

Bilello D, Townsend E, Broome M R, Gregory A & Burnett Heyes S (preprint). A systematic review and narrative synthesis exploring the relationship between friendships and peer relationships, and self-harm ideation and behaviour among young people. Draft date: 29<sup>th</sup> May 2024.

## **A systematic review and narrative synthesis exploring the relationship between friendships and peer relationships, and self-harm ideation and behaviour among young people**

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## Summary

Friendships and peer relationships have an important role in the experience of self-harm ideation and behaviour in young people, yet they typically remain overlooked. The present systematic review and narrative synthesis explore the extant literature on this topic to identify important relationships between these constructs. A keyword search of peer-reviewed empirical articles relating to friendships and peer relationships and self-harm ideation and behaviour in young people (11-25 years old) was conducted across 11 databases (MEDLINE, Embase, PsycINFO, Web of Science, SCOPUS, PubMed, Cochrane Library, CINAHL, Sociology Database, IBSS and Sociological Abstracts) from database inception to April 2024. 90 articles were identified presenting evidence primarily from high-school adolescents (11-18 years old), mixed-gender (with a slight overrepresentation of females), White samples. Findings highlight significant, substantive relationships between the key constructs: (a) *Studies of young people with self-harm ideation and behaviour* show evidence that 1) characteristics of friends and peers, including their self-harm ideation and behaviour, relate to and predict ego self-harm ideation and behaviour; 2) friends and peers are important sources of support; 3) evidence on causal mechanisms is limited, but highlights potential peer selection and influence processes; b) *Studies of friends and peers of young people with self-harm ideation and behaviour*, highlight that 1) friends' attitudes to self-harm and suicide influence their responses to peers' self-harm ideation and behaviour; and 2) bereaved friends and friend supporters experience negative outcomes. Despite significant heterogeneity across samples, study designs and definition/measurement of the primary constructs, the current review represents an initial step in organising a complex literature on a critically important topic. These findings have important implications for the development of future research and evidence-based interventions.

## Introduction

Self-harm, defined as the intentional act of harming oneself regardless of underlying intent<sup>1</sup>, is associated with a series of health, social and psychological negative outcomes as well as being the strongest predictor of suicide<sup>2</sup>. These are considered a major public health concern, especially among young people (11-25 years old). In this group, rates of self-harm range from 10-20% worldwide, while suicide is more numerically rare (3-10%)<sup>3</sup>. Both have been steadily rising in recent years<sup>3,4,5</sup>. During adolescence and young adulthood, the social environment and particularly peer relationships become increasingly important and are known to influence and be influenced by health-related behaviours<sup>6,7,8</sup>. Evidence suggests that friendships and peer relationships, and self-harm ideation and behaviour are mutually influential<sup>9</sup>. However, the nature, direction and strength of their association remain unclear, highlighting the need to synthesise available evidence.

Definitions of self-harm, suicidal ideation and behaviour generally differ across countries. While in the US a clear distinction is made between non-suicidal self-injury (NSSI), suicidal ideation (SI), suicidal attempt (SA) and suicidal behaviour (SB)<sup>10</sup>, in the UK self-harm refers to behaviours intended to harm oneself with and without suicidal intent<sup>11</sup>. In the present systematic review, the term self-harm ideation and behaviour (SHIB) will be used to encompass self-harm (and NSSI), suicidal ideation and suicidal behaviour (and SA).

Friendships are described as peer relationships characterised by mutual influence, closeness and disclosure<sup>12,13</sup>. However, their definition and measurement can vary based on the discipline of study. Importantly, friendships exert a strong influence on young people's development, well-being and behaviour, including self-harm ideation and behaviour<sup>6,14</sup>. Evidence of their role is nascent and inconclusive<sup>15</sup>. Friendships and peer relationships are important sources of support and may protect against self-harm ideation and behaviour<sup>16,17</sup>. Nevertheless, specific characteristics of friends and peers have also been associated with increased risk of self-harm ideation and behaviour among young people<sup>18</sup>, with high rates of clustering within friendships in clinical and community settings<sup>19</sup>.

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Equally, evidence suggests that young people can be negatively impacted by their exposure to friend and peer self-harm ideation and behaviour<sup>20</sup>, emphasising their rippling effects.

The developmental relevance of friendships and peer relationships for young people's self-harm ideation and behaviour calls for attention to this topic. Furthermore, despite intuitive understandings of friendships, these may be experienced differently within the context of self-harm and suicide<sup>20</sup>.

Exploring the interdependent nature of these constructs will advance knowledge and highlight avenues for intervention.

### **Goals of the present review**

Here we explore friendships and peer relationships and self-harm ideation and behaviour by synthesising the evidence linking these constructs to identify relationships and evidence gaps. Goals are to:

- 1) Provide a qualitative synthesis of the literature investigating self-harm ideation and behaviour and friendships and peer relationships, considering studies both of young people with self-harm ideation and behaviour and of friends and peers of young people with self-harm ideation and behaviour.
- 2) Identify the factors and mechanisms influencing the relationship between self-harm ideation and behaviour and friendships and peer relationships.

### **Methods**

#### *Search strategy and selection criteria*

We conducted a broad literature search of studies relating to friendships and peer relationships and self-harm ideation and behaviour in young people across 11 databases (MEDLINE, Embase, PsycINFO, Web of Science, SCOPUS, PubMed, Cochrane Library, CINAHL, Sociology Database, International Bibliography of the Social Sciences and Sociological Abstracts) from database inception to January 2021. The search was updated in October 2022 and April 2024. Reference lists of relevant

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articles and reviews were also searched for relevant publications. The search strategy included the main constructs of interest and their derivatives (full search strategy in appendix; p. 1-4): self-harm or "self harm\*" or self-injur\* or "self injur\*" or "self-cut\*" or cut\* or self-destruct\* or "self destruct\*" or "nonsuicidal self-injur\*" or "non-suicidal self injur\*" or NSSI or "deliberate self-harm" or "deliberate self harm" or DSH or "self mutil\*" or overdos\* or "self-inflicted injur\*" or "self inflicted injur\*" or "para suicid\*" or para-suicid\* or suicid\* AND peer\* or "peer relation\*" or "peer connect\*" or "peer network" or "social group" or friend\* or "friend\* group" or "peer group" or "social network\*" or "social relation\*" or "social connect\*" or "peer support" AND teen\* or child\* or kid\* or "young people" or "young person" or youth or adolesc\* or pupil\* or juvenile or "young adult\*" or "minor" or "university student" or "student" or "11-24 year\*" or "12-25 year". This systematic review was performed in accordance with the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) 2020 guidelines<sup>21</sup> (see appendix; p. 5). The systematic review protocol was registered on PROSPERO (CRD42020224223) prior to data extraction.

Eligible studies consisted of peer-reviewed empirical articles which 1) considered self-harm ideation and behaviour (SHIB) including self-harm (SH and/or NSSI; behaviours intended to harm oneself, with and without suicidal intent<sup>1</sup>), suicidal ideation (SI; active, passive suicidal thoughts or plans<sup>22</sup>) and suicidal behaviour (SB; any behaviour intended to end one's life including suicidal attempt and death<sup>23</sup>); 2) explored friendships and peer relationships characterised by mutual influence, closeness and disclosure<sup>24,12</sup>; however, studies were included regardless of whether they provided a researcher definition, participant self-definition, or assumed common understandings of the construct); 3) included samples of young people between 11-25 years old (studies including participants outside this age range, e.g., 18-30, were excluded unless they separated findings by age group) and 4) were in English language, irrespective of geographical location. Quantitative and qualitative articles were included; grey literature articles were excluded. Articles on peer victimization and bullying, familial and romantic relationships were excluded due to existing reviews<sup>25,26,27</sup>. Articles were not restricted to a specific date range.

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### *Study Selection and Data Extraction*

Overall, the initial search yielded a total of 23,241 results, of which 11,373 duplicates were removed. Title and abstract screening was performed independently by DB and SBH on EndNote v20, whereby articles were separately classified into three folders (excluded, full-text, unsure); uncertainty and disagreement was resolved by discussion. This process yielded 257 full-text articles assessed for eligibility. Updated searches yielded a total of 5,974 results, of which 2,887 were duplicates. Title and abstract screening yielded 85 full-text studies to be assessed for eligibility. Full-text eligibility was performed independently by DB and SBH using a Microsoft Excel form created by DB in line with the eligibility criteria. Disagreements were resolved by discussion between the two raters, and input from a third independent rater was not considered necessary. Data extraction was performed by DB on a designated Microsoft Excel form collecting data on each article's a) authors, b) year of publication, c) location of study, d) sample characteristics (total sample, sample type e.g., community, clinical) and demographic information (e.g., age, gender), e) variables of interest (i.e., characteristics of friends and peers, relationships with friends and peers, exposure to friends' self-harm ideation and behaviour), f) outcomes (e.g., ego self-harm ideation and behaviour, friend and peer mental health outcomes) and g) risk of bias rating. See Figure 1.

[Insert Figure 1]

### *Data Analysis*

Given the substantial variability in focus, methodology and the variables measured we present the findings through a narrative synthesis, where common factors identified across studies afforded grouping and summarising findings in themes or categories<sup>28</sup>.

### *Risk of Bias Assessment*

To assess the suitability and quality of eligible studies, the Newcastle Ottawa Scale (NOS<sup>29</sup>) and the Newcastle Ottawa Scale for cross-sectional studies<sup>30</sup> were used for quantitative studies, and the JBI Critical Appraisal Checklist for Qualitative Research<sup>31</sup> was used for qualitative studies. Quality

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criteria were developed for the present review based on comparable reports<sup>32</sup>, whereby articles were rated as high (0–4 points), moderate (5–7 points) or low risk of bias (8–10 points). Studies were independently rated by DB and SBH (who rated 25% of included articles) with 90% of agreement. Any disagreement was discussed (see appendix; p. 6-8).

## **Results**

The initial search identified 69 primary articles and the updated search identified a further 21 primary articles, yielding a total of 90 primary articles included in the present systematic review. These were primarily quantitative studies (n=73), with fewer qualitative articles (n=16) and one mixed-methods study (n=1). Studies presented mainly moderate (n=47) and low (n=41) risk of bias, whilst a few presented a high risk of bias (n=3) (see appendix p. 6-8). One mixed methods study had moderate and low risk of bias for the quantitative and qualitative components respectively. Studies were performed across 13 countries, including the USA (n=48), Australia (n=9), China (n=9), Canada (n=7), the UK (n=7), South Korea (n=2), Taiwan (n=2), Finland (n=1), Israel (n=1), New Zealand (n=1), Saudi Arabia (n=1), South Africa (n=1), Sweden (n=1).

Studies were categorised based on target population and focus, i.e., studies of young people with self-harm ideation and behaviour (Table 1) and studies of friends and peers of young people with self-harm ideation and behaviour (Table 2). Five studies focusing equally on both populations are described separately and their findings are integrated into both categories where relevant (Table 3). The sample across studies primarily consisted of adolescents (11-17 years old; n=62) and the remainder young people (18-25 years old; n=28). Most studies recruited a mixed-gender sample (n=85), while 4 studies recruited exclusively females and 1 recruited exclusively males (see appendix; p. 9-13).

The language used to present the results consists of self-harm ideation and behaviour and, where appropriate, the specific behaviour as conceptualised/measured in each study (e.g., NSSI, cutting, suicidality). Young people with self-harm ideation and behaviour are referred to as participants or

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ego, whereas the words “friends” and “peers” are used interchangeably to refer to friends and peers of young people with self-harm ideation and behaviour. In practice, in the first results theme, friends are factors influencing participants’ self-harm ideation and behaviour, whereas in the second theme friends are study participants. Finally, friendships were mostly offline, except for six studies which exclusively considered online friendships.

## **Studies of young people with self-harm ideation and behaviour (K=55)**

Studies included in this section consider the role of a) characteristics of friends and peers (K=32), b) friend and peer support (K=22) and c) mechanisms of peer influence (k=10) on ego self-harm ideation and behaviour.

### 1.1 The role of friend and peer characteristics in ego self-harm ideation and behaviour (K=32)

The majority of studies focused on peer self-harm ideation and behaviour (n=23; findings from studies marked with an asterisk(\*) were extracted from studies on friends given their relevance). Peer suicidal attempt was found to significantly relate to and predict ego suicidal ideation (OR=1.56-2.73<sup>33,34</sup>)<sup>33,34,35,36\*,37\*,38\*</sup> and ego suicidal attempt (OR=1.68-2.37<sup>33,34</sup>) (in girls only<sup>33</sup>)<sup>35,36\*,37\*,38\*,39,40,41</sup> above and beyond individual risk factors. Peer disclosed suicidal ideation was significantly associated with ego self-harm (OR=3.42), suicidal ideation (OR=4.39) and suicidal attempt (OR=4.93)<sup>42</sup>. Peer suicide death was significantly associated and predicted ego suicidal ideation (OR=2.23-5.06<sup>43</sup>)<sup>43,44\*,45</sup> and attempt (OR=2.72-3.07<sup>43</sup>)<sup>38\*,43,45</sup>. Peer NSSI was observed to significantly relate to and predict ego NSSI (OR=1.37-2.03<sup>46, 47</sup>)<sup>15,46,47,48,49</sup>, ego suicidal ideation (OR= 3.08<sup>47</sup>)<sup>47,49</sup> and ego suicidal attempt (OR=2.87<sup>47</sup>). Two studies only examined/reported cutting, but not other methods of NSSI<sup>15,49</sup>. One study observed a significant decrease in perceived ability to control urges to self-harm upon exposure to peer self-harm in a hypothetical experimental task<sup>50</sup>. Effects of real-life exposure were observed at one-year follow-up<sup>33,34,39,40,46</sup>, but were not significant for longer follow-up periods<sup>33,45,51\*,52\*,53\*</sup>. Synthesis of findings indicates that certain ego and social characteristics influenced findings. For instance, girls and young people experiencing symptoms of or meeting



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clinical diagnostic criteria for depression or anxiety, were twice or three times more likely to report having friends with self-harm ideation and behaviour<sup>39,40,47,49</sup>. Experience of negative life events<sup>54\*</sup> and closeness or personally knowing peers who attempted or died by suicide were related to ego outcomes following exposure<sup>36\*,43</sup>.

Characteristics of the friendship environment were also significant. For instance, self-reporting a higher number of friends with NSSI was significantly related to adolescents' own NSSI<sup>46,15</sup> whereas self-reporting a higher number of friends in general (i.e., high sociality or sending more friendship nominations) was negatively related to self-cutting among boys<sup>15</sup>. Girl, but not boys, with cross-gender friendships were significantly more likely to experience suicidal ideation<sup>55</sup>. Similarly, being in a bridging position (i.e., connecting friend groups) and having intransitive friendships (i.e., having friends that are not friends with each other) were associated with higher self-cutting (NSSI)<sup>15</sup> and suicide ideation among girls<sup>35</sup> and individuals at-risk<sup>34</sup>. Suicidal attempts were higher in schools with lower peer integration (fewer friend nominations concentrated in fewer students) and where individuals with self-harm ideation and behaviour were more popular and clustered together<sup>56</sup>.

Seven studies focused on peer non-conformity or “deviancy”. First, a significant positive association was found between having delinquent friends and ego NSSI<sup>57,58</sup> and ego suicidal ideation across clinical<sup>59</sup> and community adolescent samples<sup>60,61,62</sup>. These relationships were mainly observed for friend school disconnectedness, a sub-dimension of deviance<sup>61,62</sup> (yet lost significance in one study after controlling for suicide risk and proactive factors<sup>63</sup>). Ivanich et al.,<sup>64</sup> found that individuals who had attempted suicide reported significantly more friends who use drugs and alcohol compared to those experiencing suicidal ideation. Across studies, ego gender, depressive symptoms, ethnicity and affluence were significant factors contributing to the aforementioned relationships<sup>61,62</sup>.

Overall, friend characteristics and behaviours were significantly related to and predicted ego self-harm ideation and behaviour, while the peer environment showed positive and negative associations.

### 1.2. The role of friend and peer support in ego self-harm ideation and behaviour (K=22)

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Twenty-two studies considered the role of peer support. Three articles focusing on disclosure found that approximately 60-70% of individuals who disclosed NSSI confided in friends across adolescence<sup>65</sup> and young adulthood<sup>66,67</sup>. Disclosure was related to greater interpersonal influence motivations for NSSI, friendship quality<sup>66</sup> and having more friends who also self-injured<sup>65</sup>. One qualitative suggested closeness and trust encouraged disclosures to friends to obtain emotional and practical support, while stigmatising attitudes discouraged disclosures<sup>68</sup>.

Twelve studies considered ego help-seeking/support from offline friends, with mixed results. Peer support and reporting more friends providing emotional support<sup>69</sup> was negatively related to a) suicidal ideation/planning among girls<sup>70</sup>, older adolescents<sup>71</sup> and those reporting higher symptoms of depression<sup>72</sup> and b) suicidal attempt among homeless youth experiencing low and high symptoms of depression<sup>69</sup>, as well as c) moderating the relationship between childhood maltreatment and NSSI<sup>73</sup>. Instead, low support from a close friend was associated with suicidal ideation among young people reporting higher symptoms of depression<sup>72</sup>. Two interventions considered peer support. A psychoeducational intervention improved boys' intentions to seek help from a friend when feeling suicidal<sup>74</sup>. Similarly, peer relations training moderated the relationship between trauma symptoms and suicidal ideation<sup>75</sup>. In contrast, Hasking and colleagues<sup>65</sup> found that even if adolescents reported more perceived friend support, these perceptions decreased over time and were not related to NSSI severity. Snir et al.,<sup>76</sup> observed that high and low levels of perceived peer support were related to *increased* self-injury. Qualitative findings show offline friendships typically exerted a positive impact through support provision, care, empathy and understanding<sup>68,77,78</sup>. However, shared experiences could also contribute to self-harm and transmission of methods, in some cases occurring with and in the presence of friends<sup>77,78</sup>.

Six studies report online support interactions with friends and peers among clinical<sup>79,80</sup>, community<sup>70,81,82</sup> and online samples<sup>83</sup>. Viewing and sharing content, and talking online about self-injury with offline friends was positively related to history of NSSI and suicidal ideation<sup>80</sup>. Talking about self-injury with online-only friends was the only factor significantly related to history of suicide

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attempts. The importance placed on web communication was associated with increased risk of self-injurious thoughts and behaviours among boys only<sup>70</sup>. Kruzan et al.,<sup>81</sup> found that using a moderated peer support app was related to lower NSSI frequency. Qualitative studies of online peer support suggest that online communities provide practical support and advice, empathetic responding and the possibility of sharing experiences<sup>79,82,83</sup>. However, if not moderated, online peer support could normalise self-harm ideation and behaviour, be emotionally difficult and trigger urges, while also reducing offline support-seeking<sup>83</sup>.

Overall, young people appear to primarily rely on friends and peers for support, however evidence on the impact of support on ego self-harm ideation and behaviour remains mixed.

### 1.3. The friend and peer mechanisms of influence in ego SHIB (K=10)

Most studies on peer mechanisms used social network methods to explain similarity in self-harm ideation and behaviour between young people and friends, by investigating peer socialisation (influence of peer self-harm ideation and behaviour on ego self-harm ideation and behaviour e.g., social influence) and social selection mechanisms (influence of self-harm ideation and behaviour on peer selection, e.g., homophily). No evidence of selection effects at the best friend level were found i.e., ego NSSI did not prospectively predict having a best friend engaging in NSSI at follow-up<sup>84,85,86</sup>. However, evidence of ego NSSI predicting friendship group NSSI at follow-up<sup>84</sup> was observed, suggesting individuals who engage in NSSI may prefer to join a friendship group engaging in NSSI. Indirect evidence for direct socialisation (i.e., peer influence) effects were observed across most studies whereby friend NSSI prospectively predicted ego NSSI at follow-up, above and beyond baseline similarities in NSSI<sup>86,84</sup>.

Friendship group socialisation effects were mixed; one study found significant effects<sup>87</sup> whereas another did not<sup>84</sup>. Best friend<sup>86</sup> and friendship group<sup>84</sup> NSSI frequency predicted ego NSSI frequency. One study did not find direct selection or socialisation effects of friend NSSI and ego NSSI, but found indirect effects of friend's depressive symptoms on ego NSSI<sup>85</sup>. Additional indirect socialisation

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mediators include friends' impulsivity (related to increases in ego NSSI in boys only<sup>85</sup>) and negative urgency<sup>87</sup> (a subdimension of impulsivity). Ego emotion regulation difficulties moderated the relationship between friend NSSI frequency and ego NSSI, strengthening the effect among those with emotional regulation difficulties<sup>86</sup>.

Two cross-sectional studies found that friends' disclosed, but not undisclosed, suicidal attempt and death were significantly related to ego suicidality (i.e., suicidal ideation and attempts)<sup>88,89</sup> and ego emotional distress<sup>89</sup>. By contrast, Zimmerman et al.,<sup>90</sup> found that ego over-estimation or accurate perception of friend suicidal attempt was significantly related to ego suicidal attempt, while friends' self-reported suicidal attempt alone was not related to ego suicidal attempt. However, causality could not be established given study design.

Finally, Eisenlohr-Moul and colleagues<sup>91</sup> found that higher-than-usual peer stress conditions (specifically periods of higher peer stress) predicted greater risk for suicidal behaviour among females with lower cortisol response.

Altogether, evidence of mechanisms is still scarce, yet it points to direct peer selection and both direct and indirect peer influence mechanisms in ego self-harm ideation and behaviour.

### **Studies of friends and peers of young people with self-harm ideation and behaviour (K=42)**

Studies in this section considered a) friends' attitudes and responses to ego self-harm ideation and behaviour (K=15), b) friends' outcomes from exposure to ego self-harm ideation and behaviour and c) interventions for friends (K=7)

#### *2.1. The attitudes and responses of friends towards ego self-harm ideation and behaviour (K=15)*

Six quantitative studies focused on adolescents' attitudes and responses towards a hypothetical peer with self-harm ideation and behaviour<sup>92,93,94,95,96,97</sup>. Frequent responses included talking to the peer, and telling an adult or health professional<sup>92,94,95</sup>. Improving peer relationships, reducing bullying and stigma, and increasing awareness were mentioned in one study<sup>92</sup>. Previous real-world experience with

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a suicidal friend<sup>94,93,96</sup>, severity of risk signs<sup>95,97</sup> and empathy<sup>95</sup> were related to more accepting attitudes<sup>93,96</sup> and responding<sup>94,95,97</sup>.

Similar findings were observed across nine qualitative studies exploring lived experiences of friends supporting a young person who self-injured<sup>20,77,82,98,99,100,101</sup>, attempted or died by suicide<sup>102</sup>.

Empathising, talking and listening were the primary forms of support identified and provided, followed by distraction, practical support and taking responsibility for their friend<sup>20,77,82,92,98,100,101</sup>.

Most friends also wanted to involve others – especially adults and professionals – yet showed hesitancy in trusting adults or institutions and wanted to respect their peers' privacy<sup>20,92,98,99,100,101,102</sup>.

Stigma and taboo among adults in the community was mentioned in one study, whereby bereaved young people suggested it was easier to talk about suicide within the peer group<sup>103</sup>. Stereotypes and judgements about the authenticity of peers' self-harm were mentioned in a few studies albeit they represented the minority<sup>98,100</sup>.

Findings present a coherent picture across real and hypothetical scenarios emphasising peers' supportive attitudes and responses. However, friends' lived experiences suggest conflicting priorities and difficulty in determining how to best support their peers.

## 2.2. The impact of exposure to friends and peers with self-harm ideation and behaviour (K=21)

Studies focused on the outcomes of friends supporting a peer with self-harm ideation and behaviour (n=6) and of friends exposed to peer suicidal behaviours (n=16).

First, studies observed that friends exposed to peer suicide presented a higher risk of meeting diagnostic criteria for or exacerbation of symptomatology of any psychiatric disorder (RR=2.6<sup>51</sup>; OR=1.74-2.24<sup>36</sup>)<sup>36,51,53,104,105</sup>, major depression (RR=2.6-3.4<sup>51,105,106</sup>; OR= 1.02<sup>54</sup>)<sup>44,51,52,53,54,104,105,106,107</sup>, anxiety disorder<sup>53,104,105</sup>, PTSD<sup>44,51,52,53,104,106</sup> and substance abuse<sup>38,44,51,105</sup>, alongside symptoms of grief<sup>51,52,104,106,108,109</sup>. These increases were mainly observed within 1 and 6 months following exposure<sup>51,53,105,107</sup>. Closeness to the victim<sup>36,44,51,52,104,106,108</sup> and intensity of exposure<sup>52,53,106,107</sup> most strongly related to these negative outcomes. One experimental study observed significantly more self-

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rated sadness and fear and reduced facial expressions of happiness among individuals exposed to a hypothetical peer experiencing suicidal ideation<sup>110</sup>.

Qualitative studies exploring experiences of bereavement<sup>102,111,112,113</sup> and of supporting a friend with self-harm ideation and behaviour<sup>78,98,99,100</sup>, reported similar findings. Bereaved friends struggled to make sense of the suicide and questioned the strength of the relationship with their deceased friend, alongside a range of complex feelings including anger, frustration, guilt, self-blame and not feeling entitled to grieve<sup>102,111,112,113</sup>. Substance use, risk-taking behaviour, and forms of self-harm in response to the suicide were mentioned<sup>102,111,112</sup>. Changes in relationships with others were mentioned, from feeling supported and/or supporting others to feeling misunderstood<sup>102,111,113</sup>.

Remaining studies identified intense feelings of worry, sadness, shock, anxiety and helplessness among friends supporters<sup>20,68,78,98,99,100</sup>. A sense of duty and responsibility to help, despite feeling unequipped, were present across studies<sup>20,68,78,98,100</sup>. In some cases, participants expressed satisfaction in their role as supporters, closer relationships<sup>20,68</sup> and increased mental health knowledge<sup>20,68,78,98,99</sup>.

Altogether, studies emphasised friends' unmet needs and difficulties coping, alluding to long-lasting emotional consequences among bereaved friends and friend supporters<sup>20,78,98,100,112</sup>.

### 2.3. Interventions for friends of young people with self-harm ideation and behaviour (K=7)

Seven studies considered interventions for friends and peers, including four prevention strategies<sup>114,115,116,117</sup>, one intervention to improve peer support<sup>118</sup>, and two postvention strategies following peer death by suicide<sup>119,120</sup>. These are presented in appendix (p.14).

## **DISCUSSION**

The present systematic review synthesises the extant literature on friendships and peer relationships and self-harm ideation and behaviour in young people. The evidence suggests potential relationships between these constructs. Findings are summarised based on the target population: (1) young people with self-harm ideation and behaviour and (2) friends and peers of young people with self-harm ideation and behaviour.

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Evidence on the first population focuses on the positive and negative impact of friends and peers' characteristics and support. Peer self-harm ideation and behaviour and so-called 'deviancy' are the friendship variables most commonly explored, which relate to and prospectively predict ego self-harm ideation and behaviour (e.g.,<sup>33,35,48,58,59,62</sup>). Differing effects emerge depending on the outcome variables explored, the sample and, in the latter case, the definitions of 'deviancy' adopted (e.g., school disconnectedness, smoking and drinking, criminal behaviour). This precludes the generalisability of findings. Furthermore, considering friends' characteristics and behaviours as 'deviancy' may inadvertently stigmatise and overlook underlying societal, social and individual stressors within this group, thus limiting our understanding of potential risk mechanisms. Nonetheless, these findings remain striking and consistent with clinical experience and concerns around potential peer influence on self-harm and suicide<sup>18,121</sup>.

A significant body of evidence focuses on peer help-provision and support with mixed findings, highlighting the complexity of this relationship. Young people experiencing self-harm ideation and behaviour typically confide in friends and peers, whose support they perceive positively<sup>65,68,79</sup>. Conversely, lack of peer support, negative responses from peers and isolation may contribute to self-harm ideation and behaviour<sup>68,72</sup>. Interestingly, peer support may create a pathway for the transmission of methods, which may ultimately contribute to the onset and maintenance of self-harm ideation and behaviour<sup>77,78,83</sup>. Research should further explore the type of support provided, its mechanisms of action and how it relates to friendship dynamics.

The second portion of the review focused on evidence pertaining to friends. Research on friends and peer' attitudes and responses to self-harm ideation and behaviour is currently limited. Across studies, personal experience with self-harm ideation and behaviour (own and/or others') was related to more accepting attitudes and helpful responding<sup>82,93,94</sup> including talking, empathetic listening, practical support and distraction<sup>92,95,98,101</sup>. Whilst involving adults and health professionals was mentioned in quantitative studies, this is challenging in real life given friendship expectations of trust and privacy<sup>98,100</sup>. This example emphasises the importance for research to incorporate lived experiences.

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Findings suggest that friends are negatively impacted by peer self-harm ideation and behaviour.

Young people bereaved by friend suicide are significantly more likely to experience symptoms of grief, depression, anxiety, PTSD, alongside engaging in risk behaviours such as smoking and drinking (e.g.,<sup>38,51,53,105,107,108,111</sup>). Strong negative feelings are consistently observed among both bereaved friends and friend supporters, highlighting the importance of considering the experiences and needs of this population.

We note that whilst the present review did not explicitly aim to evaluate interventions and some may have been missed, promising avenues of intervention were identified (see appendix; p.14), including peer relationship and support provision training<sup>74,75,118</sup>, as well as postventions for bereaved friends and peers<sup>119</sup>. We hope that the current review will provide justification and evidence to further identify, develop and evaluate tailored interventions for young people experiencing self-harm ideation and behaviour and for friends.

Overall, research remains largely descriptive, with only a few studies testing causal mechanisms<sup>122</sup>. Across the literature, gender, mental health issues and friendship qualities emerge as significant risk factors, mediators and moderators.

Findings suggest females are more likely to be exposed to and influenced by friends' self-harm ideation and behaviour, as well more likely to be supporters and to experience the negative outcomes associated with the role (e.g.,<sup>98,94,78</sup>). This potentially relates to same-sex friendships and self-harm (NSSI) being more numerically prevalent in this age/gender group<sup>123</sup>, as opposed to males which typically present higher rates of suicide<sup>124</sup>. However, recent evidence suggests that gender differences in rates of self-harm ideation and behaviour may be unreliable, especially since male suicidal attempts may be underreported<sup>125</sup>. This suggests that investigation of understudied genders such as males and gender minorities is now needed given evidence of a) different friendship dynamics<sup>126</sup>, b) particular trajectories of mental health struggles, c) specific barriers/challenges in accessing support<sup>127</sup> and d) important benefits from peer support<sup>127</sup> and tailored interventions<sup>74</sup> among these populations.



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Mental health is as an important factor mediating and moderating the relationships observed. Pre-existing symptoms of mental health disorders, such as depression, anxiety or substance use, alongside emotion regulation difficulties were found to a) intensify peer influence on ego self-harm ideation and behaviour<sup>57,76,86,89</sup>, b) increase the likelihood of negative outcomes among friends and peers<sup>44,107</sup> and c) amplify the potential benefits of interventions<sup>119</sup>. However, at the same time, having personal experience of self-harm ideation and behaviour or of mental health difficulties contributed to more supportive and appropriate responding<sup>79,93</sup>. This has implications for research and practice especially among at-risk youth.

Equally, friendship closeness and quality were found to contribute to the impact of exposure on ego self-harm ideation and behaviour<sup>34,86</sup> and on friends negative outcomes<sup>44,51,108</sup> as well as facilitating disclosure<sup>66</sup>. These friendship dimensions should be measured consistently and reliably in future research.

Finally, very few studies robustly examined hypothesised causal mechanisms linking friendships and peer relationships and self-harm ideation and behaviour<sup>122</sup>. The most commonly explored are peer selection (i.e., individuals befriend peers based on similar self-harm ideation and behaviour), and peer socialisation (i.e., peer self-harm ideation and behaviour influences ego self-harm ideation and behaviour). Whilst findings are consistent with the existence of such processes, current research is scarce, evidence is mixed and studies lack appropriate methods to infer causality processes<sup>122</sup>. This highlights the importance of conducting robust prospective designs. A second set of mechanisms proposed, yet not tested through causal designs, suggests that friend known or disclosed, as opposed to unknown and undisclosed, self-harm ideation and behaviour is more influential, alluding to underlying social processes.

## **Limitations**

We note a series of limitations when interpreting the findings of the present systematic review. First, the use of narrative syntheses to summarise findings is often criticised for its lack of transparency and

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potential bias, as opposed to meta-analysis which provide more statistically robust findings allowing for hypothesis-development and concrete directions for research<sup>128</sup>. Nonetheless, the former approach was considered appropriate to address the high degree of heterogeneity and provide additional understandings which may not be achievable through statistical methods<sup>28</sup>.

Heterogeneity in the methodology and inconsistencies in the definition and measurement of key constructs (i.e., friendships, self-harm ideation and behaviour) across studies may underlie a second source of bias. Whilst broad trends were identified within the findings, the inclusion of a wide spectrum of research may invertedly have led to lack of specificity, precluding a more fine-grained evaluation of effects. Particularly, studies were predominantly cross-sectional, of moderate quality and mainly relied on convenience adolescent samples. Given the exclusion of grey literature, findings should be apprehended in light of possible publication bias. Equally, we note no involvement of lived experience in the shaping and conduct of the present review. Lived experiences were also substantially underrepresented within the included studies. We suggest future studies implement qualitative co-produced designs to inform, complement, and contextualise quantitative findings and ground them in the lived experiences of individuals.

Finally, the decision to group findings thematically and by population (ego, friend), despite some overlapping experiences may have impacted conclusions drawn and interpretation.

## **Conclusions**

Our overarching impression based on the present review is that, despite an extensive literature, the field lacks clarity to synthesise and understand the relationship between friendships and peer relationships and self-harm ideation and behaviour among young people. Nonetheless, a series of robust findings was identified, including: a) friends' self-harm ideation and behaviour as key predictors of ego self-harm ideation and behaviour across clinical and community populations, b) friends and peers as primary sources of support for young people experiencing self-harm ideation and

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behaviour and c) negative outcomes among bereaved friends and friend supporters, including symptoms of depression, anxiety, PTSD and grief, alongside difficult emotions.

Findings provide a compelling, yet complex picture. Heterogeneity regarding samples, construct definition and measurement, and study design currently precludes full understanding of the relationships between friendships and peer relationships and self-harm ideation and behaviour. Future research should consider these complex constructs in appropriate and consistent ways and through the use of prospective study designs to robustly interrogate key mechanisms, mediators and moderators. Finally, it is important to integrate both ‘sides’ of the friendship through multi-informant approaches.

### **Author Contributions**

DB and SBH conceived the study, and ET, MRB and GA contributed to the formulation of the study design and the protocol development. DB undertook the literature searches and was responsible for data collection, curation and visualisation. DB and SBH conducted data analysis (abstract/full text screening and quality assessments as first and second rater) and data interpretation. DB and SBH wrote the original manuscript with the contribution and critical input of all authors ET, MRB and GA. SBH, ET and MB secured financial support for the project leading to this publication. All authors read and approved the final manuscript. All authors had full access to all the data in the study. On agreement with all co-authors, DB had final responsibility for the decision to submit for publication.

### **Declarations of Interest**

We declare no competing interests.

### **Acknowledgements**

This research was funded by an ESRC DTP PhD studentship awarded to D Bilello. Townsend acknowledges the support of the UK Research and Innovation (UKRI) Digital Youth Programme award (MRC project reference: MR/W002450/1) which was part of the AHRC/ESRC/MRC Adolescence, Mental Health and the Developing Mind programme. We would like to thank Abbie Bull for her valuable help with data presentation and Victoria Wallace for her assistance during search/data retrieval.

## Figures

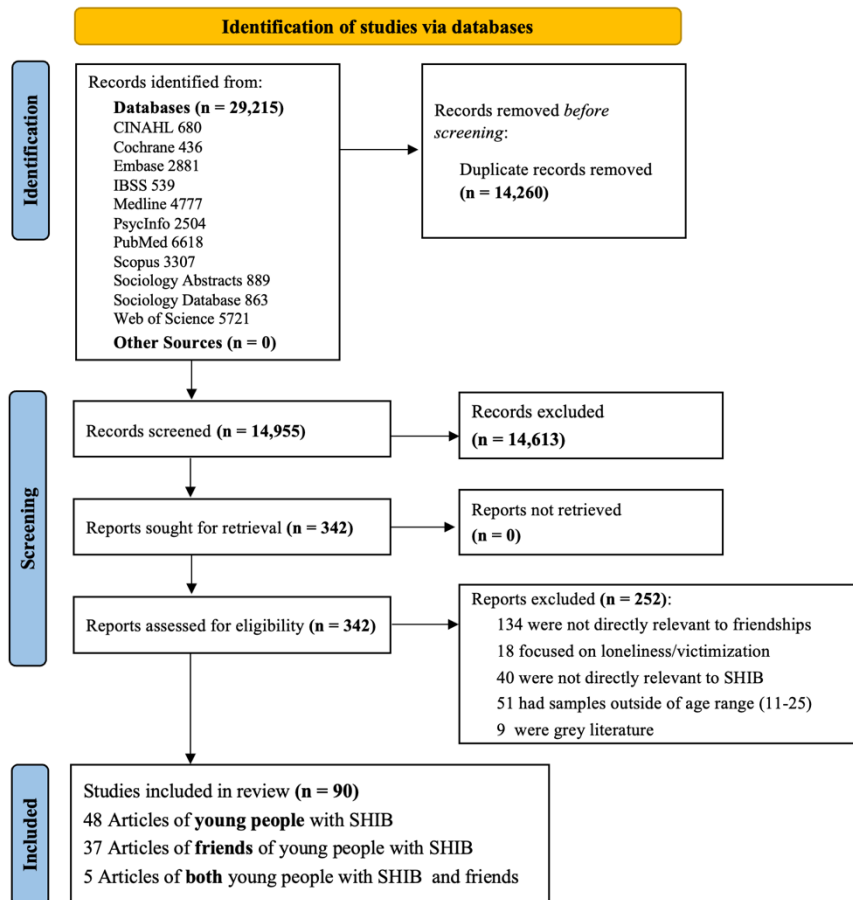


Figure 1: PRISMA diagram of included studies

## Tables

**Table 1:** Characteristics of included studies of young people with self-harm ideation and behaviour (i.e., ego)

Authors/ Location/ Quality	Study Design	Population		Measures		Results
		Source	Demographic Information	Outcome Variables	Friendship Variables	
Abbott et al., (2019) <sup>59</sup> USA Moderate	Cross-sectional	Clinical sample of Adolescents (n = 129)	M 23 (18%) F 106 (82%) 12–18 years old (M=14.96, SD=1.67) Black /African American (49%)	<b>Suicidal Ideation/ Behaviour (SI/SB).</b> Columbia Suicide Severity Rating Scale <sup>129</sup>	<b>Nominations.</b> Important People Interview (IPI <sup>130</sup> )	Having deviant peers was significantly associated with higher intensity of SI.
Abrutyn & Mueller (2014) <sup>33</sup> USA Low	Prospective	High School adolescents (n = 9,309)	M 5,042 F 5,694 11-19 years old (M=15.18, SD=1.61- Males only) (M=15.37, SD=1.71- Females only)	<b>Suicidal Ideation (SI).</b> Single-item measure (past 12 months) <b>Suicidal Attempt (SA).</b> Single-item measure (past 12 months)	<b>Friend Suicidal Attempt (FSA).</b> Single-item measure (past 12 months) – Ego report	FSA significantly increases the likelihood of SI and SA in girls, and SI only in boys (at 1-year follow-up). No significant effect of FSA and SI at 6-year follow up were observed.
Armiento et al., (2014) <sup>66</sup> Canada Moderate	Cross-sectional	University Students (n = 268)	M 80 (30%) F 188 (70%) 17-24 years old (M=19.07)	<b>NSSI.</b> Inventory of Statements about Self-Injury (ISAS <sup>131</sup> ) <b>Suicide Ideation (SI).</b> Suicide Behaviours Questionnaire-Revised (SBQR <sup>132</sup> )	<b>Disclosure of NSSI.</b> Single-item measure <b>Friendship Quality.</b> Inventory of Parent and Peer Attachment (IPPA <sup>133</sup> )	73.1% of individuals with history of NSSI disclosed their self-harm to friends. Self-injurers reporting greater a) physical pain, b) severity of NSSI, c) suicidal ideation, d) interpersonal influence motivations for NSSI and e) greater friendship quality were more likely to disclose their NSSI to others
Bae & Lee (2023) <sup>55</sup> USA Moderate	Cross-sectional	High School Adolescents (n=2,990)	M 1,602 (54%) F 1,388 (46%) 13-18 years old	<b>Suicidal Ideation (SI).</b> Single-item measure	<b>Nominations.</b> Single-item measure (up to 7 best friends) <b>Peer Gender.</b> Single-item measure (for each nominated friend)	Girls had a significantly higher percentage of SI (37.7%) compared to boys (18.5%). Having different-gender friends was significantly associated to SI among girls but not boys.
Bailey et al., (2021) <sup>79</sup> Australia Moderate	Qualitative	Clinical Sample of Young People (n = 15)	M 5 (3%)/F 9 (60%) Transgender 1 (7%) 17-24 years old (M=21.3, SD=2.7)	Semi-Structured Interviews		Four themes described participants' experiences of the peer networking feature of the intervention: 1) a safe and supportive environment; 2) the importance of mutual experiences; 3) difficulty engaging and connecting and 4) the pros/cons of banning discussions about suicide

Baller & Richardson (2009) <sup>34</sup> USA Low	Prospective	High School adolescents (n = 2,084)	M (50%) / F (50%) 12-20 years old (M=16.25, SD=1.48)	<b>Suicidal Ideation (SI).</b> Single-item measure (past 12 months)	<b>Nominations.</b> Single-item measure (5 male/ 5 female best friends) <b>Friend (FSA)/ Friend-of-friend suicidal attempt (FFSA).</b> Single-item measure (past 12 months) – Friend report	FFSA (and having more friends-of-friends) and FSA significantly increased likelihood of ego SI in at-risk sample at 1-year follow-up
Bearman & Moody (2004) <sup>35</sup> USA Low	Cross-sectional	High School adolescents (n = 13,465)	M (50%) F (50%) 11-21 years old (M=15.82, SD=1.75)	<b>Suicidal Ideation (SI).</b> Single-item measure (past 12 months) <b>Suicidal Attempt (SA).</b> Single-item measure (past 12 months)	<b>Nominations.</b> Single-item measure (5 male and 5 female best friends) <b>Friend suicidal attempt (FSA).</b> Single-item measure (past 12 months) – Ego report	FSA significantly increased likelihood of ego SI and SA in boys and girls. Having more friends-of-friends significantly increased ego SI (only among girls). High school social network density (i.e., strong friendship ties) significantly decreased odds of SI in girls and SA in boys.
Bertera (2007) <sup>71</sup> USA Moderate	Cross-sectional	High School Adolescents (n=1591)	M 757 (48%) F 834 (52%) 15-19 years old (M=17.01) White/Caucasian 1076 (68%)	<b>Suicidal Ideation (SI).</b> Five-item measure from Composite International Diagnostic Interview (CIDI <sup>134</sup> )	<b>Peer Positive Social Support.</b> Six-item measure of positive social exchanges with peers <b>Peer Negative Social Support.</b> Six-item measure of negative social exchanges with peers	Females had significantly higher scores than males on positive exchanges with peers and SI. Positive social exchanges with peers (peer support) were associated with lower SI scores in older (18-19 years old) but not younger adolescents, while negative social exchanges were not associated with SI.
Calcar et al. (2021) <sup>74</sup> Australia Low	Intervention RCT	High School Adolescents (n = 594)	M 594 (100%) 16-18 years old	<b>Suicidal Ideation (SI).</b> Single-item measure (past 12 months)	<b>General Help-Seeking.</b> General Help-Seeking questionnaire (GHSQ <sup>135</sup> ) <b>Actual Help-Seeking.</b> Actual Help-Seeking Questionnaire (AHSQ <sup>136</sup> ) <b>Confidence Supporting Peers.</b> Two-item measure	At follow-up, the Silence is Deadly intervention significantly increased boys' intentions to seek help from a friend compared to the control group. Staff reported improvements in males' attitudes, understanding and intention to seek information about sources of support.
Copeland et al., (2019) <sup>15</sup> USA Low	Cross-sectional	High School Adolescents (n=11,160)	M (48%) F (52%) 16-18 years old	<b>Self-cutting frequency.</b> Single-item question (past 12 months)	<b>Nominations.</b> Single-item measure (Up to 2 best friends and five close friends)	Having friends who report cutting is significantly associated with ego cutting. Being in a bridging position (i.e., connecting friend groups) is significantly related to higher self-cutting in girls/boys High sociality (i.e., nominating more people as friends) is significantly related to lower cutting for boys.

Copeland et al., (2021) <sup>88</sup> Saudi Arabia Low	Cross-sectional	High School Adolescents (n=545)	M (50%) F (50%) 15-19 years old (M=16.8)	<b>Suicidality (SI/SA).</b> Two-item measure of suicidal ideation and attempt (past 12 months)	<b>Nominations.</b> Single-item measure (up to six closest friends) <b>Friends Depression Disclosure (FD).</b> Single-item measure –Ego report <b>Friends Self-harm Disclosure (FSHD).</b> Single-item measure–Ego report	FDD and FSHD are positively associated with ego’s SI/SA. FDD, but not FSHD, and ego’s SI/SA are negatively moderated by levels of school attachment.
Eisenlohr-Moul et al., (2018) <sup>91</sup> USA Low	Prospective	Community Adolescents (n=220)	F 220 (100%) 12–16 years old (M=14.69, SD=1.37) White (64%)	<b>Suicide Ideation/ Behaviour (SIB).</b> The Self-Injurious Thoughts and Behaviours Interview (SITBI) <sup>137</sup>	<b>Psychosocial Stressor.</b> Trier Social Stressor Test (TSST) <sup>138</sup> <b>Chronic Peer Stress.</b> Child Chronic Strain Questionnaire (CCSQ) <sup>139</sup>	CORT AUCi (HPA axis stress response) moderated the relationship between elevated chronic peer stress and SIB (across 18 months). Higher-than-normal peer stress predicted suicidal behaviour only in subjects with blunted/lower CORT AUCi
Feigelman & Gorman (2008) <sup>45</sup> USA Low	Prospective	High School Adolescents (n=20,740)	M (50%) F (50%) 12-19 years old	<b>Suicide Ideation (SI).</b> Single-item measure (past 12 months) <b>Suicide Attempt (SA).</b> Single-item measure (past 12 months)	<b>Friend suicide attempt (FSA).</b> Single-item measure (past 12 months) – Ego report <b>Friend death by suicide (FS).</b> Single-item measure (past 12 months) – Ego report	FS significantly predicted ego SI and SA at 1-year follow-up; but lost significance at 6-year follow-up after controlling for other suicide risk factors
Fredrick et al., (2018) <sup>72</sup> USA Moderate	Cross-sectional	High School Adolescents (n=399)	M (50%) F (50%) 13-16 years old White-Caucasian (65%)	<b>Suicidal Ideation (SI).</b> The Suicidal Ideation Questionnaire – Junior version (IDQ-Jr) <sup>140</sup>	<b>Social Support.</b> The Child and Adolescent Social Support Scale (CASS) <sup>141</sup>	A significant interaction of classmate low support x depression on SI was observed (i.e., adolescents with high depression and low levels of classmate support reported higher SI). A significant interaction of close friend support x depression on SI for high/low levels of support (i.e., adolescents with high depression and high support reported lower SI, while those with high depression and low support reported higher SI)
Fulginiti et al., (2022) <sup>69</sup> USA Moderate	Cross-sectional	Community Young People (n=1,047)	M 754 (72%) 14-24 years old (M=21; SD=2.12) Racial/Ethnic Minority (61%)	<b>Suicidal Attempt (SA).</b> Single-item measure (past 12 months)	<b>Nominations.</b> Single-item measure (unlimited) <b>Source of Support Nominations.</b> Single-item measure (unlimited)	Homeless young people reporting a greater number of home-based friends who provided emotional support showed significantly lower odds of SA. Depression moderated the relationship at low/ high levels of depression.. Street-based friend support was negatively associated to SA among youth with low levels of trauma, but positively associated to SA among youth with high levels of trauma.

Giletta et al., (2013) <sup>85</sup> USA Low	Prospective	High school Adolescents (n=348)	M (45%) F (55%) (M=15.02, SD=0.53) White/ Caucasian (47.8%)	<b>NSSI Frequency.</b> Six-Item measure (past 6 months/ past 12 months)	<b>Nominations.</b> Single-item measure (unlimited number of best friends) <b>Friend NSSI Frequency.</b> Six-Item measure (past 6 months/ past 12 months) – Friend report	Adolescents did not select friends with NSSI nor they reported increases in NSSI when having friends with higher NSSI, i.e., no significant selection nor direct socialisation effects were observed Having friends with higher depressive symptoms and impulsivity (among boys only) was significantly related to increases in ego NSSI over time, i.e., indirect socialization
Hasking et al., (2013) <sup>46</sup> Australia Low	Prospective	High School Adolescents (n=1,973)	M 560 (28%) F 1415 (72%) 13-19 years old (M=14.9)	<b>NSSI/ Suicidal Behaviour (SB).</b> Self-harm Behavior Questionnaire (SHBQ <sup>142</sup> )	<b>Friend NSSI.</b> Three-item measure – Ego report	Adolescents reporting NSSI were significantly more likely to have at least one friend and having more friends with NSSI. Friend self-injury significantly increased the likelihood of ego reporting NSSI at follow-up, but only among group experiencing more adverse life events
Hasking et al., (2015) <sup>65</sup> Australia Low	Prospective	High School Adolescents (n=3,143)	M 844 (32%) F 1,793 (68%) 12-18 years old (M=13.93, SD=.99)	<b>NSSI/ Suicidal Behaviour (SB).</b> Self-harm Behavior Questionnaire (SHBQ <sup>142</sup> )	<b>Actual Help-seeking.</b> Actual Help-Seeking Behaviour Questionnaire (AHSQ <sup>140</sup> ) <b>General Help-Seeking.</b> General Help-Seeking Questionnaire (GHSQ <sup>135</sup> ) <b>Perceived Social Support.</b> Multidimensional Scale of Perceived Social support (MSPSS <sup>143</sup> )	68.83% of adolescents who reported NSSI sought help from friends. Adolescents who disclosed their NSSI were more likely to have and have more friends with NSSI. Disclosure to friends vs adults was related to more non-productive coping and more perceived social support from friends, which decreased over time. Disclosure to adults was related to increase in friend perceived support at T2 which stabilised at T3 and reduced severity of NSSI
Heath et al., (2009) <sup>67</sup> Canada Moderate	Case-Control	University Students (n=46)	<u>NSSI Group -</u> M 2 (9%) F 21 (91%) <u>Control Group -</u> M 3 (13%) F 20 (87%) 18-24 years old (M=20.22, SD=1.76)	<b>NSSI Frequency/ Motivations.</b> Deliberate Self-Harm Inventory <sup>144</sup>	<b>Social Support.</b> Child and Adolescent Social Support Scale (CASSS <sup>145</sup> ) <b>Social Influence.</b> Ten-item measure	Young people who self-harm reported that they talked with friends about NSSI (65%). Of those, 52% shared similar NSSI methods, 58.8% indicated that a friend had been the first to engage in NSSI and 17.4% had self-injured in front of friends. Young people not engaging in NSSI reported higher levels of friend support than those engaging in NSSI
Ivanich et al., (2022) <sup>64</sup> USA Moderate	Cross-sectional	Community Young People (n=46)	M (30%) F (70%) (M=16.33) American Indian (100%)	<b>Suicide Ideation (SI)/ Suicide Attempt (SA).</b> Cases reported to the surveillance system	<b>Nominations.</b> Single-item question (Up to 23 friends) <b>Peer Expressed Suicide.</b> Single-item question (past 6 months) – Ego report	Participants with SI report significantly fewer alters in their network who use drugs and alcohol compared with those reporting SA. Participants with SA reached to alters for help significantly more than those with SI.



Kim & Chang (2018) <sup>60</sup> South Korea Low	Prospective	High School Adolescents (n=2,643)	M (50%) F (50%) 14-15 years old	<b>Suicidality (SI).</b> Single-item measure of feeling suicidal	<b>Friends' delinquency.</b> Two-item measure	Having a higher number of delinquent peers is positively associated with SI after controlling for baseline suicidality. This relationship is stronger in neighbourhoods with higher average household income and better-quality neighbourhoods and weakened in neighbourhoods with high suicide prevalence
Kruzan et al., (2022) <sup>81</sup> USA Low	Intervention RCT	Community Young People (n=131)	M 24 (18.3%) F 89 (67.9%) Non-Binary 15 (11.5%) 16-25 years old (M=20.32, SD=2.52)	<b>NSSI Frequency.</b> The Non-Suicidal Self-Injury Assessment Tool <sup>146</sup> <b>NSSI Urges.</b> Two-item measure from the Alexian Brothers Urge to Self-injure Scale <sup>147</sup>		Participants in the intervention group (peer support app) reported significantly lower NSSI frequency and greater readiness to change their NSSI over the course of the study and at 2-month follow-up compared to controls
Lavis & Winter (2020) <sup>83</sup> UK Low	Qualitative	Online Users (n=10)	F 10 (100%) 18-24 years old	<b>Self-Harm.</b> Relevant hashtags across online platforms	Semi-structured interviews	Results identify three themes: 1) From offline to online: motivations for seeking self-harm content on social media; b) Online interactions: giving and receiving peer-support; 3) From online to offline: the value, impact and ambivalence of peer-support
Liu (2006) <sup>39</sup> China Low	Prospective	High School Adolescents (n=5,589)	M 2698 (48%) F 2891 (52%) 12-20 years old	<b>Suicidal Ideation (SI).</b> Single-item measure (past 12 months) <b>Suicidal Attempt (SI).</b> Single-item measure (past 12 months)	<b>Friend Suicidal Attempt (FSA).</b> Single-item measure (last 12 months) – Ego report	FSA significantly predicted ego SA in both boys and girls. For boys, the relationship is inversely moderated by ego depressive symptoms, i.e., the influence of FSA was stronger for boys with low or no levels of depression
Liu et al., (2022) <sup>73</sup> China Low	Prospective	High School Adolescents (n=436)	M 208 (48%) F 228 (52%) (M=12.83, SD=0.89)	<b>NSSI.</b> Deliberate Self-Harm Inventory (DSHI) <sup>144</sup>	<b>Friend Support (FS).</b> Multidimensional Scale of Perceived Social Support (MSPSS) <sup>143</sup>	FS at T1 moderated the link between maltreatment at T1 and NSSI at T3 (12-month follow-up) and between behavioural problems at T2 and NSSI at T3. FS buffered the relationship between maltreatment and NSSI while low levels of FS exacerbated the association between behavioural problems and NSSI.

Liu et al., (2023) <sup>42</sup> Taiwan Moderate	Cross-sectional	High School Adolescents (n=5,879)	M 2544 (4%) F 3335 (57%) 14-21 years old (M=5.96; SD=0.55)	<b>Suicidal Ideation (SI).</b> Single-item measure (past month) <b>Suicidal Plan (SP).</b> Single-item measure (past month) <b>Suicidal Attempt (SA).</b> Single-item measure (past month)	<b>Exposure to Peer Suicidal Ideation.</b> Single-item measure (past month)	Adolescents were mostly exposed to peers' SI i.e., received SI disclosures from peers (N=186, 93%) After adjusting for confounders, exposure to peers' SI was significantly associated with SI, SP, SA.
Mueller & Abrutyn (2015) <sup>89</sup> USA Low	Prospective	High School Adolescents (n=13,482)	M (49%) F (51%) (M=15.58) African/ American (21.3%)	<b>Suicidal Ideation (SI).</b> Single-item measure (past 12 months) <b>Suicidal Attempt (SA).</b> Single-item measure (past 12 months)	<b>Friendship Nomination.</b> Single-item measure (5 male/ 5 female best friends) <b>Friend Suicidal Attempt (FSA)/ Ideation (FSI).</b> Single-item measure (past 12 months) – Friend report <b>Friend Disclosed Suicide Attempt (FDSA)/ Death (FDSD).</b> Single-item measure (past 12 months) - Ego response)	FDSA/FDSD (but not undisclosed FSI, FSA and emotional distress) significantly predicted ego's SI and SA. FDSA and emotional distress is significantly related to ego emotional distress.
Nesi et al., (2021) <sup>80</sup> USA Low	Cross-sectional	Clinical sample of Adolescents (n=589)	M (35%)/ F (56%) Transgender (4%) Other (5%) 11-18 years old (M=14.88, SD=1.83) White (68%)	<b>Suicidal Ideation (SI).</b> The Suicide Ideation Questionnaire – Junior (SIQ-Jr) <sup>140</sup> <b>Suicide Attempt (SA).</b> Single-item measure from SITBI <sup>137</sup> <b>NSSI.</b> Single-item measure from SITBI <sup>137</sup>	<b>Online Self-Injury Activities/ Functions/ Perceived Consequences.</b> Twenty-three item measure	Sharing and viewing content related to self-injury was positively associated with history of NSSI, whereas the latter two were positively related to suicide ideation severity. Talking about self-injury with people known only online was significantly associated with history of suicide attempt.
Pitman et al., (2023) <sup>50</sup> UK Low	Cross-sectional	Community Young People (n=97)	M 12 (12%) F 80 (83%) Other 4 (4%) 18-25 years old (M=21.8, SD=2.29) White/Caucasian 74 (76%)	<b>Perceived ability to control feelings of wanting to self-harm (SH) in the next 24 hours.</b> Single-item measure from SEASA scale <sup>148</sup>	<b>Nominations.</b> Single-item measure (3 peers: 1 admired, 1 ambivalent, 1 enjoyable company)	Perceived ability to control urges to SH decreased significantly upon exposure to any vignette depicting nominated peer SH both for admired peer's SH and neutral peer SH.

Prinstein et al., (2010) <sup>48</sup> USA Low	Prospective Network	Community Adolescents (n=377)	M (50%) F (50%) 11-14 years old White/ Caucasian (86%)	<b>NSSI Frequency.</b> Single-item measure (past 12 months)	<b>Nominations.</b> Single-item measure (Unlimited number of closest friends and one very best friend)	Best friend's reported NSSI frequency at T1 was significantly associated with ego NSSI at T2 only among girls and younger students.
	Prospective	Clinical sample of Adolescents (n=140)	M 39 (28%) F 101 (72%) 12-15 years old (M=13.51, SD=0.75) White/ Caucasian 104 (74%)	<b>NSSI Frequency.</b> Five-item measure (past 12 months) <sup>149</sup>	<b>Perceptions of Friends' Depressive/ Self-injurious thoughts and behaviours.</b> Three-item measure adapted from Peer Behavior Inventory (PBI <sup>150</sup> ) – Ego report	Ego NSSI at baseline was associated with higher levels of perceptions of friends' NSSI and suicidal thoughts/behaviours at 9-month follow-up which was associated with ego NSSI at 18-month follow-up only among girls.
Randall et al., (2015) <sup>40</sup> Canada Low	Prospective	High School Adolescents (n=4,834)	M (50%) F (50%) 11-20 years old	<b>Suicidal Attempt (SA).</b> Single-item measure (past 12 months)	<b>Friend Suicidal Attempt (FSA).</b> Single-item measure (past 12 months) – Ego report	Exposure to FSA was significantly associated with ego SA at baseline and 1-year follow-up.
Schlagbaum et al., (2021) <sup>41</sup> USA Low	Case-control	Clinical sample of Adolescents (n=118)	M (27%)/F (73%) 13- 18 years old (M=15.41, SD=1.39) White/ Caucasian (67.8%)	<b>Suicidal Ideation (SI)/ Attempt (SA).</b> Columbia University Suicide History Form (SHF <sup>151</sup> )	<b>Nominations.</b> Single-item measure (Up to five closest friends) <b>Peer engagement in deviant/prosocial/ suicidal behaviour/ substance use.</b> Peer Behaviour Inventory <sup>150</sup> – Ego report	Affiliation with peers with suicidal ideation and attempts was only significantly related to ego SA (but not SI) after controlling for individual risk-factors.
Schwartz-Mette & Lawrence (2019) <sup>86</sup> USA Low	Prospective	Community Adolescents (n=186)	M 56 (30%) F 130 (70%) 13-18 years old (M=15.68, SD=1.49) White/Caucasian 163 (87.6%)	<b>NSSI Frequency.</b> Seven-item measure adapted <sup>149</sup>	<b>Friendship Status.</b> Single-item measure <b>Friendship Quality.</b> Revised Friendship Quality Questionnaire (FQQ <sup>152</sup> )	Friends' NSSI frequency at T1 and T2 significantly predicted ego NSSI frequency at T2 and T3 respectively (i.e., direct socialization effects) after controlling for similarity effects. Socialisation effects of NSSI were moderated by ego emotion regulation difficulties (only at T1 for high levels of emotion regulation difficulties).
Snir et al., (2017) <sup>76</sup> Israel Moderate	Prospective	High School Adolescents (n=1,285)	At Baseline M 1,023(80%) F 233 (18%) 14-17 years old (M=15.9, SD=.76) Jewish (74.4%)	<b>NSSI.</b> Deliberate Self-Harm Inventory (DSHI <sup>144</sup> )	<b>Peer Support.</b> 10-item measure	Negative linear association between perceived PS and NSSI was found was mediated by negative affect (NA). A positive quadratic association between perceived PS and NSSI was observed. PS moderated the relationship between NSSI and NA. For low PS, increases in NSSI predicted increases in NA. For high PS, increases in NSSI predicted decreases in NA.

Swanson & Colman (2013) <sup>43</sup> Canada Low	Prospective	High School Adolescents (n=22,064)	M (50%) F (50%) 12-17 years old	<b>Suicidal Ideation (SI).</b> Single-item measure (past month) <b>Suicidal Attempt (SA).</b> Single-item measure (past year)	<b>Schoolmate Suicidal Attempt (SSA).</b> Single-item measure - Ego report <b>Known Peer Suicidal Attempt (KPSA).</b> Single-item measure - Ego report	14.2-15.3% of exposed adolescents reported SI, while 5.3-7.5% reported SA. Exposure to a SSA was associated with ego SI/SA, while exposure to KPSA was associated with ego SA. There was a significant interaction between a previous stressful life event and schoolmate's suicide in predicting SI/SA at 2-year follow-up.
Syed et al., (2020) <sup>47</sup> Canada Moderate	Cross-sectional	Adolescents (n=1,483)	M 740 (50%) F 743 (50%) 14-17 years old	<b>NSSI.</b> Single-item measure (past 12 months) <b>Suicidal Ideation (SI).</b> Single-item measure (past 12 months) <b>Suicidal Attempt (SA).</b> Single-item measure (past 12 months)	<b>Friends NSSI.</b> Single-item measure- Ego report	Knowledge of friends' NSSI positively associated with ego NSSI, SI and SA.
Tseng & Yang (2015) <sup>70</sup> Taiwan Low	Cross-sectional	High school students (n=391)	M (45%) F (55%) 12-18 years old Minnan (80%)	<b>NSSI.</b> The Self-injurious Thoughts and Behaviors Interview (SITBI) <sup>137</sup>	<b>Perceived Social Support.</b> The Multidimensional Scale of Perceived Social Support (MSPSS) <sup>143</sup> <b>Internet Platform Utilization and Web Communication Network.</b> Twenty-item measure	Higher web communication was significantly associated with all forms of self-injurious behaviours (suicidal ideation, planning, gestures and attempts, NSSI and NSSI thoughts) among boys only. Friend support protected against suicide planning among girls only.
Tyler et al., (2022) <sup>75</sup> USA Low	Intervention	Young People in residential program (n=1,118)	M 693 (63%) F 410 (37%) 12-19 years old (M=15.97, SD=1.15) White/ Caucasian (46.6%)	<b>Suicide Risk.</b> The Suicide Probability Scale (SPS) <sup>153</sup> <b>Suicidal Ideation Incidents.</b> Daily Incident Report (DIR) <sup>154</sup>		Peer relations training moderated the relationship between trauma symptoms at intake and suicide ideation while in care i.e., the relationship between trauma symptoms and suicide ideation was stronger for those not receiving peer relations training.
Victor & Klonsky (2018) <sup>49</sup> USA Moderate	Cross-sectional	High School Adolescents (n=89)	M 29 (33%) F 60 (67%) 13-17 years old White/Caucasian (53%)	<b>NSSI.</b> Eight-item measure <b>NSSI Functions.</b> The Self-Injurious Thoughts and Behaviours Interview (SITBI) <sup>137</sup>	<b>Friend NSSI (FNSSI).</b> Three-item measure - Ego report <b>NSSI Social Characteristics.</b> Four-item measure	71.60% of adolescents who reported NSSI also reported having friends with NSSI. Females were significantly more likely to report FNSSI Knowledge of FNSSI was significantly related to using more NSSI methods, ego cutting, and serious suicidal ideation.

Wei et al., (2021) <sup>57</sup> China Moderate	Cross-sectional	High School Adolescents (n=854)	M 269 (32%) F 585 (68%) (M=16.35, SD=1.15) Chinese (100%)	<b>NSSI.</b> Non-suicidal Self-Injury Scale <sup>155</sup>	<b>Deviant Peers.</b> Deviant Peer Affiliation Scale	Deviant peer affiliation, ego depression and sensation-seeking were positively associated with ego NSSI. Depression partially mediated the association between deviant peer affiliation and NSSI.
Wei et al., (2022) <sup>58</sup> China Moderate	Cross-sectional	High School Adolescents (n=854)	M 269 (32%) F 585 (68%) (M=16.35, SD=1.15) Chinese (100%)	<b>NSSI.</b> Non-suicidal Self-Injury Scale <sup>155</sup>	<b>Social Characteristics of self-harm.</b> Seven-item measure	Deviant peer affiliation positively predicted ego NSSI and partially mediated the pathway between stressful life events and ego NSSI. Gratitude moderated the association between deviant peer affiliation and ego NSSI (only for individuals with lower gratitude).
Winterrowd et al., (2010) <sup>61</sup> USA Moderate	Cross-sectional	Community Adolescents (n=338)	M 151 (45%) F 187 (55%) 14-19 years old (M=16.51, SD=1.15) Mexican American (100%)	<b>Suicidal Ideation (SI).</b> Single-item measure (past 12 months) <b>Suicidal Attempt (SA).</b> Single-item measure (past 12 months)	<b>Friendship Quality.</b> Six-item measure <sup>156</sup> <b>Friends' School Disconnection.</b> Seven-item measure <sup>156</sup> <b>Friends' Delinquency.</b> Nine-item measure <sup>156</sup>	Friends' school disconnectedness significantly predicted ego SI only among girls in good academic standing.
Winterrowd et al., (2011) <sup>63</sup> USA Moderate	Cross-sectional	Community Young People (n=648)	M (47%) F (53%) 14-20 years old (M=16.58, SD=1.12) Mexican American 338 (52%)/ European-American 310 (48%)	<b>Suicidal Ideation (SI).</b> Single-item measure (past 12 months) <b>Suicidal Attempt (SA).</b> Single-item measure (past 12 months)	<b>Friendship Quality.</b> Six-item measure <sup>156</sup> <b>Friends' School Disconnection.</b> Seven-item measure <sup>156</sup> <b>Friends' Delinquency.</b> Nine-item measure <sup>156</sup>	Friends' school disconnectedness significantly predicted ego SI among Mexican American girls. Friends' delinquency significantly predicted SA among European American girls and boys. These effects lost significance after controlling for risk and protective factors.
Winterrowd & Canetto (2013) <sup>62</sup> USA Moderate	Prospective	Community Adolescents (n=295)	M (41%) F (59%) 14-20 years old (M=16.50, SD=1.15) Mexican American (59%) European-American (41%)	<b>Suicidal Ideation (SI).</b> Single-item measure (past 12 months) <b>Suicidal Attempt (SA).</b> Single-item measure (past 12 months)	<b>Friendship Quality.</b> Six-item measure <sup>156</sup> <b>Friends' School Disconnection.</b> Seven-item measure <sup>156</sup> <b>Friends' Delinquency.</b> Nine-item measure <sup>156</sup>	Friends' school disconnectedness significantly predicted ego SI (among European American adolescents) and SA (among Mexican American boys). These relationships were fully and partially mediated by depression respectively.

Wyman et al., (2019) <sup>56</sup> USA Low	Cross-sectional	High School Adolescents (n=10,716)	M (51 %) F (49%) 15-19 years old White/Caucasian (79%)	<b>Suicidal Thoughts and Behaviours.</b> The Youth Risk Behavior Survey <sup>157</sup>	<b>Nominations.</b> Single-item measure (Up to 7 closest friends)	Higher ego SA and ideation rates were significantly more likely in schools with low peer integration and cohesion (fewer friends, nominations were concentrated in fewer students and lower transitivity). Schools with higher SA rates were also characterised by students with suicide thoughts and behaviours having a higher relative popularity and are clustered.
You et al., (2013) <sup>84</sup> China Low	Prospective	High School Adolescents (n=5,787)	M (46%) F (54 %) 12-18 years old (M=14.63, SD=1.25)	<b>NSSI.</b> Seven-item measure (past 6 months)	<b>Nominations.</b> Single-item measure (Up to 5 close friends) <b>Friend NSSI (FNSSI).</b> Seven-item measure (past 6 months) – Friend report	Best friend's NSSI at T1 significantly predicted ego NSSI at T2 (i.e., socialization effects) but not NSSI frequency/onset. Ego NSSI at T1 did not significantly predict having a best friend with NSSI at T2 (i.e., no selection effects). Friendship group NSSI at T1 did not significantly predict ego NSSI (i.e., no socialization effects). Ego NSSI at T1 significantly predicted friendship group NSSI status (i.e., selection effects) but not ego onset
You et al., (2016) <sup>87</sup> China Low	Prospective	High School Adolescents (n=1,701)	M 554 (33%) F 1147 (67%) (M=15.06, SD=1.4)	<b>NSSI.</b> Seven-item measure (past 6 months)	<b>Nominations.</b> Single-item measure (Up to 5 close friends) <b>Friend NSSI (FNSSI).</b> Seven-item measure (past 6 months) – Friend report	Friendship group NSSI at T1 significantly predicted ego NSSI at T2 (i.e., direct socialisation effects). Friendship group negative urgency at T1, but not premeditation, significantly and positively predicted ego NSSI at T2. Friendship group premeditation negatively moderated the association between ego depression and NSSI; whereas friendship group negative urgency positively moderated the relationship.
Zimmerman et al., (2016) <sup>90</sup> USA Moderate	Cross-sectional	High School adolescents (n=2,180)	M 1141 (52%) F 1039 (48%) 14- 20 years old (M=17.2, SD=1.1) White 979 (45.0%)	<b>Suicidal Attempt (SA).</b> Single-item measure (past 12 months)	<b>Perceived friends' suicide attempt.</b> Single-item measure – Ego Report <b>True friends' Suicide Attempt.</b> Single-item measure – Friend Report	Ego perceptions of friends' SA, but not friends' true SA, significantly predicted ego SA. Ego accurate or overestimation of friends' SA was significantly related to ego SA.

**Table 2:** Characteristics of included studies of friends and peers of young people with self-harm ideation and behaviour (i.e., friends)

Authors/ Location/ Quality	Study Design	Population		Measures		Results
		Source	Demographic Information	Outcome Variables	Friendship Variables	
Abbott & Zakriski (2014) <sup>108</sup> USA Moderate	Case-Control	Community Young People (n=152)	<u>Exposed Group</u> M 20 (23%)/F 65 (77%) (M=21.2, SD=.44) White/Caucasian (91%) <u>Non-Exposed Group</u> M 25 (37%)/F 38 (57%) (M=21.5, SD=.44) White/Caucasian (87%)	<b>Grief.</b> Texas Revised Inventory of Grief (TRIG <sup>158</sup> ) <b>Attitudes Toward Suicide</b> Scale (ATTS <sup>159</sup> ) <b>Stigma Toward Suicide.</b> Six-item measure	<b>Closeness Questionnaire.</b> Two-item measure <b>Perceived Social Support.</b> Multidimensional Scale of Perceived Social Support (MSPSS <sup>143</sup> )	Number of and closeness to peers lost to suicide was associated with past and present grief. A significant interaction of closeness, peer support and grief was found. Social support from friends related to more grief among those closer to peers who died by suicide, but less grief for those who were less close.
Bartik et al., (2013) <sup>111</sup> Australia Moderate	Qualitative	Community Young People (n=10)	M 2 (20%)/F 8 (80%) (M=24, SD=3.43)* *16 to 24 years at time of suicide (M=19.3,SD=2.58)	In depth-interviews		Four themes were identified: a) Meaning Making of their friends' death; b) Feeling Guilt; c) Risky Coping Behaviour and d) Relating to friends
Bartik et al., (2015) <sup>103</sup> Australia High Moderate	Mixed Methods	Community Young People (n=18)	M 7 (39%) F 11 (61%) 14-23 years old (M=17.27, SD=2.54)	Semi-structured interviews	<b>Suicide Stigma.</b> The Stigma of Suicide Scale (SOSS <sup>160</sup> )	<b>Closeness with suicidal peer.</b> Determined by author from interview content Three themes reflected the perspectives of suicide stigma of young people bereaved from friend suicide: 1) community reluctance to discuss suicide 2) stigma that prevents young people from asking for support and 3) talking about suicide is easier in a peer group. Quantitative findings suggest that bereaved friends rated items on the stigma scale (immoral, unjust, unjustifiable), the glorification/ normalisation scale (committed) and the depression/loneliness scale (broken) significantly higher while (alienated) was rated significantly lower.
Berger et al., (2017) <sup>92</sup> Australia Moderate	Qualitative	High School Adolescents (n=2,637)	M 848 (32%) F 1789 (68%) 12–18 years old (M=13.93, SD=1.00) Australian (89.3%)	<b>NSSI.</b> Self-Harm Behavior Questionnaire (SHBQ <sup>142</sup> ) Two open-ended questions	<b>Offline/Online Friends Helping Behaviour.</b> Two-item open-ended measure <b>Friend NSSI Ideation/ Behaviour.</b> Two-item measure	Adolescents identified that offline/online friends could help young people who self-injure mainly by talking, listening and referring them to adults and health professionals. Befriending others, reducing bullying and stigma and increasing public awareness of NSSI were also identified.
Bilello et al., (2024) <sup>20</sup> UK Low	Qualitative	University Students (n=9)	F 9 (100%) 18-20 years old (M=18.78, SD=0.83)	Semi-structured interviews		Four themes were developed to reflect the experiences of friend supporting a peer who self-harmed: 1) "I did not realize my friend was on the road to self-harm": Friends' reactions to self-harm; 2) "That's what friends do": the role of friends; 3) The impact of supporting a friend who self-harms; and 4) "They were quite formative years": reflecting on growth through the experience

Brent et al., (1992) <sup>51</sup> USA Moderate	Case-Control	Community Young People (n=116)	<u>Exposed Group</u> M 32 (55%)/F 26 (45%) (M=17.7, SD=2.6) White/Caucasian (97%) <u>Control Group</u> M 32 (55%)/F 26 (45%) (M=17.1, SD=1.7) White/Caucasian (100%)	<b>Past/Current Psychiatric Disorders.</b> School-age Schedule for Affective Disorders and Schizophrenia, present/ epidemiologic (K-SADS-P/E <sup>161</sup> ) <b>PTSD.</b> Post-Traumatic Stress Disorder Reaction Index (PTSD-RI <sup>162</sup> ) <b>Grief.</b> Texas Revised Grief Inventory (TRGI <sup>158</sup> )	<b>Characteristics of Exposure.</b> Characteristics and Exposure to Death (CED <sup>51</sup> ) <b>Closeness of Relationship.</b> Adolescent Relationship Inventory (ARI <sup>51</sup> )	The exposed group showed a significantly higher rate of new onset or exacerbation of any psychiatric disorder 6-months after their peer's suicide death, mainly MDD and substance abuse but not suicidality. Closeness to the victim was associated with higher severity of new-onset depression, grief and PTSD.
Brent et al., (1993a) <sup>104</sup> USA Moderate	Case-Control	High School Adolescents (n=56)	<u>Exposed Group</u> M 15 (54%) / F 13 (46%) (M=15.8, SD=1.1) White/Caucasian (96%) <u>Control Group</u> M 15 (54%) / F 13 (46%) (M=16.1, SD=2.0) White/Caucasian (100%)	<b>Past/ Current Psychiatric Disorders.</b> K-SADS- P/E <sup>161</sup> <b>PTSD.</b> PTSD-RI <sup>162</sup> <b>Grief.</b> TRGI <sup>158</sup>	<b>Characteristics of Exposure.</b> CED <sup>51</sup> <b>Closeness of Relationship.</b> ARI <sup>51</sup>	Exposed adolescents showed significantly higher rates of depressive symptoms and higher rates and new-onset of any psychiatric disorder and anxiety disorder, compared to controls. Dimensions of closeness to the suicide victim of exposed subjects significantly correlated with PTSD symptoms and grief.
Brent et al., (1993b) <sup>106</sup> USA Moderate	Cross-sectional	Community Young people (n=146)	M 79 (54%) F 67 (46%) (M=18.4, SD=2) White/Caucasian (97%)	<b>Past/ Current Psychiatric Disorders.</b> K-SADS- P/E <sup>161</sup> <b>PTSD.</b> PTSD-RI <sup>162</sup> <b>Depression.</b> Beck Depression Inventory (BDI <sup>163</sup> ) <b>Grief.</b> TRGI <sup>158</sup>	<b>Characteristics of Exposure.</b> CED <sup>51</sup> <b>Closeness of Relationship.</b> ARI <sup>51</sup>	Adolescents with new-onset depression and depression prior to exposure did not significantly differ. Both experienced significantly more PTSD than the non-depressed group. Adolescents with new-onset depression showed significantly higher a) levels of grief, b) closeness to the victim and c) intensity of exposure
Brent et al., (1993c) <sup>44</sup> USA Moderate	Case-Control	Community Young people (n = 292)	<u>Exposed Group</u> M 79 (54%) / F 67 (46%) (M=18.4, SD=2) White/Caucasian (97.2%) <u>Control Group</u> M 79 (54%) / F 67 (46%) (M=17.5, SD=1.7) White/Caucasian (100 %)	<b>Past/ Current Psychiatric Disorders.</b> K-SADS-P/E <sup>161</sup> <b>PTSD.</b> PTSD-RI <sup>162</sup>		The exposed group was significantly more likely to present with past/new-onset or exacerbation of major depression disorder, PTSD and substance abuse and higher suicidality compared to controls. Friends exposed to suicide showed significantly higher rates of new-onset depression than acquaintances.
Brent et al., (1994) <sup>105</sup> USA Moderate	Prospective Case-Control	Community Young people (n = 292)	<u>Exposed Group</u> M 79 (54%) / F 67 (46%) (M=18.4, S D=2) White/Caucasian (97.2%) <u>Control Group</u> M 79 (54%) / F 67 (46%) (M=17.5,SD=1.7) White/Caucasian (100 %)	<b>Past/ Current Psychiatric Disorders.</b> K-SADS-P/E <sup>161</sup> <b>Grief.</b> TRGI <sup>158</sup>	<b>Exposure to suicide.</b> CED <sup>51</sup> <b>Closeness of Relationship.</b> ARI <sup>51</sup>	At 12-18 month follow-up, the exposed group was significantly more likely to present current substance abuse and current and new-onset of any psychiatric disorder, major depression, and generalized anxiety disorder, but not PTSD, compared to controls. Rates of MDD were highest among those who were depressed prior to exposure followed by those who were depressed after exposure.



Brent et al., (1995) <sup>52</sup> USA Moderate	Cross-sectional	Community Young people (n=146)	M 79 (54%) / F 67 (46%) (M=18.4, SD= 2) White/ Caucasian (97.2 %)	<b>Past/ Current Psychiatric Disorders.</b> K-SADS-P/E <sup>161</sup> <b>PTSD Symptoms.</b> PTSD-RI <sup>162</sup> <b>Grief.</b> TRGI <sup>158</sup>	<b>Exposure to suicide.</b> CED <sup>51</sup> <b>Closeness of Relationship.</b> ARI <sup>51</sup>	Exposed peers who developed PTSD were more likely to report higher intensity of exposure to suicide, have a closer relationship to the victim, have higher rates of past and current psychiatric disorders (especially MDD), grief and suicidality compared to exposed peers without PTSD.
Brent et al., (1996) <sup>53</sup> USA Moderate	Prospective Case-Control	Community Young people (n=341)	<u>Exposed Group</u> M (51%) / F (49%) (M=21.2, SD=1.8) White/Caucasian (96.4%) <u>Control Group</u> M (55%) / F (45%) (M=20.4, SD=1.8) White/Caucasian (99.4%)	<b>Past and Current Psychiatric Disorders.</b> K-SADS-P/E <sup>161</sup>	<b>Closeness of Relationship.</b> ARI <sup>51</sup>	Exposure to a peer's suicide was significantly related to higher rates of any psychiatric disorder and of new-onset major depression, generalized anxiety disorder and PTSD at 3-year follow-up. No differences in suicide attempts were observed. Knowing the suicide victim was intending to die significantly predicted new-onset major depression and PTSD.
Bridge et al., (2003) <sup>107</sup> USA Low	Prospective Case-Control	Community Young People (n=274)	<u>Exposed Group</u> M (54%) / F (46%) (M=18.2, SD=2.1) White/Caucasian (97.2 %) <u>Control Group</u> M (54%) / F (46%) (M=17.5, SD=1.8) White/Caucasian (100 %)	<b>Past and Current Psychiatric Disorders.</b> K-SADS-P/E <sup>161</sup>	<b>Exposure to suicide.</b> CED <sup>51</sup>	Exposure to a peer's suicide was significantly related to the development of major depressive disorder (MDD) at 1-month follow-up. This appeared to be mediated by past history of alcohol abuse. Contact with the victim within 24 hours prior to the death and feelings of accountability significantly predicted new-onset MDD.
Cerel et al., (2005) <sup>38</sup> USA Low	Cross-sectional	High School Adolescents (n=5,852)	M 2807 / F 3045 11-18 years old White/Caucasian 3757 (64.20%)	<b>Suicidal Ideation (SI).</b> Single-item question for each (past 12 months) <b>Suicidal Attempt (SA).</b> Single-item question for each (past 12 months) <b>Smoking/ Marijuana use/ Drinking/ Involvement in Physical Fight/ Infliction of Injuries /Chance of living &gt;35 years.</b> Single-item question for each	<b>Friend Suicidal Ideation (FSI).</b> Single-item question (past 12 months) <b>Friend Suicidal Attempt (FSA).</b> Single-item question (past 12 months) <b>Friend Suicide Death (FSD).</b> Single-item question (past 12 months)	Exposure to FSA and FSD was significantly related to higher rates of smoking, marijuana use, binge drinking, involvement in a serious physical fight, inflicting injuries and SI//SA Exposure to a FSD was significantly related to reporting own SA and to have been in a physical fight.

Cha et al., (2018) <sup>119</sup> Korea Low	Intervention	High School Adolescents (n=956)	M 450 (47%) F 506 (53%) <u>Non-Trauma Group</u> (M=16.9, SD= 0.8) <u>Trauma Group</u> (M=17.1, SD= 0.8)	<b>PTSD Symptoms.</b> Child Report of Post-traumatic Symptoms(CROPS <sup>164</sup> ) <b>PTSD.</b> The UCLA PTSD Reaction index (UCLA-PTSD-RI <sup>165</sup> ) <b>Anxiety Symptoms.</b> The Korean-Beck Anxiety Inventory (K-BAI <sup>166</sup> ) <b>Depressive Symptoms.</b> The Korean-Beck Depression Inventory-II (K-BDI-II <sup>167</sup> ) <b>Complicated Grief.</b> The Inventory of Complicated Grief (ICG <sup>168</sup> )	A statistically significant decline in PTSD symptoms, anxiety, depression and complicated grief was observed in the “trauma group” compared to the “non-trauma group” at five-month follow-up of a postvention for adolescents exposed to a friend’s suicide.
Eskin (1999) <sup>93</sup> Sweden Moderate	Cross-sectional	High School Adolescents (n=254)	<u>Swedish Group</u> M (55%)/ F (45%) 16-20 years old (M=17.2, SD = 0.9) <u>Turkish Group</u> M (51%)/ F (49%) 14-18 years old (M=16.1, SD= 0.8)	<b>Reactions to friend suicide disclosure.</b> 20-item measure <b>Suicide Ideation (SI).</b> Single-item measure (past 12 months)	Significant differences were observed on social acceptance of suicide (higher in Swedish, females, SI), disapproval of disclosure (higher in Swedish, males, no SI), emotional involvement (no personal experience, Turkish), taking responsibility (Turkish) and inviting/ contacting a suicidal peer (females)
Fisher et al., (2017) <sup>98</sup> New Zealand Low	Qualitative	High school adolescents (n=5)	F 5 (100%) 15 years old (M=15, SD =.00) European/ New Zealand European (100%)	Semi-structured Interviews	Four super-ordinate themes were identified regarding providing support to a peer who self-injures: 1) Helping Responses, 2) NSSI and Relationships, 3) The costs of caring and 4) Supporter needs.
Gayfer et al., (2020) <sup>99</sup> Canada Moderate	Qualitative	University Students (n=104)	M 17 (16%) F 87 (84%) 17–22 years old (M=18.29, SD=0.8) White/Caucasian 73 (70%)	<b>Experience of peer NSSI Disclosure.</b> Four-item open-ended measure Open-ended survey questions	Four themes were identified to describe Individuals’ experiences of a friend’s NSSI disclosure: 1) Intense emotional reactions, 2) Supportive responding; 3) Impact on peer relationship; and 4) Perceived insight about NSSI
Gleason et al., (2022) <sup>117</sup> USA Moderate	Intervention	High School Adolescents (n=244)	M 112 (46%) F 131 (54%) Transgender 1 (0.4%) (M= 16.21, SD=1.74) White/Caucasian (61%)	<b>Referral Intentions.</b> The Planned Behavior and Implementation Questionnaire (PBIQ <sup>169</sup> )	Adolescents participating in the Signs of Suicide (SOS) suicide prevention programme showed a significant increase in intentions to refer peers displaying covert suicide cues (specifically depression, hopelessness and wish to keep depression/hopelessness a secret) from pre- to post-intervention. Intentions to refer peers displaying overt cues (e.g., disclosure of suicidal plan, sending goodbye message) remain stable.

Gould et al., (2018) <sup>54</sup> USA Low	Case-Control	High School Adolescents (n=5,284)	M (58%) / F (42%) (M=15.5 years old) White/Caucasian (87%) – Exposed group White/Caucasian (77.7%) – Control group	<b>Depression.</b> The Beck Depression Inventory (BDI) <sup>163</sup> <b>Suicidal Ideation (SI).</b> Eight-item and six-item measure <b>Suicidal Behaviour (SB).</b> Six-item measure <b>Suicide Attitudes.</b> Eighteen-item measure	<b>Friendship with suicide decedent.</b> Four-item measure	No significant differences were found between exposed and non-exposed students on SI, SB and depression. A significant positive interaction between exposure, negative life events and SB was found. Closeness was significantly related to depression, maladaptive coping and SI/SB. The risk for the latter was stronger among friends, but not close friends.
Hall & Melia (2022) <sup>100</sup> UK Low	Qualitative	Community Adolescents (n=8)	F 8 (100%) 13-18 years old M=15.5	Semi-Structured Interviews		Four superordinate themes were developed in relation to adolescent sense-making of their friends' self-harm: 1) Desperately Searching for meaning, 2) I will be there at all costs, 3) Too hot to handle and 4) Identification
Hart et al. (2020) <sup>118</sup> Australia Moderate	Intervention	High School Adolescents (n=1,605)	M 887 (55%) F 718 (45%) 15-17 years old (M=15.87, SD=0.52)	<b>Recognition of Suicidality.</b> One-item open-ended measure <b>Adequate Suicide First Aid Response.</b> Four-item measure <b>Transient Distress.</b> One-item measure and open questions		Students in the mental health intervention (tMHFA) group recognised suicidality, reported more adequate first aid responses and less negative responses significantly more than students in the physical activity intervention group (PFA), at post-training and 12-month follow-up. Students in the tMHFA group reported short-lived distress associated with the content of the intervention.
Hazell & Lewin (1993) <sup>37</sup> Australia Moderate	Case-Control	High School Adolescents (n=798)	M 364 (46%) F 434 (54%) (M=14.74)	<b>Problem Behaviour.</b> Behaviour Scale of the Youth Self-Report (YSR) <sup>170</sup> <b>Risk Behaviour.</b> Risk Behaviour Questionnaire (RBQ) <sup>171</sup> <b>Suicidal Ideation and Suicidal Behaviour (SI/SB).</b> Single-item measure <b>Drug/ Alcohol Consumption.</b> Ten-item measure	<b>Proximity to Attempted/ Completed Suicide Peer.</b> One-item measure	Friends of suicide attempters and completers group (AC) showed significantly more previous and current suicidal ideation and behaviour, problem behaviours, delinquency and use of drugs than the low exposure group (L), the friends of suicide completers only group (C) and the suicide attempters only group (A). Friends of suicide attempters only (A) reported significantly more current suicide behaviour than the low-exposure group
Ho et al., (2000) <sup>36</sup> China Low	Case-Control	High School Adolescents (n=2,704)	M 1411 (52%) F 1293 (48%) (M=15.83)	<b>Psychiatric Disturbances.</b> Youth Self-Report (YSR) <sup>170</sup> <b>Drug Use.</b> Self-Report Drug Use <sup>172</sup> <b>Suicidal Behaviour.</b> One-item measure	<b>Relationship to suicide attempters/ completers.</b> One-item measure and 10-item measure <b>Recent Exposure to Suicides.</b> One-item measure.	Peers of suicide attempters and completers had higher risk of psychiatric disturbances and suicidal ideation and behaviour compared to controls. The former presented the highest risk. Closeness to the suicide attempter and to the suicide completer were significantly related to suicidal ideation/behaviour, as well as being related to externalising and internalising problems respectively.

Hu et al., (2023) <sup>110</sup> China Moderate	Cross-sectional	University Students (n=153)	M 37 (24%) F 116 (76%) 18-25 years old (M=20.09, SD=1.34) Han ethnicity 147 (96%)	<b>Self-rated mood.</b> 6-item measure <b>Facial Expressions.</b> Micro-expressions (Noldus Facereader 7.1) <b>Helpfulness of advice.</b> Independent rating to single-item measure <b>Pattern of advice.</b> Independent rating to single-item measure	<b>Exposure to hypothetical suicidal peer.</b> Two scenarios.	Learning about a hypothetical peer suicidal ideation significantly reduced the helpfulness of the advice given to them. Learning about a hypothetical peer suicidal ideation significantly increased self-reported sadness and fear and reduced real-time facial expressions of happiness when typing the advice.
Kalafat & Elias (1992) <sup>94</sup> USA Moderate	Cross-sectional	High School Adolescents (n=325)	M 160 (49%) F 165 (51%) 14-17 years old Predominantly White/Caucasian	<b>Response to hypothetical suicidal peer.</b> Single-item open-ended measure	<b>Knowing friend who attempted and who died by suicide.</b> Single-item question <b>Talking to friend with suicidal ideation.</b> Two-item question	Females were significantly more likely than males to know and talk to peers with suicidal thoughts and behaviours. Personal experience with suicidal peers was significantly related more evenly distributed responses towards peers (talking to them, telling an adult, doing nothing) compared to those without such experience who mainly reported they would talk to their friend.
Kalafat & Elias (1994) <sup>114</sup> USA Moderate	Intervention	High School Adolescents (n=253)	M 144 (57%) F 109 (43%) 15-16 years old	<b>Response to hypothetical suicidal friend.</b> 11-item measure across two hypothetical scenarios	<b>Friend suicide attempt.</b> Single-item measure <b>Friend suicide behaviour.</b> Single-item measure	Students in the intervention group were significantly more likely to a) tell a friend about a hypothetical suicidal peer in the ambiguous vignette b) to suggest their friend to call a hotline and get advice from another friend, and less likely to suggest calling a mental health centre in the unambiguous vignette. 64% of students suggested intervention would help them dealing with their friends' problems.
Kalafat & Gagliano (1996) <sup>115</sup> USA Moderate	Intervention	High School Adolescents (n=109)	M 63 (58%) F 46 (42%) 13-14 years old White/Caucasian (100%)	<b>Response to hypothetical suicidal friend.</b> Three-item measure in two hypothetical scenarios		Females expressed significantly greater concern than males and students exposed to the suicide curriculum were significantly more likely to report 'telling others' responses across both high and low ambiguity vignettes.
Melhem et al. (2004) <sup>109</sup> USA Moderate	Prospective	Community Young People (n=146)	M (55%) F (45%) 11-23 years old (M =18.3, SD=2.2)	<b>Traumatic Grief.</b> The Texas Revised Inventory of Grief <sup>158</sup> <b>Complicated Grief.</b> Inventory of Complicated Grief <sup>168</sup> <b>Major Depression.</b> K-SADS-E/P <sup>161</sup> <b>PTSD.</b> PTSD-RI <sup>162</sup>		Traumatic grief at 6 months after a peer's suicide predicted depression and PTSD at 12-18 months. Traumatic grief at 12-18 months predicted depression at 36 months.

Mirick & Berkowitz (2022) <sup>112</sup>	Qualitative	Community Young People (n=13)	M 2 (15%) F 10 (77%) Non-Binary 1 (8%) (M=21.8, SD=2.52) White/Caucasian 11 (84%) LGBTQ+ 7 (54%)	Semi-structured interviews		Three themes emerged about responses to the suicide death of a peer: 1) affective responses, 2) suicide death as impactful and 3) entitlement to grief. Four them reflect young people views' regarding school-based postvention services were identified: 1) support for grieving, 2) support from caring adults, 3) psychoeducation about frieg and suicide and 4) opportunities to commemorate the deceased
Mirick & Berkowitz (2023) <sup>113</sup>	Qualitative	Community Young People (n=13)	M 2 (15%) F 10 (77%) Non-Binary 1 (8%) (M=21.8, SD=2.52) White/Caucasian 11 (84%) LGBTQ+ 7 (54%)	Semi-structured interviews		Four themes were identified to represent participants' experiences of processing the suicide death of a peer: 1) the impact of the death, 2) sense-making, 3) meaning-making and 4) negative meaning making
Muehlenkamp & Hagan (2020) <sup>97</sup>	Cross-sectional	University Students (n=420)	M 122 (29%) F 297 (70%) Transgender 1 (1%) 18-24 years old (M=19.61,SD=1.5) White/Caucasian (93%)	<b>Behavioural Intentions.</b> Two-item measure <b>Perceived Behavioural Control.</b> Six-item measure	<b>Perceived risk.</b> Three-item measure <b>Perceived locus of responsibility for suicide.</b> One-item measure	Participants' subjective norms were associated with intent to ask about suicide, while participants' attitudes towards suicide were associated with intent to refer friend to support services. Perceptions of high risk were significantly associated with higher intention to refer friend to support services (regardless of perceived control) and to ask about suicide (only when perceived control was high). When perceptions of risk and perceived control were low, participants were less likely to refer for or ask about suicide.
Mueller & Waas (2002) <sup>95</sup>	Cross-sectional	University Students (n = 334)	M 182 (55%) F 152 (45%) 18-19 years old (M=18.41) European American (70%)	<b>Attitudes about suicide.</b> Suicide Opinion Questionnaire (SOQ <sup>173</sup> ) <b>Response to suicidal peer.</b> Suicide Helpfulness Scale (SHS <sup>174</sup> )	<b>Hypothetical scenario with a suicidal peer.</b> Two scenarios <b>Perception of suicide seriousness.</b> 5-item scale	Young people were significantly more likely to take more seriously, to inform others and to provide direct assistance to a suicidal friend in the behavioural scenario (e.g., giving away prized possessions, risk-taking). They were significantly more likely to engage in distraction in the affective scenario (e.g., depression, loneliness). High empathy/ female participants were significantly more likely to engage in verbal interactions and direct assistance.
Norton et al., (1989) <sup>96</sup>	Cross-sectional	High School Adolescents (n=120)	M 53 (44%) F 67 (56%) 15-18 years old	<b>Response to suicide.</b> Suicide Intervention Response Inventory adapted <sup>175</sup> <b>Knowledge towards suicide.</b> 30-item measure <b>Attitudes towards suicide.</b> 11-item measure	<b>Previous experience with a suicidal person.</b> Single-item measure	Adolescents exposed to a hypothetical suicidal peer held statistically significant more negative attitudes towards suicidal behaviour. Having more negative attitudes towards suicide was significantly related to lower ability to respond to a hypothetical suicidal peer, while having previous experience with a suicidal person was related to higher ability to respond.

Overholser et al., (1989) <sup>116</sup> USA Moderate	Intervention	High School Adolescents (n=471)	M 251 (46.7%) F 220 (46.7%) 14-15 years old (M=14)	<b>Suicide Knowledge.</b> 21-item scale <b>Attitudes towards suicide.</b> Eight-item scale	<b>Personal experience with peer suicide.</b> Five-item measure	Adolescents with personal experience with a suicidal peer were significantly more likely to learn relevant information from the suicide awareness curriculum.  All students, except males with personal experience with a suicidal peer, significantly reduced negative attitudes towards suicide following the curriculum. Females showed a significant improvement in attitudes towards suicide and reduction in maladaptive coping, whereas males reported a slight increase in maladaptive coping.
Pojjula et al., (2001) <sup>128</sup> Finland High	Intervention	High School Adolescents (n=89)	M 46 (52%) F 43 (48%) 13-17 years old (M=15.4, SD=0.5)	<b>Reactions to School Interventions.</b> 39-item measure <sup>176</sup> <b>Impact of Suicide.</b> The Impact of Event Scale <sup>177</sup> <b>Bereavement.</b> The Hogan Sibling Inventory of Bereavement (HSIB) <sup>178</sup>		Lower levels of high intensity grief were significantly related to receiving adequate well-timed interventions and good support.
Shilubane et al., (2014) <sup>102</sup> South Africa Moderate	Qualitative	High School Adolescents (n=56)	M 26 (46.43%) F 30 (54.57%) 13-19 years old		Focus Groups	Adolescents were emotionally and negatively impacted by their friends' suicide attempt and death (e.g., blame, guilt, sadness). Mixed responses emerged in terms of signs prior to the event and possible causes for their friends' suicide behaviour. Participants also reflected on available sources and ways to prevent suicide

**Table 3:** Characteristics of included studies of both young people with self-harm ideation and behaviour and friends

Authors/ Location/ Quality	Study Design	Population		Measures		Results
		Source	Demographic Information	Outcome Variables	Friendship Variables	
Shepherd (2020) <sup>101</sup> UK Low	Qualitative	High School Adolescents (n=6)	F 6 (100%) 14-17 years old (M=15.17, SD=0.75)	Semi-structured Interviews		Four superordinate themes describe friend dyads' perspectives of support provision for self-harm: 1) Direct Support; 2) Distraction; 3) Taking responsibility; and 4) Further support
Simone et al., (2023) <sup>68</sup> Canada Low	Qualitative	University Students (n=20)	M 2 (10%) F 16 (80%) Non-Binary 2 (10%) 18-25 years old (M=19.95) East Asian 8 (40%)	Semi-structured Interviews		Four themes describe the experience of peers giving and/or receiving a NSSI disclosure: 1) The choice to disclose is a social cost-benefit analysis, where context and past experiences matter; 2) Individuals seek emotional and practical support from their peers via disclosure; 3) Supportive responding constitutes care, empathy, and non-judgment, and 4) Disclosure can lead to awareness, change, and growth and 5) Disclosure can be an overwhelming process, and many recipients feel ill-equipped to respond (recipients only).
Smith-Gowling et al., (2018) <sup>78</sup> UK Low	Qualitative	Clinical Sample of Adolescents (n=8)	M 3 (37%) F 5 (63%) 15-17 years old	Interviews		Four themes reflect the experiences of young people exposed to others' self-harm in an inpatient setting: 1) Pre-admission exposure to self-harm; 2) Exposure on the inside: An unpleasant environment; 3) Helper vs. helped; and 4) Separation from the attention seekers: competing for authenticity
Smithson et al. (2011) <sup>82</sup> UK Moderate	Qualitative Content Analysis	Online Forum Users (n=77)	M 4 (5%) F 73 (95%) 16-25 years old (M=19) White/ Caucasian 74 (96.10%)	Posts on online forum (" <i>SharpTalk</i> ")		Five themes reflect the nature of providing and asking for support in an online forum: 1) Introducing a problem by asking for advice; 2) Responding to problem presentation; 3) Responses to advice or support: Acceptance, rejection or ignoring; 4) Reciprocity in support and advice giving and receiving and 5) Mundane Nature of Advice
Yip et al (2002) <sup>77</sup> China High	Qualitative	High School Adolescents (n=6)	Adolescents who self-harm (n=3) M 1 / F 2 14-16 years old No information about friends (n = 3)	Semi-structured Interviews		Friends play different roles: 1) Friends as the target of self-injury; 2) Friends as encouraging self-injury; 3) Friends who also self-injured with the young person; 4) Supportive friends

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