depression changed in the expected direction, but this did not reach levels of significance. SI declined at a similar level for both groups.</p> <p>A similar number of youths in the control (n=7) and intervention group (n=8) engaged in suicidal behaviour during the study.</p>

Author, aims & objectives	Method	Findings
	Measures incl. bully victimisation and perpetration, loneliness, community connectedness, thwarted belongingness, depression, self-esteem, SI & risk behaviours	
<p>Drevon et al. (2016)<sup>59</sup></p> <p>USA</p> <p>To examine the relationship between natural mentoring relationships and education, employment, psychological wellbeing and substance (mis)use among individuals who identify as Lesbian, Gay or Bisexual (LGB).</p>	<p>Data for LGB individuals taken from the Add-Health study (large, nationally representative longitudinal dataset), supplemented with education data from the Adolescent Health and Academic Achievement study.</p> <p>Variables incl. natural mentoring relationship ("Other than your parents or step-parents), frequency of mentor contact, type of mentor, duration of mentor relationship &amp; emotional closeness of mentor relationship.</p> <p>Outcome measures incl. education &amp; employment status, self-esteem, depression, SI &amp; substance use/abuse in last 12 months</p>	<p>Having a natural mentor was associated with high school exit status only.</p> <p>SI or other psychological variables were associated with having a natural mentor among LGB individuals.</p>
<p>Law et al. (2016)<sup>106</sup></p> <p>Hong Kong</p> <p>Compared to TAU, participants allocated to EUC by being assigned a volunteer mentor to determine whether a mentor will impact on self-harm, SI, depression, anxiety and hopelessness.</p>	<p>A quasi-experimental (pre/post-test) design, 14-18 year olds admitted to ED due to SH and scoring low-moderate on the Beck Suicide Intent scale were allocated on first come first serve basis to a 9-month volunteer mentor intervention (n=40). Controls (n=38) met the same criteria and were followed up for the same period of time.</p> <p>Pairs of volunteer mentors were trained to deliver four types of support to participants: suicide screening, emotional support, providing information on medical and community resources, sharing problem-solving skills &amp; referrals to professional support. Contact (F2F, phone, postal, electronic) was at least 2X per month during a 9-month period</p> <p>Primary outcomes: repetition of SH, SI &amp; hopelessness. Secondary outcomes: depression, anxiety, social support, problem solving and self-reported psychiatric service use.</p>	<p>Intervention associated with improvements in hopelessness at 3-months follow-up and depression at 9-months follow-up.</p> <p>Similar number of participants in each group (n=4) repeated SH during the study period. There was no difference between-group in reporting of psychiatric health service use.</p> <p>Overall satisfaction with the intervention was 4.3 (out of a 5-point scale) with 75% of participants reporting satisfaction.</p>

**Table 5: Academic evidence for physical activity**

Physical Activity		
<p>Brailovskaia et al. (2020)<sup>20</sup></p> <p>Germany</p> <p>To measure the</p>	<p>Longitudinal online survey study with 3-year follow-up with 223 university students.</p> <p>Measures: PA frequency, positive MH, and SI/SA</p>	<p>Higher levels of positive MH and PA were related to lower SI/SA. There was a positive relationship between positive MH and PA: Higher levels of PA at baseline and lower suicide-related outcomes at follow-up were mediated by higher positive</p>



Author, aims & objectives	Method	Findings
association between PA, MH & suicidal outcomes; and explore if positive MH mediates the relationship between PA and suicidal outcomes.		MH at baseline.
<p>Grasdalsmoen et al. (2020)<sup>80</sup></p> <p>Norway</p> <p>To examine the relationship between the frequency, intensity and duration of PA and MH problems including suicidality and SH among Norwegian university students.</p>	<p>Cross-sectional survey (ShoT2018) of Norwegian university students aged 18-35 years old (n=50,054).</p> <p>Measures: psychological distress (anxiety and depression), PA, self-reported diagnosed depression, SH and suicidal behaviour</p>	<p>Having a history of SH or suicidal behaviour was significantly more common among less frequent exercisers.</p> <p>For females, exercise frequency had the strongest association i.e. compared to almost daily exercisers, SH and suicidal behaviour was 2-2.5 times greater for never exercisers.</p> <p>Duration of exercise had the strongest association for males i.e. shorter duration of exercise was associated with SH and suicidal behaviour compared to longer duration.</p> <p>A U-shaped relationship was found for intensity and duration of exercise and suicidal and SH behaviours for women i.e. both low and high intensity and duration were associated with higher likelihood of reporting a history of suicidal behaviour and SH.</p>
<p>Jiang et al. (2020)<sup>92</sup></p> <p>China</p> <p>To examine the association between sedentary behaviour/PA and depression, anxiety and SI.</p>	<p>A cross-sectional survey of Chinese college students (n=28,298).</p> <p>Measures: sedentary behaviour, PA frequency &amp; duration, anxiety, depression and SI</p>	<p>Increased sedentary behaviour was associated with increased depression, anxiety and SI in a dose response relationship.</p> <p>More PA was associated with less depression, anxiety and SI.</p> <p>The effects of sedentary behaviour and PA were independent of one another.</p> <p>Sleep quality may mediate the relationship between sedentary behaviour and psychological outcomes.</p>
<p>Liu et al. (2020)<sup>115</sup></p> <p>China</p> <p>To explore the association between moderate and vigorous PA (MVPA) and SH (among other psychological symptoms i.e. depression, anxiety and behaviours) according to sex.</p>	<p>A cross-sectional survey of Chinese high school students (n=13,349; 7<sup>th</sup>-12<sup>th</sup> grade) from 10 regions.</p> <p>Outcomes: PA levels and screen time, depressive symptoms, anxiety, &amp; SH</p>	<p>No evidence of an association between self-harm behaviours and MVPA.</p> <p>However, compared to no PA, vigorous PA was associated with 30% for depression and anxiety among boys. Both moderate and vigorous PA was associated with a 20% and ~30% reduction in depression, respectively for girls.</p>
<p>Sampasa-Kanyinga et al. (2020)<sup>163</sup></p> <p>Canada</p> <p>To explore the association between meeting</p>	<p>A large population-based cross-sectional study (Ontario Student Drug Use and Health Survey) of 10,183 students aged between 11 and 20 years.</p> <p>Outcomes: SI &amp; SA with moderators of age &amp; gender Covariates: age &amp; gender (if not a</p>	<p>Boys: aged 11-14- no association between individual or combined recommendations and SI or SA; aged 15-20- all three recommendations associated with 75% reduced likelihood of SI (compared to meeting no recommendations), PA recommendation only and meeting all three recommendations (compared to meeting</p>

Author, aims & objectives	Method	Findings
<p>recommendations (individually or combined) for sleep duration, screen time and PA and SI and SA among adolescents. To examine whether age and gender moderated the relationship between recommendations and suicidality.</p>	<p>moderating factor), ethnicity, socio-economic status and BMI (overweight/obesity or not).</p>	<p>no recommendations) were associated with 80% and 90% reduced likelihood respectively of reporting SA.</p> <p>Girls: aged 11-14- screen time and PA only (compared to meeting no recommendations) were associated with 60% decreased likelihood of reporting SI; aged 15-20 - PA recommendation only (compared to meeting no recommendations) was associated with almost 3X <b>increased</b> likelihood of SA.</p>
<p>Michael et al. (2020)<sup>124</sup> USA  To examine the association between PA, sedentary behaviour and healthy diet and MH, SI &amp; SA among US high school students.</p>	<p>Cross-sectional 2017 Youth Behaviour Risk Survey of a nationally representative sample (n=14,765) of 9-12 grade US high school students (public and private schools).</p> <p>Measures: MH (feeling sad and hopeless), SI, SA, PA, sedentary behaviours and dietary behaviours</p>	<p>Both male and female students who did not meet the aerobic PA guidelines (compared to those who did) were more likely to seriously consider attempting suicide, but not attempted suicide. Similarly, male and female students who practiced sedentary behaviours such as playing video games (compared to not) were more likely to seriously consider and attempt suicide.</p>
<p>Ghose et al. (2019)<sup>79</sup> LMIC countries  To explore the relationship between PA and SI &amp; SA among older people in Low and Middle Income countries.</p>	<p>A cross-sectional survey of WHO's Study of Global Ageing and Adult Health (SAGE) of adults over 50 years old without cognitive impairment (n=2,861)</p> <p>Measures: SI, SA, PA (vigorous intensity activity, moderate intensity activity, leisure time moderate intensity activity, biking and walking). Analysis is stratified by sex.</p>	<p>Evidence that having lower levels of PA (compared to higher levels) was associated with reporting of SI &amp; SA across countries and sex.</p>
<p>Kim et al. (2019)<sup>98</sup> South Korea  To examine the association between PA and SI among the general population of South Korea taking into account differences by gender</p>	<p>Cross-sectional survey (Korea National Health and Nutrition Examination Survey) of 4,976 adults aged 19 years and over.</p> <p>Measures: PA (low, medium and high) and SI.</p>	<p>Three statistical models assessed using different covariates for each gender. For the full sample model three accounting for all covariates found a protective association (~25% reduction) of moderate levels of PA (versus low) and SI. No protective effects were found for men. Across all three models a protective effect (~45% reduction) for moderate PA (versus low) for women.</p>
<p>Pfledderer et al. (2019)<sup>140</sup> USA  To examine the associations among PA, sleep, school environment and SI among US adolescents.</p>	<p>Cross-sectional survey (2017 National Risk Behavior Survey) of 9<sup>th</sup>-12<sup>th</sup> grade high school students (n=10,125) in the USA.</p> <p>Measures: SI, PA, sleep and school environment (prevalence of weapons at school, perceived school safety, prevalence of bullying at school and prevalence of drugs at school)</p>	<p>Overall, meeting PA guidelines for both sexes were associated with lower reporting of SI. This remained when results were stratified by sex.</p>
<p>Uddin et al. (2019)<sup>178</sup> LMIC countries  To explore the relationship between sedentary behaviour/PA and suicidality among adolescents in Low and</p>	<p>Cross-sectional survey (Global School-based Student Health Survey) of students aged 13-17 years old (n=206,357).</p> <p>Measures: SI, suicidal plan, SA, PA and leisure-time sedentary behaviour</p>	<p>High sedentary behaviours (compared to low sedentary behaviours) were associated with increased SI, planning and SA for both males and females, with some regional variation.</p> <p>Males: Insufficient levels of PA (compared to sufficient levels) were associated with increased SI, planning (only in the Africa</p>



Author, aims & objectives	Method	Findings
Middle Income Countries.		<p>region) and SA (some regional variation).</p> <p>Female: insufficient PA (compared to sufficient levels were associated with less SI, planning and SA (with regional variation).</p> <p>A combination of low PA and high sedentary behaviour was associated with increased SI, suicide planning and SA for males and a marginal association for females.</p>
<p>Duffy et al. (2018)<sup>60</sup></p> <p>USA</p> <p>To explore the association of excessive dependence and suicidality and whether body trust acts as a moderator for this relationship</p>	<p>Cross-sectional online survey of adults (n=540) aged between 18 and 71 years old in the USA.</p> <p>Measures: exercise dependence (domains of continuance despite physiological and psychological consequences, lack of control and reductions in other activities), interoceptive awareness/body trust, SI &amp; SA</p>	<p>Exercise dependence symptoms and lack of body trust are positively associated with both SI &amp; SA. Body trust moderated the association between exercise dependence and SI.</p>
<p>Nyer et al. (2018)<sup>132</sup></p> <p>USA</p> <p>A secondary analysis of the effect and safety of an Iyengar yoga and breathing intervention (low- and high- dose) on SI among individuals with major depressive disorder.</p>	<p>RCT with two intervention groups: low dose (2x 90 min classes; 3X 30-min homework sessions p/w for 12-weeks) and high dose (3 x 90min classes; 4X 30-min homework sessions p/w for 12-weeks). 90-min classes: 60-min Iyengar yoga, 10-min deep relaxation; 20-min coherent breathing and; homework: 15-min Iyengar yoga, 15-min coherent breathing.</p> <p>30 participants aged 18-55 years with current diagnosis of major depressive disorder and mild-moderate depression were randomised to either low dose (n=15) or high dose (n=15) group.</p> <p>Outcomes: MDD diagnosis, depression symptoms, SI &amp; other adverse effects</p>	<p>Of 9 participants reporting SI at screening, 1 reported SI at the end of the study. One participant reported that they 'would like to kill myself' at week 4 but no other time-point.</p> <p>Of 7 participants reporting SI at screening only 1 participant reported 'a wish to be dead' at the end of the study.</p> <p>Musculoskeletal problems were the main safety concern reported. One participant experienced an increase in rumination as an adverse event related to the breathing exercise. N=23 participants experienced worsening depression but this did not reach the level required to be considered an adverse event. There was no increase in SH.</p>
<p>Rogers et al. (2018)<sup>159</sup></p> <p>USA</p> <p>To examine the associations of exercise dependence and capability for and, past suicidal behaviour.</p>	<p>Cross-sectional online survey of adults (n=540) aged between 18 and 71 years old in the USA.</p> <p>Measures: exercise dependence, acquired capability for suicide &amp; SA</p>	<p>Suicide attempters had higher levels of exercise dependence than non-suicide attempters and for the following dimensions of exercise dependence (lack of control, reductions in other activities and continuation despite physiological and psychological consequences). Exercise dependence explained 10.6% of the variance in capability for suicide with continuation despite physiological and psychological consequences and lack of control being significant.</p> <p>Continuation in exercise despite physiological and psychological consequences and lack of control over exercise were associated with capability for exercise. Capability for suicide was positively associated with SA, whereas, exercising longer than intended was negatively associated with SA.</p>

Author, aims & objectives	Method	Findings
<p>Jang et al. (2017)<sup>90</sup></p> <p>Korea</p> <p>To examine the association between PA and suicidal behaviour among lesbian, gay and bisexual adolescents in Korea.</p>	<p>Cross-sectional (11<sup>th</sup> Korea Youth Risk Behavior Web-based Survey) of Korean students aged 12-18 who identified as lesbian, gay or bisexual (n=628)</p> <p>Measures: SI, suicide plan, SA &amp; PA</p>	<p>For gay and bisexual boys, not undertaking any light activity (compared to over 5 days p/w) was associated with 2-2½ times higher likelihood of having seriously considered suicide and planned suicide, respectively. Moderate light activity (3-4 days per week) versus 5 days per week was associated with just under 2 and a half times higher likelihood of having planned suicide. For lesbian and bisexual girls no vigorous activity compared to over 5 days per week was associated with having planned or attempted suicide, but number of respondents was low in the analysis to be confident with this result.</p>
<p>Khan et al. (2017)<sup>97</sup></p> <p>Bangladesh</p> <p>To examine the relationship between PA and sedentary behaviour and suicidal thoughts and behaviours among Bangladeshi students.</p>	<p>Cross-sectional population-based survey (2014 Bangladesh Global School-based Student survey of students aged 13-17 years old (n=2,989)</p> <p>Measures: suicide (thoughts, planned or attempted), PA and sedentary behaviour</p>	<p>Those who were insufficiently active (compared to those who were sufficiently active) were twice as likely to report SI &amp; SA and were 59% more likely to report planning suicide. The findings for higher levels of sedentary behaviour (compared to lower levels) were similar for SI &amp; SA, but no relationship was found for suicide planning.</p>
<p>Lester (2017)<sup>110</sup></p> <p>USA</p> <p>To examine the association between sport participation and SI &amp; SA among US high school students according to sex and ethnicity.</p>	<p>Cross-sectional survey (Youth Risk Behaviour Survey across 1991, 1993, 1995, 1997, 1999, 2001, 2003, 2005, 2007, 2009, 2011) of high-school students (n=152,858).</p> <p>Measures: participation in sports, SI &amp; SA</p>	<p>Participation in sports was associated with a reduction in reporting of SI &amp; SA in prior year for both males and females overall. Protective effect of sports on SI &amp; SA did not remain for some ethnic minority groups. Sport participation was associated with an increase in SI for Asian-American girls and SA for African-American, Hispanic-American and, Asian-American girls.</p>
<p>Vancampfort et al. (2017)<sup>181</sup></p> <p>International studies</p> <p>To explore the association between suicidal intent and PA throughout the lifespan and to investigate the impact of PA interventions on SI.</p>	<p>Systematic review of 29 studies (n=720,652). Independent screening of titles, abstracts and full-texts, methodological quality assessed and data extraction conducted by one reviewer (verified by additional reviewers). Effect sizes were extracted and random effects meta-analysis undertaken for suicidal intent and; meeting PA guidelines, not meeting PA guidelines, active versus least active and study-defined active versus inactive.</p> <p>Non-existing association if 0-33% of studies supported an association. Unclear association if 34-59% of studies supported an association. Existing association if 60-100% of studies supported an association. Associations 'consistent in the literature' if reported in four or more studies.</p>	<p>Self-report measures of PA measures were used in all studies and SI (in all but one study) was assessed with a yes/no response.</p> <p>Adolescents: <i>Unclear association</i> 7/14 studies (50%) negative association between PA and SI (i.e. higher PA = less SI or vice versa); 7/14 studies (50%) no association.</p> <p>Adults: <i>Existing association</i> 14/21 studies (67%) negative association between PA and SI (i.e. higher PA = less SI or vice versa).</p> <p>Older adults: <i>Inconsistent association</i> 2/3 studies (67%) higher PA levels are associated with lower SI.</p> <p>Meeting PA guidelines: Protective effect of PA on SI (Odds Ratio=0.91, 95%CI=0.51-0.99, p=0.03, n=3)</p> <p>Not meeting PA guidelines: Increased odds of reporting SI (Odds Ratio=1.16,</p>

Author, aims & objectives	Method	Findings
		<p>95%CI=1.09-1.24, p&lt;0.001, n=2)</p> <p>Active versus least active: Being active was protective against SI compared to the least active (Odds Ratio=0.87, 95%CI=0.76-0.98, p=0.02, n=8)</p> <p>Inactivity: No evidence of an association of inactivity and SI (Odds Ratio=1.60, 95%CI=0.83-3.11, p=0.16, n=3)</p> <p>Intervention studies: RCT- compared to CBT alone for mild-moderate depression symptoms, exercise (35min walking and flexibility exercises 3X p/w for 12 weeks) and CBT decreased depressive symptoms and SI. Single-group, pre-post-test design- 15 weeks of CBT and PA was associated with a reduction (not significant) of SI in adolescents (n=6). Cross-over trial- 9 weeks of mountain hiking (3 x's a week at moderate intensity, 2-3 hour duration) reduced SI significantly in adults (n=17) at high risk of SI.</p>
<p>Boone &amp; Brausch (2016)<sup>18</sup></p> <p>USA</p> <p>To examine the relationship between PA, depression and non-suicidal self-injury (NSSI). PA is hypothesised to moderate the relationship between depression and NSSI.</p>	<p>Cross-sectional survey of rural high school and university students (n=167) aged 14-25 years old.</p> <p>Measures: PA, exercise motivations, NISSI and depression</p>	<p>Higher PA levels were associated with less NSSI.</p> <p>PA levels moderated the relationship between depression and NSSI only for low levels of PA whereby high levels of depression was associated with high NSSI and low levels of depression was associated with low levels of NSSI.</p> <p>Appearance-based motivation for exercise was associated with increased NSSI.</p>
<p>Jarvi et al. (2016)<sup>91</sup></p> <p>USA</p> <p>To explore the relationship between past week PA and NSSI within the past 30 days.</p>	<p>Cross-sectional survey of adults (n=353) aged 18 to 72 years old attending a partial hospitalisation program with acute psychiatric issues (not all with NSSI).</p> <p>Measures: NSSI, history of NSSI, depression, anxiety (Generalised Anxiety Disorder- 7) and PA</p>	<p>Individuals who did not undertake NSSI participated in significantly more minutes of vigorous and moderate exercise in the past week compared to individuals who did undertake NSSI. Severity of NSSI was not associated with exercise.</p>
<p>Davidson et al. (2013)<sup>50</sup></p> <p>USA</p> <p>To examine the association between exercise and suicide, including potential mediators of sleep, PTSD and depression among veterans.</p>	<p>Cross-sectional survey of 346 US military veterans attending a 90-day residential rehab program for PTSD.</p> <p>Measures: suicide (SI, intent, SA, family SAs and no. suicides in family, PA, depression, sleep quality &amp; PTSD symptoms</p>	<p>PA had a negative association with suicide i.e. more exercise = less reporting of suicide-related outcomes. This relationship was mediated by depression and sleep.</p>

Author, aims & objectives	Method	Findings
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**Table 6: Academic literature for creative therapies**

Creative therapies		
<p>Blomdahl et al. (2018)<sup>17</sup></p> <p>Sweden</p> <p>To investigate the effects of manual-based phenomenological art therapy in addition to TAU for individuals diagnosed with moderate/severe depression and alleviate SI.</p>	<p>Blind multicentre RCT of phenomenological art therapy. Participants assigned to intervention (n=43) or TAU (n=36)</p> <p>Intervention (art therapy): 1hr weekly sessions over 10 weeks and each session has a new art task. TAU: included acupuncture, CBT, ECT, interpersonal therapy, occupational therapy, pharmacological therapy, gemena activity recipe, physiotherapy, psychodynamic therapy, and supportive therapy.</p> <p>Outcome measures incl. depression, self-esteem, SI Measures collected at baseline, post-treatment and 13-week follow-up.</p>	<p>No significant differences in treatment groups pre-treatment.</p> <p>By follow-up,</p> <ul style="list-style-type: none"> <li>depressive symptoms reduced for art therapy group but not TAU, even when gender and diagnosis were controlled for</li> <li>Self-esteem improved significantly for both with no differences between treatment groups</li> <li>SI improved for both groups but no differences between treatment groups</li> </ul>
<p>Wilks (2014)<sup>190</sup></p> <p>USA</p>	<p>A description of the authors use of art and poetry to help cope with grief of losing their grandson who died by suicide</p>	<p>N/A</p>
<p>Testoni et al. (2020)<sup>176</sup></p> <p>Italy</p> <p>To evaluate the efficacy of the intervention in helping young people cope with peer suicide and become aware of their own negative emotions and how to cope</p>	<p>Intervention is a training programme for death education (DeEd) which aims to provide information on death to aid emotional understandings, understanding the meaning of life, strengthen critical thinking and sharing experiences with friends/classmates. Can help to admit that life is precious even if difficult sometimes. This is achieved via 4X 2-hr sessions using film, photography &amp; psychodrama. Participants watched Disney's Coco and then carried out psychodrama activity to re-enact, engaged in photo voice activity to take pictures of 'in my life I would like to...' and create posters illustrating their emotions, futures and sense of life.</p> <p>Participants assigned to intervention (n=81; 38 girls &amp; 43 boys) or control group (n=69; 35 girls &amp; 34 boys) all aged 12–14 years</p> <p>Measures incl. resilience, hopelessness, difficulty identifying &amp; communicating feelings, psychological wellbeing</p>	<p>At baseline, the experimental group had significantly more difficulties in understanding one's own emotions.</p> <p>No significant change for resilience, hopelessness or psychological wellbeing</p> <p>Significant improvement in identifying and communicating feelings for intervention group but not controls but reliability of this scale was low when psychometrically tested.</p>
<p>Guntarik et al. (2015)<sup>81</sup></p> <p>Australia</p>	<p>Includes an autobiographical perspective of one woman and author who had lost a family member to suicide.</p>	<p>Writing helped to construct meaning &amp; memorialise lost relative. The author reports that creative writing helps to gain understanding of the past and why someone may die or grieve.</p>
<p>Silverman et al. (2013)<sup>171</sup></p>	<p>A case study of a 2-day suicide</p>	<p>Creating art allowed participants to address</p>

Author, aims & objectives	Method	Findings
<p>Canada</p>	<p>symposium to help raise awareness of suicide. Symposium audio recorded and photographed.</p> <p>18 participants representing different cultural, community and religious organisations</p> <p>Symposium had posters on the walls, began with each organisation presenting their cultural perspective of suicide, dramatizations were created, banners created also.</p>	<p>private and difficult topics, dispelling fear</p> <ul style="list-style-type: none"> <li>Culturally specific themes included forgiveness, religious connotations (eg loss of connection with the soul, illegitimate death, romanticising suicide through rituals), burdensomeness, silence, shame and blame.</li> <li>Cross cultural themes included taboo subject, stigma, hiding pain and as a reaction to suicide (eg wearing a mask), intergenerational/collective trauma, isolation, witnessing others and being witnessed, connection, circles (and being left out of), dualities (dark/light; hope/despair; pain/beauty), rising/sun</li> </ul> <p>Creative art allowed participants to engage in meaningful dialogue about suicide, and the art itself rejects the destructiveness of suicide. Arts can elicit hope and connection to others and create a strong desire to take action.</p>
<p>Lindblad &amp; deBoise (2020)<sup>112</sup></p> <p>Sweden</p> <p>To explore wellbeing effects from different kinds of musical engagement among older men (retired)</p>	<p>15 semi-structured interviews lasting 60-90mins with men aged 66-76 recruited via purposeful sampling via flyers advertised in a wide range of musical contexts.</p> <p>Interviews covered:</p> <ul style="list-style-type: none"> <li>Demographic &amp; background information and social life</li> <li>Ways of engaging in music</li> <li>Motivations and rewards from musical engagement</li> </ul>	<p>4 key themes:</p> <ul style="list-style-type: none"> <li>Emotions &amp; embodiment: music is significant, deep, important &amp; enriching helping to connect to emotions</li> <li>Adjusting to growing older: retiring gives the freedom to spend more time with music and spend time with others with similar interests</li> <li>Developing and maintaining friends: and receiving emotional support.</li> <li>Maintaining contact as caregivers</li> </ul> <p>Music provides the men with social and emotional rewards.</p>
<p>Lindblad (2021)<sup>111</sup></p> <p>Sweden</p> <p>To investigate how older men who are at risk of loneliness interact in a group setting with music</p>	<p>A music group was established – not music therapy but facilitator was a music therapist. 16 sessions were held for 90 minutes at a time. Participants were able to choose music and discuss whatever they found relevant.</p> <p>Groups were in a focus group style and audio recorded and observed with field notes taken. Participants also participated in 1:1 interviews. Questionnaires measuring emotional wellbeing were also recorded at 1<sup>st</sup>, 4<sup>th</sup>, 8<sup>th</sup> and 16<sup>th</sup> sessions.</p> <p>8 males participated aged 64-86</p>	<p>Group sessions were well received and low attrition rates.</p> <p>Participants struggled with a range of issues included anxiety, depression, restlessness and many had backgrounds of parental comorbidity.</p> <ul style="list-style-type: none"> <li>Participants often chose songs to create a positive mood, using music for affect regulation. Music described as 'a mental safety net' or 'an oasis'</li> <li>Preference to talk about facts and narratives around the music than personal self-disclosures. One person who chose music connected to different life stages was regarded in follow-up interviews by other participants as 'taking up too much space'</li> <li>Participants often identified with emotional states of the artists rather than empathy towards other group members.</li> </ul> <p>Music created a positive atmosphere in the group and created a relaxed, stimulating and meaningful atmosphere. But, music did not facilitate self-disclosure and social connectedness.</p>
<p>Gerlach &amp; Greene (2020)<sup>77</sup></p>	<p>A Hispanic university – graduate assistants worked with the library to provide an easy-access, visible</p>	<p>Positive affirmations written to those who might be suffering to build a caring community.</p> <ul style="list-style-type: none"> <li>Messages acknowledging MH issues to</li> </ul>



Author, aims & objectives	Method	Findings
<p>USA</p> <p>To investigate themes to emerge from the words, phrases and messages created during a university public art project centred on suicide prevention</p>	<p>space with art supplies for students to engage in creative expression.</p> <p>Art students helped by submitting art work on the topic of MH to establish a safe space and set the tone. 12 submissions were displayed.</p> <p>Participants were to write/draw messages on posters and some stencils were supplied. 20 posters were created. Posters were analysed.</p>	<p>empower open discussion on the topic and normalise MH problems.</p> <ul style="list-style-type: none"> <li>• Advice given to help deal with or reframe pain or persevering through pain.</li> <li>• Giving permission to others to feel/do what they want</li> <li>• To extend a feeling of togetherness.</li> <li>• Religious support</li> </ul> <p>Having an open display of supportive words and honest conversations happening on some of the poster boards helps combat silence and secrecy as well as promote awareness around this important topic</p>
<p>Abdulah &amp; Abdulla (2020)<sup>3</sup></p> <p>Iraq</p> <p>To evaluate the effectiveness of participation in a 2-month art-based experience course on SI in women who survived an ISIS attack</p>	<p>14 participants living in a IDP camp</p> <p>Intervention: 3 1-hr sessions p/w for 2 months. 4 participants also completed a MH recovery session. With training, participants were asked to draw the non-violent and peaceful aspects of nature.</p> <p>Measures included demographics (age, sleep hours, education, and marital status), SI &amp; SA, suicide risk, suicide plans, deterrents &amp; willingness to disclose suicidal thoughts. collected baseline and post-intervention</p>	<p>Participants had planned to kill themselves at least once but did not try 43% SI/SA following the ISIS attack but all had told someone</p> <p>Significant decreases in SI, wish to die, desire to make and active or passive SA, suicide plans, feelings of capability to carry out a planned suicide Significant increases in wish to live, suicide deterrents</p> <p>No significant change in reason to live</p> <p>Creative art-based intervention can reduce suicidal risk but moderate level reason for living could suggest future ideation and/or attempts.</p>
<p>Rasmussen et al. (2017)<sup>156</sup></p> <p>Australia</p> <p>To assess the impact of an Aboriginal art programme on the incidence of suicide or self-harm risk for Aboriginal prisoners</p>	<p>Retrospective cohort study including 335 newly sentenced male Aboriginal prisoners incarcerated between 2008-10</p> <p>Administrative data analysed for reasons for incarceration, offence history, DOB, admission and release dates, health status, days engaged in vocational activity, education, work, breaches of discipline, present alcohol/drugs withdrawal symptoms, grief/loss issues</p> <p>Suicide/self-harm risk factors drawn from an initial needs assessment and held within the administrative data. Recorded as high/medium/low risk</p> <p>No. of days prisoners attended an Aboriginal art programme was also recorded. Art programme was facilitated by a cultural liaison officer and held in a different prison block. Attendance was voluntary and accessible every day but restricted to those not currently at risk of suicide/self-harm (ie high risk)</p>	<p>32% cohort attended the art programme at least once</p> <p>No difference between attendees/non-attendees and age, suicide/self-harm history, drug/alcohol withdrawal issues</p> <p>Attendees more likely to have a history of violent offending and have grief/loss issues. Non-attendees more likely to have psychiatric issues.</p> <p>Increased attendance days in the art programme were associated with reduced incident of suicide/self-harm risk.</p> <p>Each day of attendance to the art programme was associated with 19% decrease in rate of suicide/self-harm risk.</p>

**Table 7: Academic literature for counselling and psychotherapies**

Author, aims & objectives	Method	Findings
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## Counselling & psychotherapy

<p>Cuijpers et al. (2012)<sup>47</sup></p> <p>International studies</p> <p>To systematically review studies of psychotherapy for depression where suicidality and hopelessness outcomes were reported</p>	<p>Systematic review of multidisciplinary databases for RCTs</p> <p><u>Inclusion criteria:</u> Participants: Adults over age of 18 with a depressive disorder according to a diagnostic interview or an elevated depressive symptomology on a self-report scale</p> <p>Intervention: psychological treatment Comparison: Waiting-list, TAU or placebo</p> <p>Outcomes: SI, suicide risk and hopelessness</p> <p>Study design: RCTs</p>	<p>13 studies: 3 studies only focussed on suicidality (Mindfulness-based CBT n=1, CBT and Existential humanistic cognitive therapy as two study conditions (n=1) and CBT (n=1)</p> <p>No significant effect of psychotherapy for suicidality was found (mean effect size <math>g=0.12</math>, 95%CI=-0.20-0.44)</p>
<p>Davidson &amp; Tran (2013)<sup>49</sup></p> <p>International studies</p> <p>To investigate if more intensive therapies have different outcomes from less intensive therapies for suicidal behaviour and depression in individuals with borderline personality disorder who had engaged in a recent suicidal act.</p>	<p>Systematic review of multidisciplinary databases from January 1995 to February 2012. Screening discussed between authors and data extracted independently. Methodological quality not assessed.</p> <p><u>Inclusion criteria</u> Participants: Individuals with borderline personality disorder (DSM-IV criteria) aged 18 years and over with a history of engagement in suicidal act.</p> <p>Intervention: All lengths and intensities of psychological treatments e.g. cognitive analytic therapy, cognitive behavioural therapy for personality disorder, interpersonal psychotherapy etc.</p> <p>Outcomes: suicidal acts and depression within the trial or post-trial period of 2 years</p> <p>Study design: controlled trials and randomised controlled trials</p>	<p><u>Suicidal acts</u> <i>Less intensive therapies (100 hours or fewer over 12 months) n=3 studies.</i> Two studies found significant decrease in the mean number of suicidal acts and self-harm episodes. Two studies found no between-group difference in n of people engaging in suicidal behaviour.</p> <p><i>More intensive therapies (over 100 hours in 12 or more months) n=3 studies</i> Two studies significant reduction in number of individuals engaging in suicidal acts/attempts. One study- no between-group differences reported.</p> <p>All therapies (including treatment as usual) reported reduced suicidal behaviour over time.</p> <p><u>Depression</u> <i>Less intensive therapies (100 hours or fewer over 12 months) n=3 studies</i> One study reported a significant decrease in depression in therapy group. One study did not find a between-group difference and one study did not report on depression directly.</p> <p><i>More intensive therapies (over 100 hours in 12 or more months) n=3 studies</i> None of the studies found significant between-group differences in depression. All therapies reported a decrease in depression over time.</p> <p><u>Long-term follow-up</u> <i>Two years:</i> one study- no completed suicides <i>Six years:</i> one study- 1 completed suicide in each group</p> <p>Patients (in all groups incl. usual care) tended to improve during follow-up</p>

Author, aims & objectives	Method	Findings
<p>Lana &amp; Fernández-San Martin (2013)<sup>103</sup></p> <p>International studies</p> <p>To describe pre-treatment selection, adherence to and efficacy of psychotherapy for individuals with borderline personality disorder</p>	<p>Systematic review of multidisciplinary databases from 1990 to May 2012. Independent study selection and methodological quality assessment.</p> <p><u>Inclusion criteria:</u> Participants: individuals over 18 years old with diagnosed Borderline Personality Disorder.</p> <p>Intervention: Manualised psychotherapy</p> <p>Outcomes: number of patients for psychiatric admission, number of patients with SAs, number of patients with self-injuries without suicidal intent, duration of admissions, number of suicides and number of self-injuries.</p> <p>Study design: RCTs, reviews and clinical guidelines</p>	<p>11 studies; different number of studies contributing data to each outcome</p> <p>Variability between studies in outcomes</p> <p>Significant variability in number of individuals who start and discontinue therapy- which will have an impact on the efficacy of treatment. Estimation that for around 40% patients, manualised psychotherapy would not be effective.</p>
<p>Winter et al. (2013)<sup>192</sup></p> <p>International studies</p> <p>To review the literature (including published systematic reviews) on the effectiveness of counselling and psychotherapy on individuals at risk of suicide. To identify literature about the process of counselling and psychotherapy with individuals who are at risk of suicide.</p>	<p>Systematic review of multidisciplinary databases up to February 2008. Screening undertaken independently for only 50 titles. Methodological quality was assessed (not reported if independently).</p> <p><u>Inclusion criteria</u> Participants: Any individual of any age, with any psychiatric diagnosis or at risk of suicide (SI or SA history).</p> <p>Intervention: any form of counselling or psychotherapy for SAs or self-harm.</p> <p>Outcomes: frequency of repetition of self-harm or suicidal behaviour, SI, hopelessness or other measures e.g. depression (where participants were recruited due to suicide risk).</p> <p>Study design: systematic reviews, randomised controlled trials, non-randomised studies, uncontrolled before-and-after studies and process evaluations.</p>	<p>1 review Cognitive Behavioural Therapy (CBT) effective for reducing suicidal behaviour 1 review no evidence the psychosocial interventions post-self-harm and subsequent suicide Two reviews problem-solving therapy more favourable</p> <p>Meta-analysis of controlled studies: effect size= -0.45 (95% CI: -0.57 to -0.32, p&lt;0.001). There was a significantly greater improvement in outcomes for the psychotherapy/counselling compared to the control group. Subgroup analysis for CBT, Dialectical Behaviour Therapy (DBT) and Problem-solving therapy all found significant improvements in the therapy versus control groups.</p> <p>Meta-regression of controlled studies: 20% of variance in model explained by modality of therapy (individual, group or both), age, quality of study, number of hours in therapy, treatment setting and follow-up period.</p> <ul style="list-style-type: none"> <li>• Fewer hours of therapy (less than 6) had a larger effect than studies delivering between 6 and 20 hours.</li> <li>• Inpatient treatment had a larger effect than other therapy settings</li> <li>• Treatments with shorter follow-up time-points perform better than treatments with longer follow-up</li> </ul> <p>Meta-analysis of before-and-after studies: effect size=-0.72 (95% CI: -0.853 to -0.579, p&lt;0.001). There was a significantly greater reduction in suicidal outcomes at the end of therapy. Subgroup analysis found no evidence of improvement for CBT, but improvement was observed for DBT and problem-solving therapy.</p>



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		<p>Meta-regression of before-and-after studies: 22% of variance in model explained by variables</p> <ul style="list-style-type: none"> <li>• Fewer hours of therapy (less than 6) had a larger effect than studies delivering between 6 and 20 hours.</li> <li>• Studies with less than 50% representation of women had larger effect sizes</li> </ul> <p>Overall, evidence of the effectiveness of counselling and psychotherapy for suicidal outcomes.</p>
<p>Winter et al. (2014)<sup>193</sup></p> <p>International studies</p> <p>To synthesis qualitative studies on psychotherapy and counselling in suicide prevention including client and therapist perspective of the process, effectiveness and barriers/facilitators.</p>	<p>Systematic review of multidisciplinary databases up to February 2008. Methodological quality assessed</p> <p><u>Inclusion criteria:</u>  Participants: Individuals engaging in suicidal behaviour or who were at risk of suicide due to SI or previous SAs or therapists.</p> <p>Interventions: Component of counselling or psychotherapy</p> <p>Study designs: qualitative studies</p>	<p>13 studies identified: DBT (n=4), counselling (n=5), psychodynamic interpersonal therapy (n=1) and psychoanalytic therapy (n=1)</p> <p>Three overarching thematic areas: <i>Process of counselling or psychotherapy in suicide prevention, Effectiveness of counselling or psychotherapy in suicide prevention and Barriers and facilitators of counselling or psychotherapy in suicide prevention</i></p> <p><i>Process of counselling or psychotherapy in suicide prevention</i>  Theme 1: Therapist qualities  Sub-themes: a) Respect; b) Understanding; c) Non-judgemental</p> <p>Theme 2: Therapist components  Sub-themes: a) Duration and number of sessions; b) Therapy contract;</p> <p>Theme 3: Theoretical framework</p> <p>Theme 4: Therapy techniques  Sub-themes: a) Group therapy; b) Skills training as part of DBT; c) Telephone coaching; d) Silence; e) Advice; f) Validation</p> <p><i>Effectiveness of counselling or psychotherapy in suicide prevention</i>  Theme 1: Decrease in self-destructive behaviour</p> <p>Theme 2: Quality of life  Sub-themes: a) Dealing with emotions; b) Improvement in interpersonal life; c) Aspiration</p> <p><i>Barriers of counselling or psychotherapy in suicide prevention</i>  Theme 1: Therapist characteristics e.g. gender</p> <p>Theme 2: Therapy components  Sub-themes: a) Language; b) Balance</p> <p>Theme 3: Secrecy</p> <p>Theme 4: Transferring to the real life situation</p> <p>Theme 5: Responsibilities of the profession</p> <p>Theme 6: Training</p>

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		<p><i>Facilitators of counselling or psychotherapy in suicide prevention</i></p> <p>Theme 1: Responsibility</p> <p>Theme 2: Support</p> <p>Theme 3: Teaching therapy skills to family members</p>
<p>Devenish et al. (2016)<sup>53</sup></p> <p>International studies</p> <p>To identify and review whether psychological interventions to prevent and/or treat depression also reduce suicidality</p>	<p>Systematic review of multidisciplinary databases up to April 2015. Review methods not fully reported.</p> <p><u>Inclusion criteria:</u>  Participants: adolescents aged between 11 and 19 years old</p> <p>Interventions: psychological treatment or prevention intervention that had content based in a recognised psychological theory</p> <p>Comparison: Waitlist, usual care or alternative treatment conditions</p> <p>Outcomes: SI, gestures or SA</p> <p>Study design: Experimental design with pre and post outcome assessment</p>	<p>35 articles on 16 studies: Treatment studies (n=12) and prevention studies (n=4); CBT (n=9) and other psychological treatments including systemic family therapy, attachment-based family therapy and interpersonal therapy (n=7). Treatment interventions: individual-delivered therapy (n=6), family-based intervention (n=4), group-delivered treatment (n=2), combined individual and family sessions (n=2). Prevention studies: none of the interventions were psychotherapy or counselling</p> <p><i>Pharmacotherapy versus psychotherapy (5 studies)</i>  Suicidality decreased for all treatment groups even in the long-term, but no significant differences between treatment groups.</p> <p><i>CBT versus psychological therapies (4 studies)</i>  Suicidality decreased for all treatment groups, but no significant differences between treatment groups.</p> <p><i>Other psychological treatments</i>  <i>Interpersonal therapy (1 study)</i>  Significantly greater reduction in treatment versus TAU group</p> <p><i>Attachment-based Family Therapy (2 studies)</i>  Significantly greater change in self-reported SI and clinical recovery (assessed by SI Questionnaire-Junior) therapy group compared to enhanced usual care.</p> <p>For LGB adolescents decrease in suicidality over course of treatment (no control group).</p>
<p>Hawton et al (2016)<sup>84</sup></p> <p>International studies</p> <p>To review the effectiveness of psychosocial interventions for self-harm in adults</p>	<p>Systematic review (and meta-analysis) of multidisciplinary databases from January 1998 to April 2015. Independent data extraction. Risk of bias assessment undertaken (not clear if conducted independently).</p> <p><u>Inclusion criteria:</u>  Participants: individuals aged 18 or older who had engaged in self-harm within the past 6 months.</p> <p>Intervention: psychosocial intervention (inclusive of CBT, PST, DBT, case management and postcards). Findings segregated according to type of psychosocial</p>	<p>29 trials identified.</p> <p><u>Cognitive behavioural-based psychotherapy (inclusive of CBT and PST) versus control</u>  <i>Repetition of self-harm at 6-months</i>  Significant reduction in repetition of self-harm for treatment compared to the control group (Odds Ratio=0.54; 95%CI=0.34-0.85; n=12 studies)</p> <p><i>Repetition of self-harm at 12-months</i>  Significant reduction in repetition of self-harm for treatment compared to the control group (Odds ratio=0.80; 95%CI=0.65-0.98; n=10 studies)</p> <p><i>Completed suicides</i>  No significant difference in completed suicides between groups (Odds ratio=0.66; 95%CI=0.29-1.51; n=15 studies)</p>

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	<p>intervention.</p> <p>Comparison: treatment as usual, enhanced usual care, lower intensity or alternative therapy</p> <p>Outcomes: self-harm defined as including any non-fatal act of self-poisoning or self-injury regardless of intent or motivation.</p> <p>Study design: RCT</p>	<p><u>Dialectical Behaviour Therapy versus control</u> <i>Repetition of self-harm at 6-months</i> No significant difference in self-harm between groups (Odds ratio=0.59; 95%CI=0.16-2.15; n=3 studies)</p> <p><i>Repetition of self-harm at 12-months</i> No significant difference in self-harm between groups (Odds ratio=0.36; 95%CI=0.05-2.47; n=2 study)</p> <p><i>Completed suicides</i> No significant difference in completed suicides between groups (Odds ratio=3.00; 95%CI=0.12-76.49; n=1 study)</p>
<p>Cox &amp; Hetrick (2017)<sup>43</sup></p> <p>International studies</p> <p>To identify evidence from previously published systematic reviews of psychosocial interventions for children and young people under 25 years old targeting suicidal related behaviours.</p>	<p>Systematic review of multidisciplinary databases up to January 2017.</p> <p><u>Inclusion criteria:</u> Participants: Children and young people under 25 years old with a history of suicidal-related behaviour</p> <p>Interventions: Individual-delivered psychosocial intervention</p> <p>Outcomes: primary or secondary outcome is suicidal-related behaviour or incidence of suicide</p> <p>Study design: systematic reviews of RCTs</p>	<p>8 RCTs related to counselling or talking therapies: CBT (n=4), PST (n=3) and interpersonal psychotherapy (n=1).</p> <p>Evidence is mixed regarding improvements in SI or attempts across the therapies. Small samples and under-powered studies.</p>
<p>Cristea et al. (2017)<sup>44</sup></p> <p>International studies</p> <p>To update a systematic review and meta-analysis of RCTs assessing the efficacy of psychotherapy for Borderline Personality Disorder-relevant outcomes</p>	<p>Systematic review of multidisciplinary databases up to November 2015. Study screening undertaken independently. Risk of bias assessed.</p> <p><u>Inclusion criteria:</u> Participants: adults diagnosed with Borderline Personality Disorder</p> <p>Intervention: Psychotherapy (verbal communication, structured and purposeful therapist-patient encounters and the establishment of a therapeutic relationship)</p> <p>Comparison: Including but not limited to treatment as usual. Comparison to other treatments for Borderline Personality Disorder not included.</p>	<p>33 RCTs included.</p> <p>Most commonly identified psychotherapies include: DBT (n=12), psychodynamic approaches (n=8) and CBT (n=5).</p> <p><u>Self-harm and para-suicidal behaviour</u> <i>RCT (comparing treatment to treatment as usual/no treatment)</i> Significant effect of treatment versus control immediately following treatment (<math>g=0.32</math>; 95%CI=0.09-0.54; n=13 studies) and during follow-up (<math>g=0.58</math>; 95%CI=0.06-1.10; n=5 studies) <i>RCT (comparing treatment in addition to usual care and control)</i> No significant effect immediately post-treatment (<math>g=0.24</math>; 95%CI=-0.07-0.55; n=6 studies) or during follow-up (<math>g=0.04</math>; 95%CI=-0.21-0.30; n=4 studies)</p> <p><u>Suicide</u> <i>RCT (comparing treatment to treatment as usual/no treatment)</i> Significant effect of treatment versus control immediately following treatment (<math>g=0.44</math>; 95%CI=0.15-0.74; n=10 studies), but no effect during follow-up (<math>g=0.34</math>; 95%CI=-0.06-0.74; n=5 studies).</p>

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		<p><i>RCT (comparing treatment in addition to usual care and control)</i>            Significant effect for treatment immediately post-treatment (<math>g=0.35</math>; 95%CI=0.02-0.68; <math>n=3</math> studies) or during follow-up (<math>g=0.31</math>; 95%CI=-0.04-0.66; <math>n=2</math> studies)</p>
<p>Leavey &amp; Hawkins (2017)<sup>108</sup></p> <p>International studies</p> <p>To assess the effect of CBT on suicidal individuals aged 16 years and older and whether e-delivered CBT is comparable to face-to-face delivered CBT.</p>	<p>Systematic review of multidisciplinary databases up to April 2016. Independent study screen of full texts. Methodological quality assessed but not reported if independent.</p> <p><u>Inclusion criteria:</u>            Participants: aged over 16 years</p> <p>Intervention: CBT as described by Beck 1967, 2011.</p> <p>Comparison: control group (undefined)</p> <p>Outcome: SI or behaviour</p> <p>Study design: RCT</p>	<p>26 studies included.</p> <p><u>Face-to-face CBT</u>  <i>Continuation outcomes</i>            Small effect of CBT on SI and behaviour compared to controls (SMD= -0.24; 95%CI= -0.41- -0.017; <math>n=15</math> studies).</p> <p><i>Dichotomous outcomes</i>            Medium effect of CBT on SI and behaviour compared to controls (Risk ratio= 0.62; 95%CI=0.44-0.88; <math>n=4</math> studies).</p> <p><u>e-delivered CBT</u>  <i>e-CBT versus face-to-face CBT</i>            Two studies: no significant between-group differences reported. One study only found improvement in SI from pre to post test.</p> <p><i>Unguided eCBT versus general information provision</i>            Two studies: both reported a significant reduction in SI in the treatment condition versus controls. One study reported an improvement in the control group also during the 6-week period.</p>
<p>Okolie et al. (2017)<sup>134</sup></p> <p>International studies</p> <p>To identify and review articles on the effectiveness of interventions to prevent suicidal behaviour and reduce SI in older people</p>	<p>Systematic review of multidisciplinary databases up to April 2016. Independent study screening and methodological quality assessment.</p> <p><u>Inclusion criteria:</u>            Participants: Adults aged 60 years or older</p> <p>Interventions: Intervention to prevent suicidal behaviour or reduce SI</p> <p>Comparison: Individuals or groups who did not received the intervention</p> <p>Outcomes: Suicide, SI, self-harm</p> <p>Study design: primary research study of any design with a comparator</p>	<p>21 studies: Psychotherapy (<math>n=3</math> including humour therapy to be excluded (<math>n=1</math>)) and telephone counselling (<math>n=3</math>; excluded as no suicide-related outcomes captured)</p> <p>Mixed evidence from two studies that psychotherapy is effective for suicidal-related behaviours in older people.</p>
<p>Briggs et al. (2019)<sup>22</sup></p> <p>International studies</p> <p>To systematically review RCTs of psychodynamic and psychoanalytic therapies for reducing SAs and self-harm.</p>	<p>Systematic review of multidisciplinary databases up to March 2017.</p> <p><u>Inclusion criteria:</u>            Participants: Children, adolescents and adults in any setting</p> <p>Intervention: psychoanalytic or psychodynamic psychotherapy for suicidal behaviour, self-harm or self-injury</p>	<p>12 studies: outpatient and community setting (<math>n=9</math>), combination of A&amp;E and outpatient (<math>n=1</math>); A&amp;E and patient's home (<math>n=1</math>) and an inpatient setting (<math>n=1</math>)</p> <p>SAs            Significant treatment effect for psychotherapy versus TAU on the number of patients who attempted suicide at 12-month follow-up (Odds ratio=0.469; 95%CI=0.274-0.804; <math>n=3</math> studies)</p>

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	<p>Comparison: treatment as usual, routine psychiatric care, enhanced usual care, placebo or any other comparison including with a difference psychological therapy</p> <p>Outcomes: Occurrence of repeated self-harm, SAs and self-injuries. Other outcomes include depression, anxiety, psychosocial functioning and hospital admissions</p> <p>Study design: RCTs</p>	<p>No significant treatment effect for psychotherapy versus TAU on the number of SAs at 12-month follow-up (SMD=-0.235; 95%CI=-0.502-0.033; n=2 studies)</p> <p><i>Self-harm</i> Significant treatment effect for psychotherapy versus TAU on the number of patients who repeated self-harm (self-harm and SAs combined) at 6-month follow-up (Odds ratio=0.27; 95%CI=0.109-0.668; n=2 studies)</p> <p>No evidence of treatment effect for psychotherapy versus TAU on the number of patients who repeated self-harm (self-harm and SAs combined) at 12-month follow-up (Odds ratio=0.581; 95%CI=0.236-1.426; n=3 studies)</p> <p>No evidence of treatment effect for psychotherapy versus TAU on self-harm episodes at 12-month follow-up (SMD=-0.149; 95%CI=0.388-0.089; n=3 studies)</p> <p><i>Subgroup analysis</i> No evidence of significant differences in populations (adult versus adolescents), self-harm histories (acute versus chronic) or long- and short-term interventions (treatment for &gt;1 year or &lt;1 year)</p>
<p>Méndez-Bustos et al. (2019)<sup>122</sup></p> <p>International studies</p> <p>To review observational studies exploring the effect of psychotherapy in the prevention of suicidal behaviours; describe the quality of this literature; identify innovative approaches and recommendations for future research</p>	<p>Systematic review of multidisciplinary databases up to March 2018. Study selection undertaken by two reviewers. Methodological quality assessment undertaken independently by two reviewers.</p> <p><u>Inclusion criteria:</u> Participants: any population presenting with SI, plans or attempts</p> <p>Intervention: Psychotherapy (individual or group)</p> <p>Outcomes: SI and suicidal attempt with intent</p> <p>Study design: Observational studies</p>	<p>40 studies included.</p> <p>Most studies included CBT or DBT. Other approaches include: interpersonal psychotherapy, psychodynamic oriented therapy and family therapy</p> <p>Populations of study: borderline personality disorder (n=13), depression (n=6), mood disorders (n=4) and personality disorders (n=3) and DSM-V suicidal behaviour disorder (n=1)</p> <p>A decrease was found for SI (22/23 studies) and suicidal attempts (15/17 studies). Group-delivered interventions were effective in reducing SI.</p>
<p>Hurzeler et al. (2021)<sup>88</sup></p> <p>International studies</p> <p>To synthesise the literature regarding the effectiveness of psychosocial interventions targeting suicide prevention, self-harm and alcohol consumption reduction for individuals with alcohol problems.</p>	<p>Systematic review of multidisciplinary databases up to July 2020. Screening undertaken by one reviewer in consultation with other reviewers. Methodological quality assessment undertaken independently.</p> <p><u>Inclusion criteria:</u> Participants: individuals with 50% sample having alcohol use disorder, alcohol dependence or alcohol abuse (according to DSM criteria) or problematic alcohol use</p>	<p>6 RCTs: 3 DBT, 2 integrated CBT and 1 dynamic deconstructivist therapy</p> <p>All studies had some concerns or high risk of bias.</p> <p>No clear conclusions about the effectiveness of psychosocial interventions for prevention of suicidal behaviour in individuals with alcohol problems.</p>

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	<p>(standardised measure) or consumption of more than four (women) or five (men) drinks per occasion within the last 30 days. Comorbid physical and MH conditions permitted. No age restrictions.</p> <p>Intervention: Psychosocial face to face interventions delivered in an outpatient setting</p> <p>Comparison: Comparator treatment</p> <p>Outcomes: self-harm, SI, suicidal behaviours, alcohol consumption, severity of alcohol problems and treatment engagement outcomes</p> <p>Study design: RCTs</p>	

**Table 8: Academic literature for crisis de-escalation**

Crisis de-escalation		
<p>Lindström et al. (2020)<sup>114</sup></p> <p>Sweden</p> <p>To explore patients' experiences of the caring encounter with the psychiatric emergency response unit</p>	<p>Qualitative interview study of 14 individuals who had been supported by the psychiatric emergency response unit.</p> <p>Semi-structured interviews and analysed inductive content analysis.</p> <p>Psychiatric emergency response unit:</p> <ul style="list-style-type: none"> <li>• Suicide prevention is the main priority</li> <li>• Respond to emergency calls for all individuals facing acute crises or mental illness</li> <li>• Vehicle resembles an ordinary ambulance</li> <li>• Service operated by two registered nurses specialised in psychiatric care and one emergency medical technician</li> <li>• Calls triaged by emergency medical communication centre according to three levels of priority (acute life-threatening, acute but not life-threatening and transportation to hospital/other caregivers may be needed)</li> </ul>	<p>Three categories identified: <i>Patients actively participated in the decision making, Patients received care without fear of being dismissed, ignored and judged and The professional personnel created a safe caring environment</i></p> <p>Categories contributed to <i>Participation and dignity in the caring encounter with psychiatric emergency response unit increase the sense of security</i></p>
<p>Fendrich et al. (2019)<sup>68</sup></p> <p>USA</p> <p>To test the hypothesis that youths with psychiatric diagnoses first seen by the mobile crisis intervention service were</p>	<p>Quasi-experimental design</p> <p>Mobile Crisis Intervention provided to young people under the age of 18 years or older young people still at high school. Service is accessed by calling a dedicated assigned number to a call specialist at a call centre. Onsite team includes: site director,</p>	<p>Sociodemographic, clinical and service utilisation differences between two comparison groups.</p> <p><i>ED visits during follow-up</i>            Combined sample: 45.1% (n=2,930)            Mobile Crisis Service sample: 43.5% (n=1,102, range 1-32 visits)            Comparison sample: 46.1% (n=1,929, range 1-39 visits)</p>



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<p>significantly less likely to receive subsequent Emergency Department (ED) health services compared to comparable youths first seen in the ED.</p>	<p>multiple master's level clinicians e.g. social worker, psychologist, marriage and family therapy and, access to a child and adolescent psychiatrist (for psychiatric evaluation and medication management).</p> <p>Components of intervention incl.</p> <ul style="list-style-type: none"> <li>• Crisis stabilisation and support</li> <li>• Screening and assessment</li> <li>• Suicide assessment and prevention</li> <li>• Brief, solution-focussed interventions</li> <li>• Referral and linkage ton ongoing care</li> <li>• Care episode can last for up to 45 days</li> </ul> <p>Intervention group: n=2,532 youths under age of 18 receiving mobile crisis service contact during fiscal year 2014. Other eligibility criteria relating to health insurance.</p> <p>Comparator group: n=3,961 youths under age of 18 who had at least one behavioural health ED Medicaid claim and no mobile crisis service contact during fiscal year 2014. Other eligibility criteria relating to health insurance.</p> <p>Outcomes: behavioural health ED visits during 18-month follow-up. ED visit with a psychiatric diagnosis &amp; number of ED visits</p>	<p><i>No ED visits during follow-up</i> Mobile Crisis Service sample: 56.5% (n=1,430) Comparison sample: 53.9% (n=2,133)</p> <p><i>Regression analysis</i> Logistic regression (dichotomous outcome) and negative binomial regression (continuous outcome) indicates that overall, mobile crisis service users had significant reduction in subsequent behavioural service ED use.</p>
<p>Bryan et al. (2017)<sup>24</sup></p> <p>USA</p> <p>To compare the effectiveness of crisis response planning (versus contract for safety) on suicidal thoughts and behaviours during a 6-month follow-up</p>	<p>RCT with participants allocated to one of three groups following suicide risk assessment using the Beck Scale for SI.</p> <p>Crisis Response Plan</p> <ul style="list-style-type: none"> <li>• Supportive listening</li> <li>• Warning signs</li> <li>• Self-management skills</li> <li>• Social support</li> <li>• Crisis resources</li> <li>• Referral to treatment</li> </ul> <p>Enhanced Crisis Response Plan</p> <ul style="list-style-type: none"> <li>• Supportive listening</li> <li>• Warning signs</li> <li>• Self-management skills</li> <li>• Reasons for living</li> <li>• Social support</li> <li>• Crisis resources</li> <li>• Referral to treatment</li> </ul> <p>Treatment as usual</p> <ul style="list-style-type: none"> <li>• Supportive listening</li> <li>• Warning signs</li> </ul>	<p>SAs</p> <ul style="list-style-type: none"> <li>• Enhanced crisis response plan (n=2) inclusive of n=1 completed suicide</li> <li>• Crisis response plan (n=1)</li> <li>• Treatment as usual (n=5)</li> <li>• Participants with any crisis response plan had 76% less likely to have an attempted suicide than treatment as usual (when controlling for baseline SI severity, significance disappeared)</li> <li>• No difference between crisis response plans or enhanced crisis response plan and treatment as usual</li> <li>• Standard crisis response plan 85% less likely to attempt suicide than treatment as usual (not significant)</li> </ul> <p>SI</p> <ul style="list-style-type: none"> <li>• SI reduced over time for crisis response plans (taken together) and treatment as usual; declined faster for crisis response plan than treatment as usual</li> <li>• Rate of decline in SI was faster in enhanced crisis response plan than standard crisis response plan</li> </ul>

Author, aims & objectives	Method	Findings
	<ul style="list-style-type: none"> <li>• Crisis resources</li> <li>• Referral to treatment</li> <li>• Contract for safety</li> </ul> <p><i>Participants</i> Active duty U.S. army personnel aged 19-53 years old (n=97) recruited via emergency department, outpatient behavioural health clinic and behavioural health clinics. Presence of SI during the past week or lifetime history of SA, able to speak English and able to provide informed consent</p> <p><i>Outcomes</i> SAs, SI, &amp; use of MH services</p>	<p>MH service utilisation</p> <ul style="list-style-type: none"> <li>• Crisis response planning (taken together and separately) significantly fewer days in inpatient psychiatric wards than treatment as usual.</li> <li>• Crisis response plans did not differ from one another</li> <li>• No difference in any of the groups in terms of outpatient individual therapy sessions.</li> </ul>
<p>Bryan et al. (2018)<sup>25</sup></p> <p>USA</p> <p>To explore patients perspectives and use of crisis response plans compared to treatment as usual</p>	<p>Secondary analysis of Bryan et al. (2017)</p> <p><i>Outcomes incl</i> patient perceptions of use of crisis interventions</p>	<p>Variability in recall of intervention components across interventions.</p> <p>No difference across groups in use of intervention components.</p> <p>Conditional effects of intervention perception, recall and use on later SI Recall of components, participants in the E-CRP group who could recall self-management strategies and sources of social support reported significantly less severe SI than participants in TAU who could recall these same components.</p>
<p>Wharff et al. (2019)<sup>187</sup></p> <p>USA</p> <p>To evaluate the efficacy of a family-based crisis intervention (FCBI) in the Emergency Department for suicidal adolescents and their families</p>	<p>RCT of FCBI (n=71) compared to treatment as usual (n=68)</p> <p><i>FCBI (delivered by psychiatric social workers)</i></p> <ul style="list-style-type: none"> <li>• Standard psychiatric evaluation</li> <li>• 60- to 90-minute session</li> <li>• Develop a crisis narrative</li> <li>• Cognitive behavioural skill building</li> <li>• Therapeutic readiness assessment</li> <li>• Psycho-education about depression</li> <li>• Safety planning</li> </ul> <p><i>Treatment as usual</i> Standard psychiatric evaluation and recommendation for either clinical support or discharge</p> <p><i>Participants</i> All adolescents presenting with suicidality (prior 72 hours: self-reported feeling suicidal, SA or other person noted behaviours directly associated with suicidality) to paediatric Emergency Department between January 2012 and May 2014. Exclusions include: lack of English language fluency, not medically stable, active psychosis or requiring restraint (physical or</p>	<p>At 1-month follow-up no between-group differences in reasons for living, although increases for both groups over the course of the intervention.</p> <p>FCBI significantly higher family empowerment scores and satisfaction than the treatment as usual group.</p> <p>FCBI were significantly less likely to be hospitalised than the treatment as usual group.</p> <p>12 participants required later crisis evaluation (treatment as usual n=3; FCBI n=9). 5 FCBI requiring hospitalisation during 1-month follow-up period; 2 after initial evaluation and 3 were later hospitalised when sent home about initial evaluation.</p>



Author, aims & objectives	Method	Findings
	pharmacological)  <i>Outcomes incl.</i> adaptive qualities and protective factors, family empowerment, satisfaction of service, demographics, recidivism	
Lee et al. (2015) <sup>109</sup>  Australia  To evaluate an Australian joint police-MH mobile response unit known as A-PACER (Police and Clinical Early Response	Mixed methods design of 6-month pilot: audit of activity data from Victoria Police and the MH service and A-PACER staff experience survey  <i>A-PACER</i> Time limited service (between 14:00 and 22:00); joint police officer and MH clinician A-PACER response could be requested to provide an onsite or telephone response for suspected presentation with mental illness. A-PACER officer could alert A-PACER clinician if criteria met: MH assessment, de-escalation, advice on referral or transport options and treatment plans. Follow-up by A-PACER also provided.  <i>Measures incl.</i> audit data (Activity Sheets: time for response, contact criteria, nature of response, type of incident, frequency of presenting, presenting issues, whether force was used, whether mental illness was present and outcome of response (e.g. transported to ED or psychiatric ward or another service); feedback questionnaire (open-ended questions of experience).	296 contacts involved in A-PACER (33% were related to threatened suicide). Average 64min spent per contact by A-PACER. Time of day for contacts: 14:00-16:00 (32% of contacts) or 16:00-18:00 (25%) and 20:00-22:00 (15%).  Following referral: <ul style="list-style-type: none"> <li>• 11% admitted to inpatient psychiatry ward</li> <li>• 22% referred to a non-emergency or inpatient psychiatry service</li> <li>• 20% no further intervention</li> <li>• 9% phone assistance only</li> <li>• 32% transport to emergency department</li> </ul> Police experience <ul style="list-style-type: none"> <li>• All wanted programme to continue</li> <li>• Enhanced outcomes for consumers</li> <li>• More efficient use of police resources</li> <li>• Enhanced outcomes for police</li> <li>• Improved collaboration between services</li> </ul> Clinician experience <ul style="list-style-type: none"> <li>• Some supportive, some not of continuing programme</li> <li>• Improved collaboration with police</li> <li>• Reduced transportation of unwell people to hospital ED</li> <li>• Challenges (e.g. inappropriate referrals)</li> <li>• Environment where some assessments were undertaken (eg in public)</li> </ul>
Stanley & Brown (2012) <sup>174</sup>  USA  To describe (and provide a case example of) a brief intervention (Safety Plan Intervention) to mitigate suicide risk.	Case example  <i>Safety Plan Intervention</i> Upon presentation to ED. Brief intervention lasting 20-45 minutes to complete providing a patient with a prioritised and specific set of coping strategies and sources of support. Developed collaboratively with patient following comprehensive suicide risk assessment. Risk assessment should obtain an account of the before, during and after the recent suicidal crisis.  Basic components of safety plan include: <ul style="list-style-type: none"> <li>• Recognising warning signs</li> <li>• Employing internal coping strategies</li> <li>• Utilising social contacts</li> <li>• Contacting family members or friends who may resolve the crisis</li> <li>• Contacting MH professionals or agencies</li> </ul>	A case example of the safety plan intervention of a 28 year old divorced man with 2 children presenting to ED following a SA

Author, aims & objectives	Method	Findings
<p>Michael et al. (2015)<sup>125</sup></p> <p>USA</p> <p>To describe the Prevention of Escalating Adolescent Crisis Events (PEACE) protocol following the pilot (2012-2013) and to report findings from the 2013-2014 period.</p>	<ul style="list-style-type: none"> <li>Reducing the potential use and access to lethal means</li> </ul> <p>A descriptive study of a rural high school (n=900 students) with an Assessment, Support and Counselling Centre (ASC).</p> <p><i>PEACE protocol</i></p> <ul style="list-style-type: none"> <li>Guide for when a student is at, or identified as being at suicidal or homicidal risk</li> <li>Comprehensive risk assessment of: clinician assessment and self-reports and other reports of behaviour, mood and intent; protective and risk factors and list of prescribed steps to follow</li> <li>Individualised plan of action</li> <li>Risk level applied in increasing severity (Codes green, yellow, orange and red)</li> </ul> <p><i>Outcomes</i></p> <ul style="list-style-type: none"> <li>N students and N crisis events</li> <li>N at each code level</li> <li>Sociodemographics of adolescents in crisis</li> <li>N SAs and completed suicides</li> <li>N students enrolled in MH services following PEACE protocol</li> </ul>	<p>42 students involved in 68 separate crisis events requiring 103 hours of clinician time</p> <p>Code green n=34 (50%), Code yellow n=16 (24%), Code orange n=9 (13%) and Code red n=9 (13%)</p> <p>No completed suicides or SAs that necessitated medical intervention immediately after the PEACE protocol was completed.</p> <p>Five students were at risk for self-harm and were hospitalised. One student was hospitalized twice within the same school year and there was one case of medication overdose.</p> <p>33/42 students were not receiving additional school MH services at the time of the crisis. 14 students were referred for school MH services post-crisis; 9/14 were successfully enrolled into school MH services and remained in treatment until the end of the school year.</p>
<p>Asarnow et al. (2011)<sup>9</sup></p> <p>USA</p> <p>To evaluate the Family Intervention for Suicide Prevention (FISP) in the emergency room independently of an outpatient cognitive-behavioural family treatment.</p>	<p>RCT of patients (n=181) recruited from two emergency department in Los Angeles between April 2003 and August 2005.</p> <p><i>FISP</i> (n=89) Brief youth and family crisis therapy session including:</p> <ul style="list-style-type: none"> <li>Reframing the SA as a problem needing action</li> <li>Family education of the importance of outpatient MH treatment</li> <li>Restricting access to means</li> <li>Obtaining permission from the youth to use a safety plan (development and practice)</li> <li>Telephone contact within first 48 hours of discharge to support outpatient attendance</li> <li>Additional contact as needed at 1, 2 and 4 weeks following discharge</li> </ul> <p><i>TAU</i> (n=92) enhanced by a training session for emergency department staff</p> <p><i>Inclusion criteria</i> Individuals aged 10 and 18 years old</p>	<p>FITP significantly more likely than controls to:</p> <ul style="list-style-type: none"> <li>be linked to outpatient treatment</li> <li>have higher rates of psychotherapy and medication versus monotherapy or no treatment</li> <li>have more outpatient treatment visits</li> </ul> <p>No between-group difference in suicidality outcomes</p>

Author, aims & objectives	Method	Findings
	<p>with suicidal attempts or ideation presenting to Emergency Department.</p> <p><i>Exclusion criteria</i> Acute psychosis or symptoms that would impede consent and assessment, had no parent or guardian to provide consent, did not speak English and parents/guardians who did not speak Spanish or English.</p> <p><i>Outcomes</i> Linkage to outpatient MH treatment; SAs &amp; suicidality</p>	

**Table 9: Academic literature for mindfulness & meditation**

Mindfulness & meditation		
<p>Cheung (2016)<sup>33</sup></p> <p>International studies</p> <p>To review the effects of meditation-oriented therapies on adolescent mental wellness.</p>	<p>Systematic review – covering ProQuest, British nursing index, ERIC, MEDLINE, PILOTS, PsycARTICLES, PsycINFO; articles published before 2014</p> <p>36 papers reviewed involving 3,115 adolescents aged 7–19 years</p>	<p>Interventions were mindfulness based meditation (n=25) and lasting for 3-15 minutes per session with sessions commonly occurring weekly (n=8) or twice a week (n=8) for 2–24 weeks but 8 and 6 weeks were more common.</p> <p>Practicing meditation helps children to reduce anxiety, depression, stress, rumination, SI, self-harm thoughts, etc. and better able to attain interpersonal relationships, QoL and mental wellbeing. Also improved academic performance and child-parent relationships.</p> <p>Only 5 studies incorporated RCT methodology.</p>
<p>Chesin et al. (2015)<sup>32</sup></p> <p>USA</p> <p>To describe pilot study findings testing the feasibility, acceptability, safety and preliminary effectiveness of an intervention that combines combining mindfulness, cognitive-behavioural therapy and suicide prevention planning as an adjunct to TAU.</p>	<p>18 participants enrolled in the intervention and 16 completed the treatment.</p> <p>Participants were mostly female (n=15), mean age 42, white (n=13), with a college degree (n=11) and had a major depressive episode (n=16). Within the six months prior, 4 had made a SA, 3 had planned suicide and 6 had ideation including a plan and 5 had less severe ideation. 13 were prescribed medication.</p> <p>Intervention: adjunct to TAU – changes to TAU also possible prior to research Combined suicide safety planning, meditation and cognitive behavioural therapy 9 2-hr treatment sessions all except first delivered in group setting Asked to complete 20 mins mindfulness meditation 3X per week between sessions.</p> <p>Measures incl. SI, depression, hopelessness, satisfaction, training,</p>	<p>16 out of 18 received some treatment 16 completed. Of these:</p> <ul style="list-style-type: none"> <li>• reported completing a significant amount of home practice, average of 30 mins per day for 5 days per week practicing mindfulness meditation and 9 mins per day 2 days per week reviewing their safety plan.</li> <li>• Mean training satisfaction rating was 3.4 out of 5</li> <li>• Significant reductions in SI</li> <li>• No significant reduction in depression, suicidal thoughts or hopelessness (but reported as approaching significance)</li> </ul> <p>Readiness and openness to this type of intervention reported as important factor in effectiveness</p>

Author, aims & objectives	Method	Findings
	<p>acceptability, feasibility &amp; effectiveness. Home Practice Logs: reviewing the safety plan and formal mindfulness meditation practiced. Measures collected at baseline up to 29 days (mean 14 days) prior to first treatment session and post treatment outcomes measured within two weeks of treatment ending.</p>	
<p>Chesin et al. (2016a)<sup>29</sup></p> <p>USA</p> <p>To test changes to cognitive functioning among high-suicide risk outpatients participating in an adjunct mindfulness-based intervention combining mindfulness-based cognitive therapy and safety plans.</p>	<p>10 participants, 8 of whom female All adult outpatients (mood &amp; personality disorder) with current SI and 6 month history of SA/plan and current severe depression.</p> <p>Recruitment restricted to individuals who took part in a later MBCT group due to burdensomeness of battery of tests.</p> <p>Intervention: 8 week MCBT and participants completed 2 hours of mindfulness-meditation each week and reviewed the safety plan twice weekly.</p> <p>Measures incl. depression, self-compassion, rumination, executive attention, sustained attention, memory, visual memory, mental disorders, history of suicidal behaviour</p>	<p>Significant reductions in rumination and cognitive reactivity to hopelessness or suicidality Improvements in executive attention and mindfulness</p> <p>Changes to SI were positively correlated with changes in depression.</p> <p>Changes to executive function were not a result of improved mood due to treatment</p> <p>MBCT-S targets deficits associated with suicidal behaviour among depressed patients.</p> <p>No changes to sustained attention, self-compassion or memory.</p> <p>Study may lack power to detect significant changes (eg self-compassion) due to sample size.</p>
<p>Chesin et al. (2018)<sup>30</sup></p> <p>USA</p> <p>To add to earlier studies (see above) by subjecting MBCT-S to qualitative inspection regarding feasibility and acceptability of MBCT-S.</p>	<p>15 outpatients with a 6-month history of suicidal behaviour, current depression and receiving MH treatment. Participants mostly female (n=12), single (n=10) and college graduates (n=9). The average age was 42 years. All participants completed the 9X 2hr sessions of the MBCT-S course which includes suicide safety planning.</p> <p>A brief online survey completed 1 week post intervention and a focus group lasting 2 hours.</p>	<p>9/15 said the treatment was interesting/engaging with the remaining saying it was acceptable. Some felt the group setting was initially uncomfortable.</p> <p>13/15 able to practice mindfulness meditation and use brief mindfulness techniques as coping skills.</p> <p>2/15 noted using safety plans</p> <p>3/15 reported difficulties with finding time/motivation</p> <p>11/15 improved emotion regulation 3/15 improved ability to recognise early suicide risk warning signs 3/15 linked group factors to engagement.</p> <p>2 said they experienced increased emotional distress and another 2 said they felt triggered when group discussion centred on suicidal behaviour or interpersonal loss.</p>
<p>Chesin et al. (2016)<sup>31</sup></p> <p>USA</p> <p>To describe the rationale for using mindfulness-based interventions to</p>	<p>Databases searched include PsycINFO, PubMed, Google Scholar. Limited to studies published until June 2015</p> <p>19 studies included for review</p>	<p>MBCT: main focus is changing cognitive processing as opposed to content via mindfulness meditation.</p> <p>MBCT is acceptable and adhered to by depressed patients who have SI. Preliminary evidence of effectiveness for MBCT</p>

Author, aims & objectives	Method	Findings
<p>prevent suicidal behaviour in high suicide-risk individuals</p>		<p>in reducing SI.</p> <p>Prevention of SA has not been tested and evidence relating to moderators of adherence to treatment is lacking.</p> <p>Some concerns about using MBCT with patients with psychosis, PTSD or bipolar disorder due to sometimes meditation-induced de-realisation, de-personalisation and other psychotic symptoms. But other studies report reduced negative symptoms for patients with psychotic disorders. Community-based studies are lacking.</p>
<p>Collins et al. (2016)<sup>36</sup></p> <p>Australia</p> <p>To test if, as predicted by the interpersonal theory of suicide, experimentally induced feelings of burdensomeness and thwarted belongingness decrease persistence and increase the desire to escape in the face of interpersonal adversity.</p>	<p>Experimental design</p> <p>Based on principles of interpersonal theory of suicide (burdensomeness and thwarted belongingness) and suicide is a means of escape</p> <p>Study 1</p> <ul style="list-style-type: none"> <li>• zest for life used as proxy measure of suicidality as this must be overcome to end one's own life</li> <li>• 92 university students participated and randomly assigned to experimental manipulation (see next point)</li> <li>• computerised multi-player team task created to induce high/low levels of perceived burdensomeness and thwarted belongingness</li> <li>• The 'Interpersonal Persistence Task': participants to judge whether two shapes are alike with points given for rapid and correct responses. Points contribute to team total. At the end of the task, participants shown their points, points lost/won by teammates and team target score. This was used to induce high/low burdensomeness. High/low thwarted belongingness induced by allowing participants opportunity to send a brief message to co-players (computer controlled) at 6 time points.</li> <li>• After each block (total 6) participants rate burdensomeness, belongingness and interest to do well</li> <li>• Battery of measures included zest for life scale (12-item), meaning in life questionnaire (10-item), interpersonal needs questionnaire (15-item), Kessler psychological distress scale (10-item), self-injurious thoughts and behaviours interview, intent</li> </ul>	<p>Study 1:</p> <ul style="list-style-type: none"> <li>• High perceived burdensomeness and thwarted belongingness resulted in desire to quit the Interpersonal Persistence Task</li> </ul> <p>Study2:</p> <ul style="list-style-type: none"> <li>• Burdensomeness increased across time while ratings of belongingness decreased over time and this was equivalent for high/low zest groups and regardless of mindfulness or not.</li> <li>• Desire to quit the task increased over time in the unfocused attention group but was stable for the mindfulness group.</li> <li>• While mindfulness had a protective influence across the task span, it was most pronounced in the latter part of the task.</li> </ul> <p>Mindfulness participants had a stable and low level to quit the task compared to unfocused attention participants whose persistence diminished over time.</p>



Author, aims & objectives	Method	Findings
	<p>likelihood and readiness for suicide (9-item) scale.</p> <p>Study 2:</p> <ul style="list-style-type: none"> <li>• Participants recruited based on zest for life scores and exposed to the Interpersonal Persistence Task</li> <li>• Randomly assigned to receive mindfulness induction or unfocused attention control induction and then complete the task</li> <li>• Mindfulness Induction: focused breathing audio using mindfulness techniques.</li> <li>• Unfocused attention control induction: time to let participants' thoughts flow as they would throughout the day</li> <li>• 52 undergraduate participants, 54% female</li> <li>• Zest for life scale measured</li> </ul>	
<p>Collins et al. (2017)<sup>37</sup></p> <p>Australia</p> <p>To examine the effect of a brief mindfulness intervention delivered mid-way through an experiment designed to induce perceived burdensomeness and thwarted belongingness and the effect of this on task persistence.</p>	<p>Experimental design expanding on research by Collins et al. 2016 (see above)</p> <ul style="list-style-type: none"> <li>• 92 undergraduate students, 72% female. 13 excluded based on suspicion probe</li> <li>• Randomly assigned to one of four conditions <ul style="list-style-type: none"> <li>○ Low perceived burdensomeness/thwarted belongingness</li> <li>○ High perceived burdensomeness/thwarted belongingness</li> <li>○ High perceived burdensomeness/thwarted belongingness with mindfulness</li> <li>○ High perceived burdensomeness/thwarted belongingness with unfocused attention intervention</li> </ul> </li> <li>• Completion of Interpersonal Persistence Task – all as described in previous study</li> <li>• The intervention (mindfulness vs unfocused attention) after block three (out of 6) of the task</li> <li>• Additional measures included <ul style="list-style-type: none"> <li>○ Freiburg mindfulness inventory (14-item measure of dispositional mindfulness)</li> <li>○ Interpersonal needs questionnaire (15-item measure of perceived burdensomeness and thwarted belongingness)</li> <li>○ Need to belong to the team</li> <li>○ Kessler psychological</li> </ul> </li> </ul>	<p>All three groups in high perceived burdensomeness/ thwarted belongingness conditions reported higher levels of burdensomeness compared to low group, confirming experimental manipulation</p> <p>All three groups in high perceived burdensomeness/ thwarted belongingness conditions reported lower levels of thwarted belongingness compared to low group, confirming experimental manipulation</p> <p>Thwarted belongingness diminished over time for all in the high perceived burdensomeness/thwarted belongingness groups compared to those in low perceived burdensomeness/thwarted belongingness were it remained stable over time</p> <p>Effect of time was significant in all high perceived burdensomeness/thwarted belongingness groups but non-significant for the low perceived burdensomeness/thwarted belongingness group</p> <p>Participants in all high perceived burdensomeness/thwarted belongingness groups rated desire to escape higher than the low perceived burdensomeness/thwarted belongingness group.</p> <p>Desire to escape increased over time except for the group receiving mindfulness where the desire to escape plateaued after the intervention was delivered. For other groups not receiving mindfulness, the desire to escape continued to escalate to the end of the task.</p> <p>Higher desire to escape the task was associated with higher intent and likelihood for suicide and higher psychological distress.</p>

Author, aims & objectives	Method	Findings
	<p>distress scale (10-item measure of psychological distress for non-clinical populations)</p> <ul style="list-style-type: none"> <li>○ Self-injurious thoughts and behaviours interview</li> </ul>	<p>Caveat that under extreme distress, mindfulness may not be as effective and therefore may be a better preventative tool rather than for crisis intervention.</p>
<p>Johnson et al. (2017)<sup>93</sup></p> <p>USA</p> <p>Investigate the effectiveness of a compassion mindfulness intervention versus a support group for low-income African American suicide attempters and self-criticism as a mechanism of treatment change associated with compassionate mindfulness</p>	<p>59 African Americans who had attempted suicide in the preceding year, 54% female. Randomly assigned to the Grady Compassion and meditation programme, a compassionate mindfulness intervention or a support group.</p> <p>Intervention lasted for six sessions delivered weekly. Participants also encouraged to practice daily mindfulness.</p> <p>Measures incl. self-criticism, depression, suicidality (incl levels of SI, suicidal intent, intent for self-injury and acute stressors).</p>	<p>Participants in the compassionate mindfulness intervention showed greater reduction in self-criticism by the end of the intervention compared to those who were in the support group condition.</p> <p>Reduction in self-criticism predicted a decrease in depressive symptoms.</p>
<p>Raj et al. (2019)<sup>155</sup></p> <p>India</p> <p>Examine the effects of mindfulness-based CBT on mindfulness skills and quality of life in adolescents with suicidal behaviour.</p>	<p>30 adolescents (mean age 14) diagnosed with depression and SI, 50% female.</p> <p>MCBT intervention was delivered for 12 1-hr sessions over 16 weeks.</p> <p>Measures incl SI, depression, life satisfaction, life orientation</p>	<ul style="list-style-type: none"> <li>• Scores on life satisfaction and life orientation significantly increased (improved)</li> <li>• Significant decreases in depressive symptoms and SI</li> <li>• Improvements held when the effects of gender were controlled.</li> </ul>
<p>Raj et al. (2020)<sup>154</sup></p> <p>International studies</p> <p>Review the evidence-based studies which have used mindfulness-based interventions on people at risk of suicidal behaviour to understand their immediate and long-term effects.</p>	<p>Systematic Review included RCT, observational and pre post-test studies which reported SI or attempts in participants from psychiatric, non-psychiatric disease and general population where suicide was recorded as a dependent variable.</p> <p>Databases searched included PubMed, Medline, Science Direct, PsycINFO for publications between 2010 and 2020.</p> <p>13 studies included: 6 RCTs, 5 observational, 2 pre post-test – all rated from fair to good quality</p>	<p>Mindfulness-based interventions are efficacious in reducing suicidal behaviour.</p> <p>Mindfulness-based interventions show good results in improving psychological attributes that may impact on suicidality including life orientation, over-general memory, rumination, meta-awareness, death anxiety and attention. Also shown efficacy on improving perceived burdensomeness, thwarted belongingness and autobiographical memories.</p> <p>Studies focusing on moderating effects are limited – pathways through which these variables influence suicidal behaviour are unaddressed.</p> <p>Difficult to separate whether interventions are impacting suicidality or whether it is an issue with outcome measurement.</p> <p>Large degree of variation between intervention design making it difficult to compare studies. EG duration varies from 10 minutes to 16 weeks.</p> <p>Implementation fidelity is a major issue, rarely considered</p> <p>Waitlist control groups in studies may overinflate efficacy of mindfulness-based interventions reported in studies.</p>

Author, aims & objectives	Method	Findings
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<p>Forkmann et al. (2016)<sup>70</sup></p> <p>Germany</p> <p>To examine the effects of mindfulness-based cognitive therapy and Cognitive Behavioural Analysis System for Psychotherapy on SI compared to TAU</p>	<p>Secondary analysis of RCT data (n=106): outpatient participants assigned to one of three treatment types.</p> <table border="1" data-bbox="432 304 839 524"> <thead> <tr> <th colspan="2">Mean age of participants</th> </tr> </thead> <tbody> <tr> <td>Mindfulness-based cognitive therapy</td> <td>48</td> </tr> <tr> <td>Cognitive Behavioural Analysis System for Psychotherapy</td> <td>50</td> </tr> <tr> <td>TAU</td> <td>54</td> </tr> </tbody> </table> <p>Randomly assigned to one of three groups:</p> <ul style="list-style-type: none"> <li>• TAU involved medication and consultations with a psychiatrist</li> <li>• Mindfulness-based cognitive therapy: individual pre-class interview and 8X 2½ hr group sessions with 6 individuals per class</li> <li>• Cognitive Behavioural Analysis System for Psychotherapy: 2 individual treatment sessions and 8 X 2½ hr group sessions.</li> </ul> <p>Measures incl. depression and SI</p>	Mean age of participants		Mindfulness-based cognitive therapy	48	Cognitive Behavioural Analysis System for Psychotherapy	50	TAU	54	<table border="1" data-bbox="906 181 1497 403"> <thead> <tr> <th rowspan="2">Measure:</th> <th colspan="3">% identified as suicidal</th> </tr> <tr> <th>TAU group</th> <th>Mindfulness-based cognitive therapy</th> <th>Cognitive Behavioural analysis system</th> </tr> </thead> <tbody> <tr> <td>HAMD</td> <td>62</td> <td>61</td> <td>66</td> </tr> <tr> <td>BDI</td> <td>76</td> <td>78</td> <td>47</td> </tr> </tbody> </table> <p>HAMD measure of depression:</p> <ul style="list-style-type: none"> <li>• baseline scores between groups were equivalent</li> <li>• suicidal symptoms reduced for mindfulness-based cognitive therapy and cognitive behavioural analysis system</li> <li>• TAU had no effect on suicidality but did impact depression</li> <li>• when changes in depression were controlled for, mindfulness-based cognitive therapy showed significant improvements but not for cognitive behavioural analysis system</li> </ul> <p>BDI</p> <ul style="list-style-type: none"> <li>• significant differences between treatment groups at baseline</li> <li>• suicidal symptoms reduced for mindfulness-based cognitive therapy group only</li> <li>• Suicidality among mindfulness-based cognitive therapy group decreased but this effect disappeared when changes in depression were controlled for.</li> </ul>	Measure:	% identified as suicidal			TAU group	Mindfulness-based cognitive therapy	Cognitive Behavioural analysis system	HAMD	62	61	66	BDI	76	78	47
Mean age of participants																									
Mindfulness-based cognitive therapy	48																								
Cognitive Behavioural Analysis System for Psychotherapy	50																								
TAU	54																								
Measure:	% identified as suicidal																								
	TAU group	Mindfulness-based cognitive therapy	Cognitive Behavioural analysis system																						
HAMD	62	61	66																						
BDI	76	78	47																						
<p>Forkmann et al. (2014)<sup>71</sup></p> <p>Germany</p> <p>To examine the effects of MBCT on SI in an RCT comparing patients with residual depressive symptoms after at least one episode of major depressive disorder who were randomly assigned to MBCT or a wait list.</p> <p>To examine whether an effect of MBCT on SI was dependent on reductions in depression severity, worry and rumination, or an increase in mindfulness.</p>	<p>Secondary data analysis of Mind Maastricht RCT study</p> <p>130 MH outpatient data recorded 2009</p> <p>Randomly assigned to:</p> <ul style="list-style-type: none"> <li>• Waiting list</li> <li>• MBCT – 8 weekly 2 ½ hr group sessions and participants received CDs with guided exercises and daily homework exercises for 30-60 mins per day.</li> </ul> <p>Measures incl. mindfulness, depressive symptoms, worry, rumination, and SI</p>	<p>MBCT significantly reduced SI partly explained by reductions in worrying. Supports claims that repetitive thinking (eg worry) may be a proximal factor for suicidal behaviour. But rumination significantly reduced but was not associated with changes in SI.</p> <p>Reduction in SI not mirrored in reduced depression.</p>																							
<p>Luoma &amp; Villate (2012)<sup>117</sup></p> <p>USA</p> <p>To present two case examples of the application of mindfulness</p>	<p>Two case studies presenting one male and one female who received ACT</p> <p>Female – 22 year old, white with multiple risk factors for suicide including self-injury, meeting the</p>	<ul style="list-style-type: none"> <li>• Female engaged in ACT while on waiting list for DBT. Sessions began by understanding thoughts and feelings and previous coping strategies. Mindfulness then introduced with in-session mindfulness exercises followed by out of session practice. Steady improvements recorded on several factors of the Five Factor</li> </ul>																							



Author, aims & objectives	Method	Findings
to suicidality	<p>criteria for multiple axis I and II disorders, history of abuse, comorbidity, socially isolated etc.</p> <p>Male – 47 white male. Recent hospitalisation for attempted suicide. Suffered bereavement of wife and daughter one year prior to therapy.</p>	<p>Mindfulness Questionnaire (incl. non-judge, non-react and observe). Eventually, began to see suicidal thoughts as thoughts and refocus her attention to current moment. Treatment lasted 38 sessions and 1 year post therapy; she no longer met criteria for any psychological disorder.</p> <ul style="list-style-type: none"> <li>Male entered ACT with some scepticism. Therapy began by validating his feelings of loss and despair. Initially mindfulness activities were very difficult to engage with. Initially agreed to brief at home mindfulness practices while showering, walking and eating. Psychological acceptance introduced. By 8<sup>th</sup> session, client was planning suicide. Support provided. Treatment lasted 6 months after which he returned to work and began to re-establish relationships and no longer viewed suicide as an option.</li> </ul>
<p>Lu et al. (2019)<sup>116</sup></p> <p>China</p> <p>To examine the effects of a mindfulness-based training in left-behind children from Nanjing.</p>	<p>RCT of 49 young people aged 12 years on average. 75% male randomly assigned to intervention (n=21) or control group (n=28)</p> <p>Intervention: 8-week 1 hr MBCT mindfulness training with 30-45 min exercises at home</p> <p>Measures incl. mindfulness attention, social anxiety, self-esteem &amp; SI</p>	<ul style="list-style-type: none"> <li>Negative correlations between mindfulness and social anxiety</li> <li>Negative correlation between self-esteem and SI</li> <li>Positive correlation between social anxiety and SI</li> <li>Significant improvements in mindfulness</li> <li>Significant reduction in social anxiety</li> <li>Reduction in SI but did not reach significance.</li> </ul>
<p>Stanley et al. (2021)<sup>175</sup></p> <p>USA</p> <p>To examine effectiveness of specific coping strategies individuals use to reduce SI</p>	<p>Intervention study using baseline and continuous assessment throughout the 7 day intervention trial. Assessment conducted via PDA with 6 epochs per day spaced randomly within 2 hour blocks over the 12 hr wake period. This assessed specific coping strategies (ie activity-based or mindfulness-based) to help them cope with daily living.</p> <p>50 participants randomly assigned to either psychotherapy or medication group for treatment of suicidal behaviour. Participants had a diagnosis of borderline personality disorder; current SI or behaviour within past year. Excluded if they had a psychotic disorder, bipolar disorder, intellectual disability, needed priority acute care, received a skill-based psychotherapy e.g. CBT or DBT and could not be treated on an outpatient basis</p> <p>Measures incl. SA, NSSI, SI, aggression, hopelessness, hostility, impulsivity, emotional regulation &amp; affective lability</p>	<p>5 participants reported <math>\geq 1</math> SA (mean=0.16; SD=0.62); 21 participants reported <math>\geq 1</math> NSSI episode (mean=1.94; SD=3.24); no inpatient hospitalisations needed</p> <p>Mindfulness-oriented strategies:</p> <ul style="list-style-type: none"> <li>60% of participants reported finding perspective</li> <li>53% of participants reported sitting with feelings until they pass</li> <li>49% of participants reported sitting with calming self</li> <li>Distracting activity based coping strategies (eg keeping busy, socialising etc) effectively reduce SI in everyday life.</li> <li>Mindfulness strategies (eg calming self, finding perspective, sitting with feelings until they pass) do not reduce SI.</li> </ul>
<p>Serpa et al. (2014)<sup>169</sup></p>	<p>A pre-post design of 105 veterans self-referred or clinician-referred to a</p>	<p>SI decreased by almost half over the course of MBSR from 24.05% at baseline to 12.66% at</p>

Author, aims & objectives	Method	Findings
<p>USA</p> <p>To evaluate the effect of a mindfulness-based stress reduction (MBSR) course on several health outcomes.</p>	<p>MBSR at a large, urban veteran medical centre.</p> <p>MBSR intervention involved 9X 2hr weekly sessions and daily home practice.</p> <p>Measures incl. mindfulness, pain, depression, anxiety, SI</p>	<p>post-test.</p>
<p>Schmelefske et al. (2020)<sup>165</sup></p> <p>International studies</p> <p>To undertake a systematic review and meta-analysis of mindfulness-based interventions on suicidal outcomes.</p>	<p>Systematic review and meta-analysis of PubMed, MEDLINE, PsycINFO and ProQuest Dissertations and Theses published up to 2019</p> <p>Multi-component studies excluded. Suicide-related thoughts and/or behaviours as outcome measures were included.</p> <p>Search resulted in 12 papers reporting 13 studies</p>	<p>Support for mindfulness-based interventions as effective treatment for SI but there were smaller effects when control groups were included in study designs</p> <p>Significant moderate effects of mindfulness-based interventions on all outcome measures among samples with histories of suicide and depression but this is based on a small number of studies</p> <p>Support on the efficacy for treatment of depression</p> <p>Studies with older participants, more female participants and more hours of treatment were most effective but with weak relationships</p>
<p>Barnhofer et al. (2015)<sup>13</sup></p> <p>UK</p> <p>To investigate whether mindfulness training is effective for weakening the link between depressive symptoms and suicidal cognitions</p>	<p>Secondary analysis from an RCT comparing mindfulness-based cognitive therapy (MBCT), cognitive psychoeducation and TAU</p> <p>194 participants randomly assigned to the three treatment groups MBCT (n=77); CPE (n=78), TAU (n=39). Participants were adults with a history of depression (at least 3 episodes) and in remission for 8 weeks or more. Other psychiatric disorders were excluded as was NSSI</p> <p>Measures incl. depression and SI</p>	<ul style="list-style-type: none"> <li>No significant group, time or interaction effects for depression. Significant main effect for group and group by time interaction due to significant reduction in suicidal cognitions in the MBCT group over time.</li> </ul> <p>Significant inverse correlation between more meditation practice and less suicidal cognitions reported.</p>

**Table 10: Academic literature for family therapy/support and social support**

Family therapy		
<p>Wijana et al. (2018)<sup>188</sup></p> <p>Sweden</p> <p>To investigate the outcome of Intensive Contextual Treatment (ICT) on self-harm behaviours and SAs.</p>	<p>49 adolescents aged 13–19 years of age with history of self-harm (within 3 months) and/or SI living with at least one primary caregiver. Referred from psychiatry or social services.</p> <p>ICT provided for average of 35 sessions but held for twice a week for 3 months in 4 phases:</p> <ol style="list-style-type: none"> <li>Treatment initiation: to survey risk and protective factors, create hope and establish alliance</li> <li>Therapeutic interventions lasting about 2 months. Therapist uses techniques to achieve</li> </ol>	<p>Adolescent outcomes</p> <ul style="list-style-type: none"> <li>No attempted suicide during treatment</li> <li>46% decrease in self-harm behaviour pre- to post-intervention, slight increase at 6 months but further decreases at 12 months</li> <li>Significant increases in adolescents recovering and proportion was greater for males</li> <li>Significant improvements in internalised symptoms, stress and emotional regulation</li> <li>No significant change to perceived criticism from mothers</li> </ul> <p>Parental outcomes:</p> <ul style="list-style-type: none"> <li>Significant changes pre to post treatment and</li> </ul>

Author, aims & objectives	Method	Findings
	<p>behavioural changes (eg chain analysis), behavioural activation, exposure, relationship skills and emotional regulation.</p> <p>3. Maintenance of acquired skills and relapse prevention.</p> <p>Measures incl. SH, social competence, emotional difficulties &amp; behavioural problems, perceived stress, emotional regulation, family interactions, anxiety &amp; depression, family satisfaction</p> <p>Measures collected at baseline 6- and 12-month follow-up</p>	<p>changes remained stable at follow-up on reported improvements of their adolescents' symptoms, reduced levels of stress, depression, and reduced critical remarks towards adolescents.</p> <ul style="list-style-type: none"> <li>Anxiety reduced for mothers but increased for fathers.</li> </ul>
<p>Wijana et al. (2021)<sup>189</sup></p> <p>Sweden</p> <p>To investigate the cost of integrated individual and family therapy and to compare adolescent healthcare consumption before and after treatment</p>	<p>25 participants aged 13–19 with repetitive SH behaviour within past 3 months</p> <p>Analysis compared people who responded to the treatment vs non-responders based on reliable change on outcome measures pre-post intervention.</p> <p>Intervention = ICT: 3-6 month intensive manualised outpatient treatment to address emotional regulation, functional communication within family, school attendance &amp; development of skills in case of a SH relapse. Conducted in family home with 1 family session and 1 individual session per week. Family sessions aim to lower expressed emotions.</p> <p>Measures incl. SH &amp; problem behaviours collected at baseline, 6- and 12-month follow-up</p>	<p>8/25 showed reliable change on the Deliberate SH Inventory</p> <p>18/25 showed reliable change on problem behaviours</p> <p>Average cost per participant was €5293</p> <p>Those who responded to treatment had reduced inpatient admissions, psychiatry or other hospital-based care</p> <p>However, those who responded to treatment had higher psychologist appointments after treatment and higher consumption of primary care treatment. Prescribed medication also increased.</p>
<p>Diamond et al. (2019)<sup>56</sup></p> <p>To evaluate the efficacy of ABFT compared with a family-enhanced nondirective supportive therapy for decreasing adolescents' SI and depressive symptoms.</p>	<p>RCT comparing ABFT and nondirective supportive therapy (NST)</p> <p>FE-NST: goal is to augment the adolescent's access to supportive adult relationships through the relationship with the therapist. Enhanced with a family element by adding a 5 session psychoeducation element.</p> <p>129 adolescent's aged 12-18 years randomly assigned to treatment condition (66 to ABFT and 63 to FE-NST). All participants had significant levels of SI and moderate depression. Imminent risk of harm was excluded. Participants were predominantly African American (49.7%) followed by White (28.7%). 42% had made at least 1 SA in their lifetime.</p> <p>69% were from single parent</p>	<p>No between groups difference for:</p> <ul style="list-style-type: none"> <li>no. sessions attended</li> <li>dropout rates</li> <li>rate of change for either SI or depression</li> <li>SI remission rates (both decreased. At 16 weeks, 33% for ABFT and 25% for FE-NST) and depression (both decreased. At 16 weeks, 40% for ABFT and 34% for FE-NST)</li> <li>Reliable change for SI (57% for ABFT and 49% for FE-NST) or depression (71% for ABFT and 57% for FE-NST)</li> <li>SA (low in both groups)</li> </ul> <p>Significant between groups difference for:</p> <ul style="list-style-type: none"> <li>Remission rates for depression at 12 weeks favouring ABFT</li> </ul>

Author, aims & objectives	Method	Findings
	<p>households and 31% from households living below the poverty line.</p> <p>Measures SI, depression, suicide severity risk, family functioning collected at baseline, 4, 8, 12 and 16 weeks post intervention.</p>	
<p>Diamond et al. (2010)<sup>57</sup></p> <p>To evaluate whether ABFT is more effective than Enhanced Usual Care (EUC)</p>	<p>RCT: 50 participants recruited in clinical settings. Included if experiencing high ideation and at least moderate depression. Excluded hospital inpatients, recently discharged, current psychosis or poor intellectual functioning.</p> <p>Comparing ABFT and EUC (private practice, community MH centres, individual therapy, group therapy, family therapy, no therapy)</p> <p>Measures incl SI, depression, no sessions attended with measures collected at baseline, 6 weeks, 12, and 24 weeks (12 weeks after treatment)</p>	<p>No significant difference between two treatment conditions for demographic or clinical variables. n=41 history of attempted suicide (30 making multiple attempts) n=20 family history of SAs</p> <p>ABFT – greater improvement rate during treatment but no difference in rates of change at follow-up: despite a slight increase of SI during follow-up, the large effect in favour of ABFT was maintained.</p> <p>Both groups improved on SSI (assessor-administered) but ABFT had slightly higher rate of improvement with medium/large effect.</p> <p>SI clinically improved more for ABFT at all time points for self-report measures: 6 weeks 70% vs 41%; 12 weeks 87% vs 52%; 24 weeks 70% vs 35%.</p> <p>Assessor-measures showed the same with favouring towards ABFT: 6 weeks 41% vs 33%; 12 weeks 69% vs 35%; 24 weeks 82% vs 46%.</p> <p>All findings for depression favoured ABFT but failed to reach statistical significance.</p> <p>ABFT attended a significantly higher number of sessions than EUC.</p>
<p>Shpigel et al (2012)<sup>170</sup></p> <p>USA</p> <p>To examine whether ABFT was associated with decreases in maternal psychological control and increases in maternal psychological autonomy granting, and whether such changes are associated with changes in adolescents' attachment schema and psychological symptoms.</p>	<p>RCT: Sub-group analysis of 18 participants receiving ABFT as part of a clinical trial. All participants had clinically high SI and moderate-severe depressive symptoms, aged 14-18 years, 81% African-American, with at least 1 caregiver.</p> <p>ABFT vs EUC</p> <p>Measures incl. SI, depressive symptoms, parental bonding with measures collected at baseline, 6 weeks, 12 weeks and 3 months post treatment.</p>	<p>Week 1 to week 4:</p> <ul style="list-style-type: none"> <li>Parenting psychological control significantly decreased</li> <li>Parental psychological autonomy granting significantly increased</li> </ul> <p>Pre- to post-treatment</p> <ul style="list-style-type: none"> <li>No change to adolescent anxiety, adolescent perceived parental bonding control scores, PBI-care</li> <li>Greater decreases found in adolescent depression for ABFT than EUC</li> <li>ABFT resulted in greater decreases in SI during treatment but these dissipated by follow-up</li> <li>Increased in maternal psychological autonomy was correlated with adolescent perceived maternal care by mid-treatment but not by the end of treatment.</li> <li>Decreases in perceived maternal control were correlated with decreases in depressive symptoms but not perceived maternal care and control, attachment anxiety, depressive symptoms or SI.</li> </ul>

Author, aims & objectives	Method	Findings
		<ul style="list-style-type: none"> <li>No correlation between psychological autonomy granting and perceived maternal control, adolescent anxiety or attachment, SI or depression at follow-up.</li> </ul>
<p>Diamond et al. (2012)<sup>55</sup></p> <p>To determine whether the impact of ABFT is moderated by a history of sexual abuse (HSA)</p>	<p>RCT: 66 adolescents screened in clinical settings (primary care and ED) with SI and depressive symptoms. Mean age 15, 74% African American, none of parents participating were the perpetrator of sexual abuse.</p> <p>Treatment: ABFT vs EUC 19 in ABFT group and 11 in EUC group reported HSA.</p> <p>Measures incl. SI, depression, family functioning &amp; psychiatric disorder with measures collected at baseline, mid-treatment (6 weeks), post-treatment (12 weeks) and follow-up (24 weeks).</p>	<p>Adolescents with HSA 2X more likely to report past SA and 3X more likely to report multiple attempts</p> <p>At post-treatment, ABFT more effective in reducing SI and depression compared to EUC regardless of HSA – effect was maintained by follow-up.</p> <p>SI decreased faster for ABFT compared to EUC among those with HSA by post-treatment but no difference by follow-up (EUC continued to improve while ABFT stabilised)</p> <p>Depression decreased faster for ABFT compared to EUC among those with HSA by mid-treatment but no difference by follow-up (EUC continued to improve while ABFT stabilised)</p> <p>Remission rates among adolescents with HSA were higher in ABFT than EUC</p> <p>ABFT had higher attendance rate compared to EUC – may have impacted on outcomes.</p> <p>HAS did not moderate the efficacy of ABFT in treatment of adolescents with SI and depression.</p>
<p>Scott et al. (2016)<sup>168</sup></p> <p>USA</p> <p>To illustrate the use of ABFT with an adolescent coping with severe SI</p>	<p>Case study of 14 year old female with depression, SI and anxiety. History of SAs and self-harm.</p>	<p>Case thought that parents would not understand her emotional pain due to them not having had the same life experiences as her (ie bullying)</p> <p>Case's depression narrative centred on bullying in school and her siblings leaving home to join the army.</p> <p>During treatment, SI returned but was better responded to by case's parents. At times during treatment, difficulties at school seemed to increase despite relationships at home becoming smoother.</p> <p>During therapy, the case was able to open up about her bullying experiences.</p> <p>At discharge, her depression, SI and anxiety significantly reduced. Her functioning improved, she regularly attended school and began working with an anti-bullying group at school.</p>
<p>Winley et al. (2016)<sup>191</sup></p> <p>USA</p> <p>To illustrate the use of ABFT to the treatment of a 14 year old female with SI complicated by a history of sexual trauma</p>	<p>Case study of 14 year old female with depression and suicidality triggered by sexual abuse.</p>	<p>Treatment allowed case to open up about sexual trauma.</p> <p>By treatment end, SI had dissipated but not depression.</p>
<p>Ewing et al. (2015)<sup>65</sup></p>	<p>Case study of 13 year old female with depression and SI. History of</p>	<p>Baseline – clinically significant SI and severe depression.</p>



Author, aims & objectives	Method	Findings
<p>USA</p> <p>To illustrate the use of ABFT to the treatment of a 13 year old female with SI complicated by a history of sexual trauma</p>	<p>self-harm and suicidal behaviour and sexual trauma.</p> <p>Measures on SI (SIQ_JR) and depression (BDI-II) collected for up to 1 year post treatment.</p>	<p>Week 4: elevated SI and moderately depressed.</p> <p>No SI or depression by week 24 and this was maintained at week 52.</p>
<p>Cottrell et al. (2018)<sup>41</sup></p> <p>UK</p> <p>To assess the effectiveness of family therapy compared with treatment as usual in reducing self-harm repetition in young people.</p>	<p>RCT – multicentre (40 centres) Participants referred to CAMHS aged 11–17 living with a primary caregiver. History of two self-harm incidents. Excluded if at serious risk of suicide, pregnant, in short term foster care, centre of ongoing child protection investigation, moderate-severe learning disabilities or involvement in another study within 6 months prior. Average age 14 years, 89% female, 89% self-harmed on at least 3 occasions.</p> <p>Intervention: the Self-Harm Intervention: Family Therapy (SHIFT) Trial. Sessions lasted 1.25 hrs, delivered over 6 months with monthly sessions but more frequently at the beginning. Total number of sessions 6-8 which are manualised and supervised N=415</p> <p>TAU offered by local CAMHS teams and included supportive therapy or counselling, CBT, Family work, formal systemic family therapy). N=417</p> <p>Primary outcome: SH repetition for 18 months post intervention Secondary outcomes: SH within 12 months, cost per SH event avoided, SI, QoL, depression, MH and emotional and behavioural difficulties, hopelessness, family functioning</p>	<p>High degree of attrition at follow up</p> <p>18 month post treatment:</p> <ul style="list-style-type: none"> <li>• 28% of SHIFT participants had self-harmed</li> <li>• 25% TAU self-harmed</li> <li>• No significant difference</li> </ul> <p>No significant difference at 12 months in self-harm repetition, QoL, hopelessness, family functioning, caregiver MH, or expressed emotion.</p> <p>Family therapy resulted in significantly reduced SI – but attrition means results should be treated with caution. Also, this was at 12 months follow-up but dissipated by 18 months.</p> <p>Family therapy was not cost-effective due to only marginal differences in QALY gains.</p>
<p>Cottrell et al., (2020)<sup>42</sup></p> <p>UK</p>	<p>RCT – extended follow-up to Cottrell et al., 2018 (reported above).</p> <p>SHIFT trial – participants aged 11–17 years with history of self-harm. N=804 comparing family therapy and TAU (described above).</p> <p>Primary outcome – SH repetition leading to hospital attendance within 36 months post randomisation.</p>	<p>Family therapy is not significantly more effective in reducing subsequent hospitalisation for self-harm over 18 months or 26 months. Any intervention may help to decrease subsequent mortality (low in both treatment arms in the extended follow-up).</p> <p>916 self-harm related hospital attendances were recorded in the follow-up period (40.0% full sample; 40.5% FT; 39.8% TAU).</p> <p>No evidence of significant treatment effect on self-harm repetition rates over the extended follow-up period.</p> <p>Younger females significantly more likely to repeat self-harm. So, decreases in self-harm repetition likely age-related rather than treatment as no significant differences between treatment arms by 36 months post-randomisation.</p>

Author, aims & objectives	Method	Findings
<p>Miklowitz et al. (2020)<sup>126</sup></p> <p>USA</p> <p>To examine whether improvements in youths' perceptions of family conflict mediated the relationship between treatment condition (family-focused therapy, FFT or EC), and reductions in SI among high risk youth over 1-4 years.</p>	<p>RCT: 127 outpatients aged 9-17 years with bipolar disorder or major depressive disorder.</p> <p>FFT – psychoeducation, communication skills training, problem solving skills training for patients and family members. 12 X 60min sessions (8 weekly and 4 biweekly) for 4 months. N=111</p> <p>EC – 3 weekly 60 min family psychoeducation followed by 3 monthly individual psychoeducation sessions focused on implementing a mood management plan. N=96</p> <p>Measures incl. SI and conflict</p>	<p>Participants who had high SI at baseline had a less favourable trajectory at follow-up for the EC condition compared to the treatment condition.</p> <p>FFT was associated with longer well intervals for new mood disorders compared to EC. Also FFT showed greater reductions in SI over 1-4 years compared to EC and this seemed to be mediated by changes in youth's perceived family conflict.</p>
<p>Waraan et al. (2021)<sup>184</sup></p> <p>Norway</p> <p>To study the effectiveness of ABFT compared with TAU in reducing SI in clinically depressed adolescents.</p>	<p>Secondary analysis of RCT data – conducted in community MH settings with clinical cohort.</p> <p>Treatment: 16 week ABFT n=30</p> <p>TAU: n=30</p> <p>Inclusion: diagnosed MDD aged 13–18.</p> <p>Exclusion: diagnosis of any psychotic, eating, bipolar, intellectual disability or pervasive developmental disorder.</p> <p>SI as outcome measure</p>	<p>At baseline, both treatment and control groups had average of SI well above clinical cut off.</p> <p>Time was the only factor to have a significant effect on SI.</p> <p>Treatment allocation not significantly associated with change in SI.</p> <p>Both groups showed similar reductions in SI by week 12 but an increase in SI by week 16.</p>
<p>Aggarwal &amp; Patton (2018)<sup>4</sup></p> <p>Australia</p> <p>To describe the effectiveness of interventions for adolescent self-harm with a family component including treatment-related moderators of effect</p>	<p>Review involving searches of electronic databases (MEDLINE, PsycINFO &amp; Scopus) up to 2017</p> <p>12 papers identified: 10 RCTs and 2 pilots of clinical trials (non-randomised)</p>	<p>Types of interventions</p> <ul style="list-style-type: none"> <li>• Brief single session interventions based on CBT → No evidence of effectiveness on depression, hopelessness, family cohesion, self-harm or suicidal thoughts/behaviour. But these brief sessions can promote engagement with services.</li> <li>• Intermediate-level interventions – 12 weeks or less → significant impact on suicidal thoughts/behaviour and self-harm. No impact on hopelessness or family cohesion. Follow-up lacking beyond 6 months and weaker effects at follow-up.</li> <li>• Intensive interventions – sessions going beyond 12 weeks → includes multisystem family therapy (MST), DBT and metallisation-based therapy (MBT). Showed promising results but are resource intensive and difficult to assess benefits over intermediate-level interventions.</li> </ul> <p>The longer duration of treatment is associated with larger increases in treatment effect in adults.</p> <p>Studies lack methodological quality.</p>
<p>Anastasia et al. (2014)<sup>7</sup></p> <p>USA</p>	<p>Family Centred Brief Intensive Treatment (FC BIT): based on systemic family therapy, this is an</p>	<p>Groups did not differ on clinical measures at baseline.</p>

Author, aims & objectives	Method	Findings
<p>To compare the effects of Family Centred Brief Intensive Treatment against TAU in individuals with acute SI.</p>	<p>outpatient treatment for client and their family as an alternative to hospitalisation due to SI. Treatment is 3–15 sessions per week delivered in agency- or community-based settings. Family component provides family with skills in connectivity, communication, problem solving as well as support within the system. N=19</p> <p>Comparison – intensive outpatient therapy (IOP). Same counsellor provided all IOP sessions.</p> <p>No standardised treatment sessions for FC BIT or IOP.</p> <p>Treatment/comparison continued until SI was low/absent</p> <p>Measures incl. depression, anxiety, hopelessness, suicide risk, daily functioning</p>	<p>FC BIT ended 4 weeks earlier than IOP</p> <p>Both groups reduced for depressive symptoms, hopelessness, anxiety and suicidality but FC BIT resulted in greater reductions.</p>
<p>Wharff et al. (2012)<sup>186</sup></p> <p>USA</p> <p>To explore the safety and feasibility of family-based crisis intervention (FBCI) in a population of adolescents presenting with suicidal complaints and to explore disposition outcomes between the pilot sample and comparison sample obtained retrospectively during the identical calendar period immediately preceding the FBCI study period.</p>	<p>100 suicidal adolescents (76% female; 65% white; mean age 15.6) and their families presenting to ED (assigned to FBCI group based on assessment of acuity of suicidality and capacity for galvanizing supports). If not offered FBCI, adolescents were hospitalised (n=44). Compared to TAU by using retrospective sample</p> <p>Measures incl. depression, hopelessness, family functioning. Measures collected for follow-up at 1 day, 1 week, 1 month and 3 months post intervention.</p>	<p>At baseline, no significant differences between treatment and TAU groups for clinical and demographic measures.</p> <p>Those hospitalised rather than offered FBCI had higher CDI and HSC scores</p> <p>FBCI significantly less likely to be admitted compared to retrospective TAU (36% vs 55%)</p>
<p>Wharff et al. (2019)<sup>187</sup></p> <p>USA</p> <p>To evaluate the efficacy of a family-based crisis intervention (FBCI) in the Emergency Department for suicidal adolescents and their families</p>	<p>RCT of FBCI (n=71) compared to treatment as usual (n=68)</p> <p><i>FBCI (delivered by psychiatric social workers)</i></p> <ul style="list-style-type: none"> <li>• Standard psychiatric evaluation</li> <li>• 60- to 90-minute session</li> <li>• Develop a crisis narrative</li> <li>• Therapeutic readiness assessment</li> <li>• Psycho-education about depression</li> <li>• Safety planning</li> <li>• Theoretical underpinnings based on cognitive-behavioural narrative and family systems therapies.</li> </ul> <p><i>Treatment as usual</i></p>	<p>At 1-month follow-up no between-group differences in reasons for living, although increases for both groups over the course of the intervention.</p> <p>FBCI significantly higher family empowerment scores and satisfaction than the treatment as usual group.</p> <p>FBCI were significantly less likely to be hospitalised than the treatment as usual group.</p> <p>12 participants required later crisis evaluation (treatment as usual n=3; FBCI n=9). 5 FBCI requiring hospitalisation during 1-month follow-up period; 2 after initial evaluation and 3 were later hospitalised when sent home about initial evaluation.</p>



Author, aims & objectives	Method	Findings
	<p>Standard psychiatric evaluation and recommendation for either clinical support or discharge</p> <p><i>Participants</i> All adolescents presenting with suicidality (prior 72 hours: self-reported feeling suicidal, SA or other person noted behaviours directly associated with suicidality) to paediatric Emergency Department between January 2012 and May 2014. Exclusions include: lack of English language fluency, not medically stable, active psychosis or requiring restraint (physical or pharmacological)</p> <p><i>Outcomes incl.</i> Adaptive qualities and protective factors, family empowerment, satisfaction of service, demographics, recidivism</p>	
<p>Esposito-Smythers et al. (2019)<sup>63</sup></p> <p>USA</p> <p>To test whether F-CBT would be more efficacious than E-TAU on SAs, depression, SI or non-suicidal self-injury for psychiatrically hospitalised depressed suicidal adolescents who also had a substance use disorder.</p>	<p>RCT: 147 inpatient adolescents aged 12–18 yrs. (excluded if cognitive/developmental delays, autism or psychotic disorder, OCD, eating disorder, or used hard drugs).</p> <p>Family-Focused cognitive behavioural therapy (F-CBT; n=73): manualised and modular programme. Two therapists assigned – one for adolescent and one for family. Initial sessions are joint and families receive psychoeducation and safety planning. Four core skills include problem solving, cognitive restructuring, behavioural activation and affect regulation. Families also receive supplemental skills including enhancing social support and chain analysis. Sessions are 0-6 months adolescents weekly and family biweekly. 6-9 months adolescents biweekly, family monthly and 9-12 months all attend monthly.</p> <p>E-TAU: parents offered support by way of a contact number to support help-seeking. N=74</p> <p>Measures incl. SI, psychiatric disorder, depression and MH problems</p>	<p>No evidence of rate difference in SAs post intervention. Rates in the total sample decreased from 20% at 6 months, 9% at 12 months and 7% at 18 months.</p> <p>No evidence of treatment effect on lethality of SAs post intervention.</p> <p>No significant differences between intervention and TAU on MDD, severity of SI, or NSSI incidence.</p> <p>Possible that parent sessions were too focused on self-care or the greater acuity of the sample due to recruitment method (ie inpatients). Or, enhancement of TAU may have led to greater stabilization.</p>
<p>Romney et al. (2020)<sup>160</sup></p> <p>USA</p> <p>To explore the integration of structural family therapy and the Satir growth model to increase</p>	<p>Case study of 15 year old transgender male living with mother, stepdad and sister. Case has had recurring suicidal thoughts and has been admitted to hospital for suicidal behaviour and met criteria for MDD and gender dysphoria.</p>	<p>Treatment goal was achieved which was to eliminate suicidal thoughts through gaining support and connection with his family.</p> <p>SI occurred throughout therapy. Initially there was no active plan. SI increased when experiencing relationship break-up. Before session 14, case attempted suicide and was hospitalised following</p>

Author, aims & objectives	Method	Findings
<p>connection and support within the family while also creating boundaries that are protective and growth enhancing.</p>	<p>Family therapy interventions involved 24 sessions of structural family therapy (focuses on restructuring the family system and emphasises creating a system that maintains the power and hierarchy that promotes healthy family interactions) and Satir experiential therapy (based on notion that coping is related to level of self-worth).</p> <p>Sessions were mixed between case with family and individual sessions. Family sessions included psychoeducation.</p> <p>Measures incl. suicidality, psychological distress, psychiatric symptoms, family functioning.</p>	<p>conflict with friends. SI beginning to decrease by session 21.</p> <p>Case viewed parenting style with suspicion and felt a lack of support within the family. By week 6, case said he wanted family to be his primary support which deviated from earlier sessions where he said his friends were his primary support.</p> <p>Increases in self-worth for all family members were correlated with increased connection and support within the family.</p> <p>Decreases in depressive and suicidal symptoms were correlated with family connection.</p> <p>By treatment end, case had gone for 2 months without suicidal thoughts but there was no follow-up beyond the end of treatment.</p> <p>Concluded that through boundary-making, re-establishing parental hierarchy and utilising Satir interventions to promote self-worth, a transgender youth's family becomes the connection and support the young person desires and needs to reduce suicidality.</p>
<p>Omer &amp; Dolberger, (2015)<sup>136</sup></p> <p>Israel</p> <p>To describe a parent-based therapy in nonviolent resistance to suicidal behaviour</p>	<p>Case study of 21 year old male experiencing SI</p> <p>Parent therapy is parent-focused rather than case focused. Lasting 13 sessions and involving a 2-phased approach:</p> <ol style="list-style-type: none"> <li>1. Containment phase: parent learns to cope with crisis. Phase is launched by an 'announcement' communicating parental presence in case's life and resisting rejection. Also stipulates that they will resist suicide. If case runs away, parents will launch a search action, involving case's friends/parents. Supporters meeting also called to increase awareness of behaviour and obtain support. Suicide watch will manifest presence and reduce isolation, if needed and can involve 'supporters'</li> <li>2. Anchoring phase: parents learn to widen and consolidate steps activated in first stage, anchoring themselves in parenting role and support system in ways that increase family stability.</li> </ol>	<p>Parents of case attend therapy where the case threatens suicide following relationship breakdown.</p> <p>Announcement occurred following 2<sup>nd</sup> session. Supporter's meeting scheduled for 1 week later. Case's grandfather and friend were among supporters – friend offered help with financial planning due to debt problem. Grandfather offered support and respite.</p> <p>Other supporters also provided emotional support.</p> <p>By final session, case had a new crisis with manic symptoms and was taking illegal drugs, resulting in hospitalisation.</p> <p>Concluded that problems not fully dealt with but 'conditions for dealing with them are better than they had been in the past' p570</p>
<p>Schade (2013)<sup>164</sup></p> <p>USA</p> <p>To provide case illustration of emotionally</p>	<p>Case study of 14 year old girl engaging in NSSI, living with father, step-mother, brother, step brother and step sister.</p> <p>EFFT used sessions to acknowledge</p>	<p>Case engaged in cutting behaviour when feeling overwhelmed or unsupported by her family.</p> <p>By session end, case wanted to cut but had not done so for the remaining 8 sessions.</p>

Author, aims & objectives	Method	Findings
focused family therapy (EFFT)	feelings and attachment needs and promoting acceptance within other family members. Treatment lasting 12 sessions.	
<p>Frey &amp; Hunt (2017)<sup>73</sup></p> <p>USA</p> <p>To review the scientific evidence on the effects of family-based interventions for SI and behaviour.</p>	<p>Literature review: extensive search on PsycINFO and Ovid Medline</p> <p>16 articles identified covering 13 family-based interventions</p>	<p>Majority of papers focused on RCTs and all were based on quantitative research.</p> <p>All of the intervention studies conducted with youth populations and predominantly carried out with female samples.</p> <p>3 treatment settings were identified: outpatient after hospitalisation; inpatient and outpatient instead of hospitalisation.</p> <p>No study addressed why they chose to intervene at a specific time point.</p> <p>Most studies only described outcome measures used, but did not report on outcome measures. Outcome measures predominantly related to the young person's suicidal behaviour, only 9 included family level measures. Of those that included family level measures, there was no common construct used.</p> <p>Findings were mixed in terms of efficacy.</p> <p>moderators to treatment:</p> <ul style="list-style-type: none"> <li>• History of sexual abuse does not decrease effectiveness of ABFT in reducing adolescent suicidality</li> <li>• Change in family functioning mediated the change in adolescent suicidality</li> <li>• Parental behaviour and attachment decreases adolescent suicidality</li> </ul>
<p>Rosenbaum Asarnow et al. (2015)<sup>162</sup></p> <p>USA</p> <p>To describe the feasibility, safety and outcome results from a treatment development trial of the SAFETY programme</p>	<p>35 adolescents aged 11–18 (m=15) with SA in last 3 months but excluded if no contact info provided, psychosis or substance misuse or non-English speaking.</p> <p>SAFETY programme: 12-week cognitive behavioural family therapy. Seeks to promote safe settings, identifying safe people, activities and actions, safe thinking and safe stress reactions.</p> <p>Measures incl. suicidal behaviour, hopelessness, depression, social adjustment, treatment satisfaction and behaviour problems with measures collected at baseline, 3-month and 6-month follow-up.</p>	<ul style="list-style-type: none"> <li>• 3 individuals showing suicidal behaviour during study period</li> <li>• At 3-month follow-up, significant decreases on all suicidality indicators</li> <li>• Significant improvements for youth hopelessness, youth and parent depressive symptoms and social adjustment measures.</li> </ul>
<p>Pfeiffer et al. (2019)<sup>139</sup></p> <p>USA</p> <p>To demonstrate the feasibility and acceptability of a peer specialist intervention</p>	<p>RCT of 70 adult psychiatric inpatient participants with history and high risk of SA and/or SI, assigned to peer mentorship (n=34) or TAU (n=36).</p> <p>Intervention: PREVAIL involved 'peer specialists' to be trained in a range of skills/tools (incl. safety plans,</p>	<p>88% (30/34) of intervention participants met with the peer mentor.</p> <p>Completion of assessments at 3 and 6 months was high (76-79%).</p> <p>The mean number of sessions attended was 6 typically lasting for 54 mins with low-level</p>

Author, aims & objectives	Method	Findings
<p>titled Peers for Valued Living (PREVAIL)</p>	<p>developing hope kits, WRAP, CBT, goal-setting, mindfulness and relaxation techniques) to address suicidal risk and increase hope and connectedness. This is achieved via supportive listening, sharing one's own recovery story and tailor these to someone who is high risk for suicide. Intervention delivered over 12 weeks for a total of 12 meetings (more frequently held initially)</p> <p>Primary outcome measures incl. acceptability &amp; feasibility. Secondary measures incl. fidelity, SA, SI, hopelessness, hope, belongingness. Measures collected at baseline, 3-months and 6-months.</p>	<p>engagement in approximately half of the sample.</p> <p>Feasibility and acceptability were demonstrated.</p> <p>Though the study was not powered or designed to assess the SA over the course of the intervention, 15% attempted suicide at 3 months rising to 18% at 6 months.</p> <p>On the whole experiences of the intervention were good, though a small minority not satisfied with the intervention, its content or peer relationship. One individual felt worse because they perceived the peer mentor's experience to be worse than theirs.</p>
<p>Auzoult &amp; Abdellaoui (2013)<sup>10</sup></p> <p>France</p> <p>To examine perceived suicide risk among inmates and explore possible explanations.</p>	<p>Focuses on operation of a French peer support programme for suicide prevention (Fellow Prisoners Support, CDS)</p> <p>CDS involves team of trained inmates who are tasked with identifying and providing support to those at risk of suicide – implemented for 1 year.</p> <p>54 inmates and 17 healthcare professionals in 4 prisons</p>	<ul style="list-style-type: none"> <li>• Inmates were more likely than professionals to believe support should come from other inmates or people outside prison. This was more likely for those in prisons where CDS was implemented.</li> <li>• In prisons where CDS was implemented, inmates were more likely than healthcare professionals to believe that inmates can help reduce prison suicide &amp; perceived inmates were likely to identify inmates at suicidal risk</li> <li>• Suicide risk was underestimated in prisons where CDS was implemented</li> </ul>
<p>Daigle &amp; Labelle (2012)<sup>48</sup></p> <p>Canada</p> <p>To build and validate theoretical models for the Group Therapy Programme for Children Bereaved by Suicide (PCBS); To test these models in a preliminary evaluation</p>	<p>PCBS is a group therapy for children aged 6–12 years. Intervention involves 12 2hr sessions for groups of 6–9 children. Parents must attend the last ½ hr of each session. Intervention aims to help children and parent cope and to transmit hope.</p> <p>3 girls and 5 boys took part mean age 10.5 years.</p> <p>Outcome measures: intervention intensity checklist; intervention narrative checklist; bar-on emotional quotient inventory; Beck Youth Inventories of Emotional and Social Impairment; Grief Scale; Children's Hope Scale.</p>	<ul style="list-style-type: none"> <li>• No statistical analyses conducted due to small sample size.</li> <li>• Improvements noted for all outcome measures except for anger scores on the Beck Youth Inventories.</li> </ul>
<p>Garcia-Williams &amp; McGee (2016)<sup>75</sup></p> <p>USA</p> <p>To describe the self-reported responses of college students have engaged in when a friend or family member disclosed being suicidal</p>	<p>126 undergrad students who completed an online survey and said a friend/family member had expressed suicidal thoughts to them (sub-sample of 461 completed survey responses)</p>	<p>Responses to someone who said they had suicidal thoughts/behaviours:</p> <ul style="list-style-type: none"> <li>• Provide social support: giving reasons for living, destigmatising, and reassuring they were there for support. Included companionship, physical presence and monitoring or spending more time with the person in crisis.</li> <li>• Provide information: encouraging help-seeking from professional and non-professional sources eg accessing counselling or encouraging honesty with clinicians. Some highlighted their personal</li> </ul>

Author, aims & objectives	Method	Findings
		<p>limitations, fear of giving the wrong information or dismay experienced when help accessed did not alleviate suicidal thoughts/behaviour</p> <ul style="list-style-type: none"> <li>• Tell someone else: including a resident advisor, school counsellor, teacher, parents, peers' family, and roommate/friends.</li> <li>• Crisis support: acute responses to perceived serious/dangerous behaviour including calming the person, promise-making, talking them out of it, using force (eg restraining)</li> </ul>
<p>Schotanus-Dijkstra et al. (2014)<sup>166</sup></p> <p>Netherlands</p> <p>To determine what is communicated by participants in online support groups for bereaved by suicide</p>	<p>Content analysis of 1250 messages posted on two online forums by 165 individuals (70% females; mean 32 years)</p>	<ul style="list-style-type: none"> <li>• 77% of messages contained personal experiences – incl information about the deceased, method of death, their feelings etc</li> <li>• 40% messages expressed condolences</li> <li>• 9% messages related to gratitude – for others response, advice or support.</li> <li>• 7% wanted advice or information about others' experiences</li> <li>• 45% involved grief reactions – missing the deceased, feelings of sadness, pain, etc and experiences such as crying, sleeping badly and nightmares, tiredness.</li> <li>• 4% of messages were stating the person had sought other support (GP etc)</li> <li>• 7% positive experiences about healthcare and 5% negative experiences</li> </ul>
<p>Hom et al. (2018)<sup>85</sup></p> <p>USA</p> <p>To evaluate changes in suicidal symptoms and resilience appraisals following attempt survivors' participation in the Survivors of SAs (SOSA) support group.</p>	<p>SOSA: 8-week support group intervention for SA survivors. Included safety planning, identification of triggers and drivers, routine suicide risk assessment. Sessions facilitated by clinician and peer co-facilitator with lived experience</p> <p>92 SA survivors; 65% female; aged 18–69 M=42 years; 65% white. Mean number of lifetime SAs 3.07.</p> <p>Measures incl. SI; hopelessness; resilience, suicidal desire and suicidal intent</p>	<ul style="list-style-type: none"> <li>• At baseline, SI severity was significantly associated with hopelessness, suicidal desire and intent.</li> <li>• Intervention results in decreased SI, hopelessness, suicidal desire and suicidal intent.</li> <li>• 25.9% had clinically significant reductions for SI severity</li> <li>• 30.8% clinically significant reductions in hopelessness.</li> <li>• 20.3% clinically significant increases in resilience</li> <li>• Significant decreases in suicidal symptoms held after controlling for number of suicides and</li> <li>• Significant improvements in ideation held after controlling for number of sessions attended.</li> </ul>

## Glossary of terms

ABFT	Attachment-based family therapy
CBT	Cognitive Behavioural Therapy
CCIS	Community Crisis Interventions Service
CDS	Crisis de-escalation service
CORE	Clinical Outcomes in Routine Evaluation
CRP	Crisis response plan
DBT	Dialectical Behavioural Therapy
ED	Emergency Department
EFFT	Emotionally focused family therapy
EUC	Enhanced usual care
F2F	Face to face
FBCI	Family-based crisis intervention
FBCI	Family-based crisis intervention
FBI	Family based intervention
FC BIT	Family centred brief intensive treatment
F-CBT	Family-cognitive behavioural therapy
FE-NST	Family-enhanced non-directive support
FFT	Family focused therapy
FISP	Family Intervention Suicide Prevention programme
ICT	Intensive Contextual therapy
MBCT	Mindfulness-based cognitive therapy
MBI	Mindfulness-based interventions
MBSR	Mindfulness-based stress reduction
MH	Mental health
NI	Northern Ireland
NICE	The National Institute for Health and Care Excellence
PA	Physical activity
PHA	Public Health Agency
PICs	Public Information Campaigns
PL2	Protect Life 2 Suicide Prevention Strategy for Northern Ireland
PREVAIL	Peers for valued living
PST	Problem Solving Therapy
PTSD	Post-traumatic stress disorder
RCT	Randomised controlled trial
SA	Suicide attempt(s)
SDPO	Suicide Prevention Development Officers
SH	Self-harm
SHIFT	Self-harm intervention: family therapy trial
SI	Suicide ideation
SOSA	Survivors of suicide attempt
SP	Suicide prevention
TAU	Treatment as usual

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