NSRF
National Suicide Research Foundation

Evidence synthesis to inform Ireland's next suicide reduction strategy

RISK AND PROTECTIVE FACTORS FOR SUICIDE AND INTERVENTIONS FOR SUICIDE PREVENTION

Report prepared for the Department of Health
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This research has been commissioned by the Department of Health to inform the development of Ireland's next national suicide reduction strategy.

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1. Executive summary

1.1 Context and aims

Ireland's national strategy to reduce suicide, Connecting for Life, ended in 2024 and has entered its evaluation stage. To support the development of Ireland's next suicide reduction strategy, the Department of Health commissioned the National Suicide Research Foundation (NSRF) to conduct an evidence synthesis on the evidence base for suicide prevention with regards to risk and protective factors and interventions for suicide.

The aim of this report is to synthesise evidence on interventions for suicide prevention, and risk and protective factors for suicide and self-harm. The review has prioritised recent (within the past ten years) and high-quality reviews published on these topics and research relevant to the Irish context.

1.2 Key findings

1.2.1 Risk and protective factors related to suicide and self-harm

We searched PubMed for umbrella reviews (reviews of reviews) on risk and protective factors related to self-harm and suicide published since 2015. We complemented this search with a review of Irish studies using national datasets and surveys also published since 2015. The identified risk and protective factors were categorised using the World Health Organisation's (2014) model of suicide risk. Figure 1 summarises the identified evidence for risk and protective factors from both international (umbrella reviews) and national evidence. A total of 10 umbrella reviews were identified from the database searches, which included evidence on:

- Societal factors: media and internet exposure, socioeconomic factors
- Community factors: displacement, school factors, abuse and adverse experiences
- Relationship factors: bullying and family environment
- Individual factors: gender and sexuality, history of self-harm, psychiatric disorders, substance and medication use, physical health and sleep disorders/disturbances.

From the national searches, a total of 33 studies were identified. Findings from national Irish data echoed what was found in the umbrella reviews as highlighted in Figure 1, however, further evidence emerged on health systems (barriers to accessing healthcare), societal (access to means), community (ethnicity), and individual (age) factors.

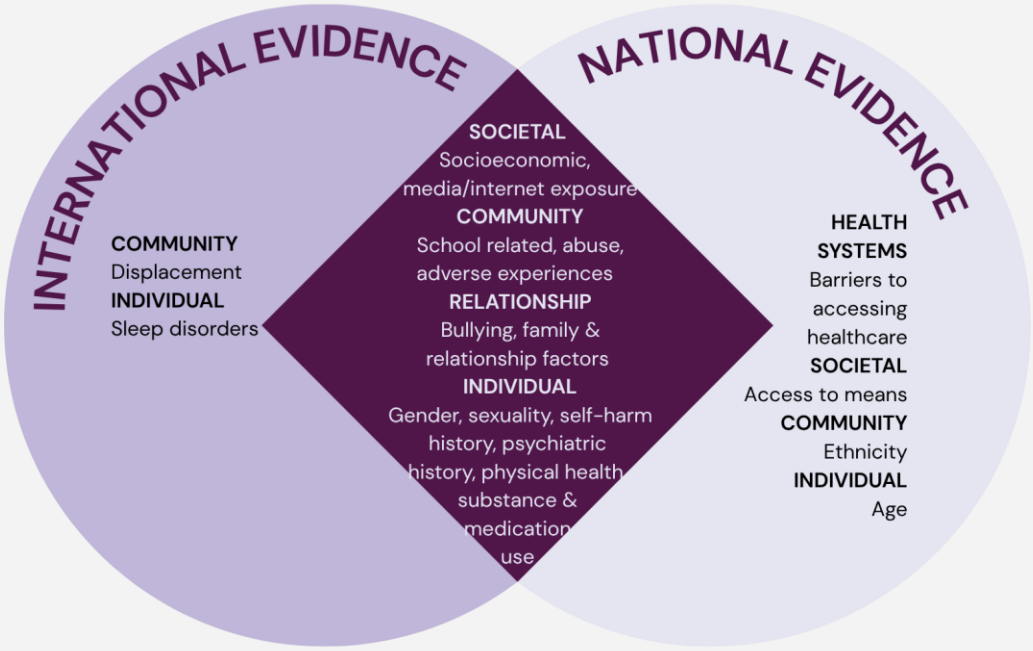

Figure 1. Summary of identified evidence for risk and protective factors

1.2.2 Interventions for suicide prevention

We searched for keywords relating to interventions for suicide and self-harm from Cochrane systematic reviews or umbrella reviews in three databases (PubMed, Embase, and Cochrane Library) published since 2015. We complemented this search with a review of relevant national suicide prevention strategies published in the last three years. The identified interventions were categorised using an analytical framework developed by Platt and Niederkrotenthaler (2020) for suicide prevention approaches implemented in national suicide prevention programmes. Evidence on suicide and self-harm prevention interventions published prior to 2015 was also identified from an evidence review published as part of Connecting for Life (HRB, 2015).

Figure 2 summarises the levels of evidence for self-harm and suicide related interventions based on these three key sources. Of the 12 interventions from Platt and Niederkrotenthaler's (2020) framework, evidence of nine of these interventions (means restriction, setting-based interventions in schools and communities, substance misuse interventions, gatekeeper training, telephone-based services, postvention strategies, screening programmes, psychotherapeutic interventions, and enhanced follow-up care) were found from the database searches, indicating high-quality of evidence as these were from Cochrane systematic reviews and umbrella reviews. However, not all interventions

provided strong levels of evidence, with some highlighting moderate or mixed levels of evidence. When examining evidence for interventions across the three sources, only means restriction and Cognitive Behavioural Therapy (CBT) for adults (Psychotherapeutic intervention) had strong levels of evidence. As summarised in Figure 2, there were moderate levels of evidence for multilevel programmes, school and community-based interventions, screening, enhanced follow up care, and Dialectical Behaviour Therapy (DBT) for adolescents (Psychotherapeutic intervention). Lastly, there were limited levels of evidence for awareness raising, media reporting, workplace, prison, and armed forced interventions, education and training, telephone-based services, postvention, and substance misuse programmes.

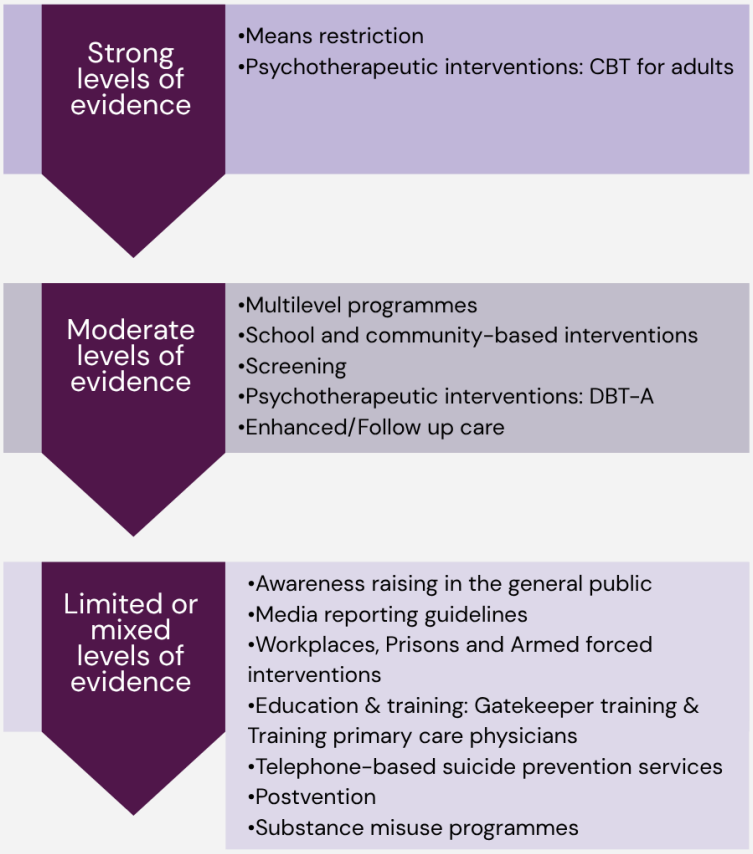

Figure 2. Levels of evidence for self-harm and suicide related interventions

1.3 Discussion

- **Risk and protective factors:** While strong evidence links individual-level factors such as mental health disorders, previous self-harm, substance use, sleep disturbances, and physical illness to suicide risk, these findings should be considered within the broader social and cultural context of Ireland. Gender and age-related risks have been identified in the evidence synthesis, but their interaction with other social determinants needs further exploration. Protective factors such as school connectedness and social policies show promise, though evidence for their effectiveness is mixed.
- **Self-harm and suicide-related interventions:** Although means restriction and CBT for adults have shown relatively strong evidence bases on the evidence synthesis, the applicability and scalability of these interventions across diverse Irish populations has not been examined. Moderate evidence for multilevel programs, school-based initiatives, and follow-up care is encouraging but should be interpreted with caution given variability in study designs and contexts.
- **Social determinants:** Evidence highlights the strong link between social determinants and suicidal behaviour. However, there is limited evidence on interventions that address these determinants, likely due to the emerging nature of this area of research. Greater attention is needed to policies targeting the social determinants of suicide such as income protection, housing stability, and employment conditions. Findings from both the evidence synthesis and public consultation emphasise the importance of upstream, universal measures in addition to targeted, individual-level interventions. Attention to commercial determinants, such as regulation of alcohol, gambling, firearms, and pharmaceutical industries, is also important.
- **Stigma reduction and public awareness:** The current evidence base for stigma-reduction initiatives and public education is weak, though these were identified priorities from the public consultation undertaken by the Department of Health. Efforts to improve help-seeking behaviour, especially among certain at-risk groups, should be integrated.
- **Postvention:** Despite widespread recognition of the impacts of suicide bereavement, evidence for effective postvention strategies is limited. This gap calls for careful development of supports informed by lived experience.
- **Data and monitoring:** National surveillance has improved understanding of risk profiles, including high-risk groups including prisoners and ethnic minorities. However, significant research gaps remain for certain populations, including neurodevelopmental disorders, refugees, and migrants.

2. Abbreviations

- ACE's: Adverse Childhood Experiences
- ADHD: Attention Deficit Hyperactivity Disorder
- ASD: Autism Spectrum Disorder
- AMSTAR: A MeaSurement Tool to Assess systematic Reviews
- CAMS: Collaborative Assessment and Management of Suicidality Framework
- CBT: Cognitive Behavioural Therapy
- CI: Confidence Interval
- DBT: Dialectical Behaviour Therapy
- DBT-A: Dialectical Behaviour Therapy for Adolescents
- ED: Emergency Department
- GP: General Practitioner
- HRB: Health Research Board
- HR: Hazard Ratio
- IASP: International Association for Suicide Prevention
- IDO: Intentional Drug Overdose
- IMV: Integrated Motivational-Volitional
- IPV: Intimate Partner Violence
- IRR: Incident Rate Ratio
- ISCO: International Standard Classification of Occupations
- LGBTIQ+: Lesbian, Gay, Bisexual, Transgender, Intersex and Queer
- MBT: Mentalisation-Based Therapy
- MBT-A: Mentalisation-Based Therapy for Adolescents
- MD: Mean Deviation
- NCPSHI: National Clinical Programme for Self-Harm and Suicide Related Ideation
- NSHRI: National Self-Harm Registry Ireland
- NSRF: National Suicide Research Foundation
- NSSI: Non-Suicidal Self Injury
- OR: Odds Ratio
- PTSD: Post Traumatic Stress Disorder
- RCT: Randomised Control Trial
- RR: Risk Ratio
- SMR: Standardised Mortality Ratio
- TAU: Treatment as Usual
- WHO: World Health Organisation

3. List of Tables and Figures

4. Methodology

4.1 Risk and protective factors for self-harm and suicide

To identify published evidence on individual, population-level and social factors which influence suicide and self-harm, a targeted literature search of umbrella reviews (reviews of reviews) was conducted. This was supplemented by identification of Irish studies utilising national datasets and surveys. A 10-year timeframe (publications since 2015) was chosen to ensure the review captures the most current and relevant evidence to inform strategy development.

4.1.1 Sources and strategies for identifying evidence

Database searches

PubMed was searched for keywords relating to suicide and/or self-harm and umbrella reviews (see Appendix A for details of search strategy). Duplicates were removed and all titles and abstracts were single screened to identify studies for inclusion, applying inclusion and exclusion criteria outlined below. Ten percent of identified articles were independently screened by an additional reviewer.

Identification of national Irish studies

Irish studies utilising national datasets and surveys were identified from multiple sources, including:

- Scoping review which identified suicide and self-harm studies by researchers in Ireland and Northern Ireland during 2015-2023 (Hursztyn et al 2024)
- Relevant Irish websites (NSRF website and HSE Connecting for Life website: Connecting for Life - HSE.ie)
- Evidence collated as part of the evaluation of the implementation of Connecting for Life

4.1.2 Inclusion and exclusion criteria

Studies, published in English, examining individual, population-level, and social factors which influence suicide and self-harm were included in the review. Studies focusing on demographic and/or clinical subgroups were included, as well general population studies. Publications where self-harm / suicide were secondary outcomes were not included.

For the database searches, included articles were limited to umbrella reviews (reviews of reviews) published in peer review journals. For Irish studies, publications reporting original

research using national data were included, including peer review publications and grey literature such as governmental and non-governmental reports.

Detailed inclusion and exclusion criteria for each search are included in Appendix A.

In this review, we adapted the World Health Organisation's (2014) ecological model of suicide risk to guide the classification of risk and protective factors. This framework categorises influencing factors across five levels: individual, relationship, community, society, and health systems. Using this model allowed for a structured synthesis of the evidence and supported the identification of both risk and protective factors within and across these domains.

4.2 Interventions for suicide prevention

To identify published evidence for effective interventions for the prevention of self-harm and suicide, a targeted literature search of umbrella reviews (reviews of reviews) and Cochrane systematic reviews published in the past 10 years was conducted. To supplement this, the evidence base of recent suicide prevention strategies (published in the last three years) in countries with similar context to Ireland were reviewed to identify relevant suicide prevention evidence. Evidence on suicide and self-harm prevention interventions published prior to 2015 was identified from an evidence review published as part of Connecting for Life (HRB, 2015).

4.2.1 Sources and strategies for identifying evidence

Database searches

Three databases (PubMed, Embase, and Cochrane Library) were searched for keywords relating to suicide and self-harm related interventions from Cochrane systematic reviews or umbrella reviews (see Appendix A for details of search strategy). Duplicates were removed and all titles and abstracts were single screened to identify studies for inclusion, applying inclusion and exclusion criteria outlined below. Ten percent of identified articles were independently screened by an additional reviewer.

National suicide prevention strategies

The evidence base for recent suicide prevention strategies (published in the last three years; 2022-2025) in countries with similar context to Ireland (high-income, English-speaking countries). Relevant national suicide prevention strategies were identified by reviewing the International Association for Suicide Prevention (IASP) Partnerships for Life documentation (IASP, 2025) and additional correspondence with country partners. Reference lists of relevant strategies were reviewed to identify any additional studies that

describe interventions for self-harm and/or suicide, that were not identified in the other searches.

HRB evidence synthesis

In 2015, the Evidence Centre of the Health Research Board (HRB) conducted a review of the evidence base for suicide prevention available at the time, with the aim of informing Connecting for Life (HRB, 2015). As the learnings from this review remain relevant to the upcoming strategy, an overview of the report's key findings is presented in this report. Methodological details and other relevant contextual factors are also provided.

4.2.2 Inclusion and exclusion criteria

Studies, published in English, examining the impact of suicide or self-harm prevention intervention(s) with a primary outcome of self-harm, suicidal ideation, or suicide were included in the review. Evidence related to pharmacological interventions was not included.

For the database searches, included articles were limited to umbrella reviews (reviews of reviews) and Cochrane systematic reviews published in peer review journals. For additional research identified via national suicide prevention strategies, publications reporting original research describing the impact of self-harm or suicide interventions was included.

Detailed inclusion and exclusion criteria for each search are included in Appendix A.

For classification of the identified interventions, we followed the analytical framework as described by Platt and Niederkrotenthaler (2020) for suicide prevention approaches implemented in national suicide prevention programmes. It emphasises the need for multilevel, integrated strategies tailored to specific contexts and populations, offering a comprehensive tool to guide policy and practice in suicide prevention. This structure also aids in identifying evidence gaps and prioritising interventions with the strongest empirical support. The framework highlights 13 distinct intervention types—including means restriction, media guidelines, school-based programmes, psychotherapy, and postvention—mapped across levels of prevention (universal, selective, indicated) and care (treatment, maintenance). Evidence related to pharmacological interventions was not included in our analysis therefore there were 12 intervention types in our adapted framework.

5. Evidence on risk and protective factors for self-harm and suicide

Based on the described search strategy, we identified studies reporting on risk and protective factors from international evidence (umbrella reviews) and Irish national studies. Table 1 provides an outline of risk and protective factors identified from the searches, categorised according to the WHO (2014) framework.

Table 1. Risk and protective factors for suicide and self-harm

Risk/ protective factor	Risk/protective factor description	Review author (date)	Irish studies author (date)
Health systems	Barriers to accessing healthcare	–	O'Farrell et al 2015 Cox et al 2025 Wilson et al 2025
Society	Media and internet exposure	Prades-Caballero et al 2024 McClatchey et al 2017	Corcoran et al 2019
	Access to means	–	Birchall et al 2021 Griffin et al 2017
	Socioeconomic factors	McEvoy et al 2023 Gallagher et al 2025 McClatchey et al 2017	O'Farrell et al 2016 O'Farrell et al 2015 Barrett et al 2018 McMahon et al 2024 Cox et al 2022 Cox et al 2025 McEvoy et al 2024 Corcoran et al 2015 McTernan et al 2023 McTernan et al 2024 Reynolds et al 2025
Community	Displacement (refugees)	Bevione et al 2024	–
	Ethnicity	–	Kavalidou et al 2023

	School-related factors	McEvoy et al 2023 Prades-Caballero et al 2024 Richardson et al 2024	McEvoy et al 2024 Silke et al 2024
	Abuse and adverse experiences	Favril et al 2023 McClatchey et al 2017 McEvoy et al 2023 Prades-Caballero et al 2024 Sahle et al 2022 Gallagher et al 2025	Joksimovic et al 2024 Cox et al 2022
Relationship factors	Bullying	McClatchey et al 2017 McEvoy et al 2023 Richardson et al 2024 Sahle et al 2022	McEvoy et al 2024 Silke et al 2024
	Family and relationship factors	McEvoy et al 2023 McClatchey et al 2017 Prades-Caballero et al 2024 Sahle et al 2022	Nearchou 2024 Cox et al 2022 Cox et al 2025 McEvoy et al 2024 Silke et al 2024 McTernan et al 2024
Individual factors	Age	–	Griffin et al 2018 Cully et al 2019 Bennardi et al 2016 White et al 2024 Daly et al 2018 Griffin et al 2017 Griffin et al 2023 McMahon et al 2024 Cox et al 2025
	History of self-harm/suicide attempt	McClatchey et al 2017 Richardson et al 2024	Cully et al 2019 Cully et al 2024 Hyland et al 2022 Bennardi et al 2016 White et al 2024 McTernan et al 2023

			Griffin et al 2023 Reynolds et al 2025
	Physical Health	McClatchey et al 2017 Calati et al 2021	McMahon et al 2024 Healthy Ireland Survey, 2024
	Mental health/psychiatric disorders	Prades-Caballero et al 2024 Favril et al 2023 McClatchey et al 2017 McEvoy et al 2023 Richardson et al 2024	Nearchou 2024 White et al 2024 McTernan et al 2023 McTernan et al 2024 McMahon et al 2024 McEvoy et al 2024 McEvoy et al 2024 Reynolds et al 2025 Cox et al 2022 Dooley et al 2019
	Gender and sexuality	McClatchey et al 2017 McEvoy et al 2023 Prades-Caballero et al 2024 Richardson et al 2024	Daly et al 2018 Bennardi et al 2016 Cully et al 2019 Daly et al 2020 Cox et al 2022 Daly et al 2021 Griffin et al 2017 Griffin et al 2023 Dooley et al 2019 McEvoy et al 2024 McMahon et al 2024 O'Farrell et al 2015 O'Farrell et al 2016 White et al 2024 Higgins et al 2024 Troya et al 2024 Reynolds et al 2025
	Sleep disorders/disturbances	McEvoy et al 2023 McClatchey et al 2017 Prades-Caballero et al 2024 Richardson et al 2024	–

	Substance use (including alcohol, drugs, and smoking)	Favril et al 2023 McClatchey et al 2017 McEvoy et al 2023 Prades-Caballero et al 2024 Richardson et al 2024 Shamabadi et al 2023	Cox et al 2022 Dooley et al 2019 Reynolds et al 2025 White et al 2024 McTernan et al 2023 McTernan et al 2024 Daly et al 2018 Daly et al 2020 McEvoy et al 2024 Griffin et al 2017 Griffin et al 2023 Birchall et al 2021 McMahon et al 2024 Troya et al 2024 Wilson et al 2025

5.1 Evidence from published umbrella reviews and Irish studies

A total of 10 umbrella reviews were identified from the database searches. Additionally, 33 Irish studies were identified from the national searches. Collectively, the findings identified a broad range of risk and protective factors for self-harm and suicide across individual, relationship, community, societal, and health systems levels.

While there were limited risk and protective factors at health-systems level identified, findings indicated that limited access to services, particularly in rural areas, may be associated with increased risk of suicide/self-harm.

Societal-level risks included sensationalised or biased media portrayals and a range of socioeconomic factors, such as economic recession, socioeconomic disadvantages, area-level deprivation, population density, social fragmentation, unemployment, homelessness, imprisonment, living alone, and certain occupational status. Societal-level protective factors included reduced access to means, such as codeine-related products and alcohol, stable employment among farmers, unemployment benefits, and social protection reforms.

At the community level, displacement, ethnicity-based disparities among Irish Travellers, and school-related adversity emerged as significant concerns, while school connectedness was identified as a protective factor.

Relationship-level risk factors included bullying, peer victimisation, adverse family environments, poor family relationships, family mental illness, being single, and interpersonal issues, while caregiver resilience and living with family were protective factors.

Individual-level risk factors included mental health disorders, substance use, having a history of self-harm – particularly the use of more lethal methods, physical health problems, adverse childhood experiences, sleep disturbances, belonging to a sexual or gender minority group, being male, and being younger or older in age. Conversely, protective factors included good sleep hygiene, strong school connectedness, and broader social policies that reduce economic and structural vulnerabilities.

While risk factors were more frequently reported, these protective factors highlight promising avenues for prevention at both individual and systemic levels.

Health systems

Barriers to accessing healthcare

No included umbrella reviews examined the impact of barriers to accessing healthcare.

An Irish study identified that being in closer proximity to hospital services was associated with a higher risk of self-harm, particularly for minor self-cutting, possibly indicating underreporting due to lack of accessibility in rural areas (O'Farrell et al 2015). Another Irish study identified that for farmers, there were no significant differences in GP contact prior to death (Cox et al 2025). A third study identified a low engagement with mental health services amongst males, particularly younger males who presented to emergency departments with self-harm acts (Wilson et al 2025).

Societal factors

Several umbrella reviews and Irish studies identified evidence of societal-level factors in influencing suicide or self-harm, primarily focusing on the impact of socioeconomic factors and exposure to suicide-related media and internet content.

Media and internet exposure

Prades-Caballero and colleagues (2024) identified that sensationalised and biased media coverage of suicides were a significant risk factor for suicidal behaviour (Prades-Caballero et al 2024). Additionally, a review included by McClatchey and colleagues (2017) identified internet use as a source of exposure to suicide, observing that suicidal ideation was significantly associated with searching for information about suicide, and discussion forum usage.

One Irish study identified a significant increase in female hospital-presenting self-harm involving sharp objects in the three months following the release of a television series depicting suicide, suggesting media portrayals are a significant risk factor for self-harm, particularly among female adolescents (Corcoran et al 2019).

Access to means

No umbrella reviews examined the impact of means restriction on suicide/self-harm.

Birchall et al (2021) identified that the implementation of guidance restricting over-the-counter sales of codeine-containing products acted as a protective factor against intentional drug overdose. Griffin et al (2017) examined incidences of hospital-treated self-harm presentations during public holidays, finding that presentations increased during most public holidays, especially St. Patrick's Day and New Year's Day. The only public holiday associated with a decreased risk of alcohol-related self-harm was Good Friday, possibly due to alcohol sales restrictions during the study period.

Socioeconomic factors

One umbrella review identified lower socioeconomic status as a risk factor for self-harm in young people (McEvoy et al 2023). Another review identified various employment factors and their associations with suicidality (McClatchey et al 2017). The review identified that long term employment was associated with suicidality, even when controlling for mental health problems. The review also examined suicide risk across various occupations, classified according to the International Standard Classification of Occupations (ISCO). Category 8 workers (e.g., machine operators) had high risk of suicide. Category 5 (e.g., police and other services) and Category 6 (e.g., skilled agricultural workers) workers were also described as at-risk. Category 1 (e.g., high skill-level managers) and Category 4 (e.g., clerical support workers) were at lowest risk of suicide. Additionally, the umbrella review identified that suicide risk was highest amongst "elementary" occupations such as cleaners. Moreover, one included review found that 7 of 11 primary studies demonstrated significantly higher rates of suicide amongst veterinary surgeons compared to the general population. Lastly, Gallagher and colleagues (2025) identified that unemployment was associated with greater risk of suicide, particularly in men. Additionally, financial stress, unsecured debt, and lower levels of education were all associated with elevated risk. Environmental and housing-related factors were also linked to suicide. Protective factors included protective social policies, such as unemployment benefits and social protection reforms, which were associated with reductions in suicide rates.

Regarding the Irish studies, Corcoran and colleagues (2015) identified that economic recession and austerity measures are a significant risk factor for suicide and self-harm, particularly among men. Socioeconomic status was identified as a risk factor for self-harm

(McEvoy et al 2024). Two studies identified that area-level deprivation was a significant predictor of both self-harm (O'Farrell et al 2015) and suicide (O'Farrell et al 2016). Population density was identified as a risk factor for suicide in males (O'Farrell et al 2016), and for self-harm in both females and males, but this effect was greater for males (O'Farrell et al 2015). In the general population, social fragmentation was a significant predictor of self-harm (O'Farrell et al 2015), but not suicide (O'Farrell et al 2016). However, for females aged 40–64 years, living in the most fragmented areas was associated with greater risk of suicide compared to those in the least fragmented areas (O'Farrell et al 2016). Several housing and employment factors were also identified as risk factors for suicide and self-harm. Specifically, homelessness (Barrett et al 2018, Cox et al 2022), being in prison (McTernan et al 2023, 2024), living alone (Cox et al 2022, McMahon et al 2024), unemployment (McMahon et al 2024, Reynolds et al 2025), and being a homemaker (McMahon et al 2024) were identified as significant risk factors for self-harm and suicide. Additionally, farmers and agricultural workers were identified as being more at-risk for suicide than non-farmers (Cox et al 2025). Stable employment in farmers acted as a protective factor (Cox et al 2025).

Community factors

Both umbrella reviews and Irish studies examined the impact of community-level risk and protective factors on suicide-related behaviours, including the impact of displacement, ethnicity, school-related factors, abuse, and adverse experiences.

Displacement

Bevione and colleagues (2024) investigated the influence of displacement amongst refugees and asylum seekers, finding that refugees demonstrated significantly higher suicide death rates and suicide attempt prevalence than the general population in their host country. Moreover, refugees who arrived in low/lower-middle income countries displayed higher suicide death rates and suicide attempt prevalence — but lower suicidal ideation — than refugees who arrived in high/upper-middle income countries.

No Irish studies investigated the impact of displacement.

Ethnicity

No umbrella reviews reported differences in risk of suicide/self-harm across ethnicity. However, one Irish study reported that Traveller individuals were at significantly higher risk for self-harm and suicidal ideation compared to their White Irish counterparts. This effect was particularly pronounced for males (Kavalidou et al 2023).

School-related factors

Three umbrella reviews identified school-related risk and protective factors (McEvoy et al 2024, Prades-Caballero et al 2024, Richardson et al 2024). School disengagement was identified as a risk factor for young people in two reviews: McEvoy and colleagues (2024) identified school truancy or drop-out was identified as a notable risk factor for self-harm, and Richardson and colleagues (2024) identified school absenteeism as a risk factor for suicidality. One study included in an umbrella review identified that suicide rates were lower during non-school periods, suggesting that academic pressures are likely a risk factor for suicide (Prades-Caballero et al 2024). Conversely, McEvoy and colleagues (2023) suggested that good school connectedness may serve as a protective factor against suicide attempts.

One Irish study identified poor academic performance and early school leaving as significant risk factors for self-harm in young people (McEvoy et al 2024). Additionally, experiences of adversity in school contexts were risk factors for self-harm and suicidality, particularly when coupled with adversity experienced in other contexts (Silke, 2024).

Abuse and adverse experiences

Abuse and other individual-level adverse experiences – particularly during childhood – were identified as significant risk factors for self-harm and suicide across six umbrella reviews (Gallegher et al 2025, McClatchey et al 2017, McEvoy et al 2023, Prades-Caballero et al 2024, Sahle et al 2022). Experiences of abuse in both adulthood (McClatchey et al 2017) and childhood (Gallegher et al 2025, McClatchey et al 2017, McEvoy et al 2023, Prades-Caballero et al 2024) were significant risk factors for both suicide (Gallegher et al 2025, McClatchey et al 2017, Prades-Caballero et al 2024) and self-harm (McEvoy et al 2023). Specifically, emotional abuse (McClatchey et al 2017, Prades-Caballero et al 2024), physical abuse (McClatchey et al 2017, Prades-Caballero et al 2024), sexual abuse (McClatchey et al 2017, Prades-Caballero et al 2024), neglect (Gallegher et al 2025, McClatchey et al 2017, McEvoy et al 2023), and childhood maltreatment (McClatchey et al 2017) were identified as risk factors for suicide/self-harm. Of these, McClatchey and colleagues (2017) identified sexual or physical abuse as the strongest predictor of suicide, associated with a fourfold increased risk. Sahle and colleagues (2022) also identified that general adverse childhood experiences were associated with a twofold increased risk of suicidality. Lastly, McEvoy and colleagues (2023) identified that dating violence, trauma, and relationship breakups were significantly associated with self-harm in young people.

An Irish study identified that intimate partner violence was significantly associated with elevated rates of suicidal ideation and attempted suicide. This effect was particularly pronounced in those experiencing systematic abuse, in women with children, lower

income, lower social contact, or lower social support, and in men with children or in urban residence (Joksimovic et al 2024). Cox et al (2022) also identified that adverse life events were associated with increased risk of suicide.

Relationship factors

Factors related to interpersonal relationships, particularly in relation to bullying and the family environment, were commonly identified as risk factors in the included umbrella reviews and Irish studies.

Bullying

Four umbrella reviews identified bullying as a significant risk factor for self-harm/suicide. One identified bullying as a significant risk factor for self-harm in young people (McEvoy et al 2023). Bully victimisation was also frequently identified as a risk factor for suicidality (McClatchey et al 2017, Richardson et al 2024, Sahle et al 2022), including both suicide attempts (McClatchey et al 2017, Richardson et al 2024), and suicidal ideation (McClatchey et al 2017). One review additionally identified that cyberbullying was more strongly related to suicidal ideation in both victims and perpetrators than traditional bullying (McClatchey et al 2017).

McEvoy (2024) found that bullying victimisation, peer problems, and lack of friends were a significant risk factor for self-harm in young people in Ireland. Similarly, Silke (2024) identified peer-related adversity, such as bullying and rejection, was a significant risk factor for suicidality and self-harm.

Family and relationship factors

Several reviews identified self-harm or suicide risk associated with factors related to the family environment. These included factors such as family dysfunction (Sahle et al 2022), violence/conflict within the family environment (Prades-Caballero et al 2024), parental divorce (McEvoy et al 2023), poor family relationships (McEvoy et al 2023) and being in foster care/state care (Favril et al 2023, McEvoy et al 2023). Reviews included in the review conducted by Sahle and colleagues (2022) identified no significant associated between suicidality and parental incarceration or displacement due to violence.

Parental mental illness (Sahle et al 2022) and a family history of mental illness (McClatchey et al 2017, Prades-Caballero et al 2024) was identified as a significant risk factor for suicidality. McClatchey and colleagues (2017) also identified that individuals who lost a parent to suicide were at greater risk of suicide and suicide attempts. Similarly, Prades-Caballero and colleagues (2024) identified bereavement and exposure to suicide as a significant risk factor for suicide.

An Irish study identified caregiver resilience as a strong protective factor against self-harm in young people (Nearchou, 2024). Additionally, living with family was identified as a protective factor against suicide in farmers and agricultural workers (Cox et al 2025). Two studies identified adversity experienced in the home, such as family/parental conflict and parental divorce/separation as a risk factor for suicidality and self-harm (McEvoy et al 2024, Silke, 2024). Another identified that being single, divorced, or separated was associated with increased risk of suicide (Cox et al 2022). Amongst Irish prisoners, relational factors such as difficulties with family, staff, or fellow prisoners were a risk factor for self-harm (McTernan et al 2024).

Individual factors

Individual-level factors were the most common types of risk and protective factors identified across studies. These included factors relating to gender and sexuality, age, history of self-harm/suicide attempts, mental health/psychiatric disorders, substance and medication use, sleep disorders/disturbances, and physical health.

Gender and sexuality

Two reviews concluded that females were at greater risk of self-harm than males (McEvoy et al 2023, Richardson et al 2024). One concluded that males were at greater risk of suicide than females (McClatchey et al 2017). Members of the LGBTIQ+ community were identified as more at-risk for self-harm and suicidal ideation across four reviews (McClatchey et al 2017, McEvoy et al 2023, Prades-Caballero et al 2024, Richardson et al 2024). McEvoy and colleagues (2023) found that lesbian, gay, bisexual and queer youth were at greater risk of self-harm, with bisexual youth being most at-risk. Richardson and colleagues (2024) identified that lesbian, gay, bisexual, transgender, queer (or questioning) youth had a significantly higher presence of suicidality. Similarly, McClatchey and colleagues (2017) found that lesbian, gay, and bisexual (LGB) individuals were at greater risk of suicidal behaviour than heterosexual individuals, and that risk was higher for male LGB individuals than female LGB individuals. In women, lesbians were identified as more at-risk for suicide attempts than bisexual women. Lastly, Prades-Caballero and colleagues (2024) concluded that belonging to a minority group such as the LGBTIQ+ community was a significant risk factor for suicidal behaviour.

Four Irish studies found that males were at markedly higher risk of suicide than females (Cox et al 2022, Griffin et al 2023, O'Farrell et al 2016, Reynolds et al 2025). O'Farrell et al (2016) found that males between 15 and 39 years were most at risk, while Cox et al (2022) found that males between 40 and 44 years were most at risk.

Five studies identified that self-harm incidence was significantly higher in females than males (Dooley et al 2019, McMahon et al 2024, McTernan et al 2023, O'Farrell et al 2015, Troya et al 2024), including among older populations (Troya et al 2024), adolescents/young adults (Dooley et al 2019), and individuals in the Irish prison system (McTernan et al 2023). Three studies identified gender differences in method of self-harm/suicide: These identified that attempted hanging was far more common amongst males, while drowning was more common amongst females (White et al 2024), paracetamol-related intentional drug overdose was more common in female young people compared to male young people (Daly et al 2021), and intentional drug overdose was more common in young females and middle-aged males (Daly et al 2018). Another study found that being male was associated with a higher risk of self-harm repetition and method-switching (Daly et al 2020), one found that being female was associated with higher risk of self-harm repetition (Bennardi et al 2016), and another found sex was not a significant overall predictor of self-harm repetition (Cully et al 2019). Lastly, Griffin et al (2017) examined hospital-treated self-harm presentations during public holidays, finding that alcohol-related presentations on these days were more likely to be made by men presenting for the first time, and to involve methods like self-cutting.

McEvoy (2024) identified both gender and LGBQA identity as risk factors for self-harm. Higgins et al (2024) additionally identified that young LGBTIQ+ individuals aged 14-18 had approximately three times the level of self-harm risk, and five times the level of suicide attempt risk.

Age

No umbrella reviews reported the impact of age on self-harm or suicide.

However, several Irish studies identified specific age groups as being at greater risk of self-harm/suicide.

Five studies found that younger people (Bennardi et al 2016), specifically under the age of 15 (Cully et al 2019), or between 15-34 years (Healthy Ireland Survey, 2024), 25-54 years (McMahon et al 2024) or 35-54 years (Cox et al 2022) were at greater risk of self-harm/suicide. Griffin et al (2018) also found that young people aged 10-24, females between 15 and 19 years, and males between 20 and 25 years, were at increased risk of hospital-treated self-harm. However, during public holidays, females under 15 were at decreased risk of hospital-treated self-harm presentations (Griffin et al 2017).

Several other studies identified that self-harm and suicide risk was higher amongst older people. Griffin et al (2023) found that males over 55 years, and females aged between 45 and 54 years, were most at-risk for hospital-treated self-harm. Cully et al (2019) found that

individuals under 15 years had the highest risk of self-harm repetition, while those over 65 had the lowest risk of repetition. White et al (2024) found that individuals over 35 were at increased risk for highly lethal methods of self-harm, such as hanging and drowning. Additionally, Cox et al (2025) found that suicide risk was higher among farmers who were over the age of 65.

Amongst individuals engaging in intentional drug overdose, individuals under 25 years were at higher risk of overdosing with paracetamol, while individuals over 45 years were more likely to overdose with benzodiazepines and antidepressants (Daly et al 2018).

History of self-harm/suicide attempt

Two umbrella reviews examined the risk of suicide amongst individuals with a history of self-harm or suicidal behaviours. Richardson and colleagues (2024) included three reviews examining this relationship. One review identified that previous suicidal ideation was a significant risk factor for suicidal behaviour in both male and female youth, and that females were approximately 6 times more at risk if they had previously attempted suicide. Another included review identified that suicide risk was significantly higher in adolescents who self-harmed. A third concluded that suicide risk was greatest in individuals with previous suicide attempts, followed by previous non-suicidal self-injury, suicide ideation history, and previous self-injurious thoughts and behaviours, respectively. One review included in the McClatchey and colleagues (2017) umbrella review found suicide risk to be greater in those with a history of suicide attempts or self-harm. Another included review found that suicide risk was very strongly associated with self-harm. A third review found that suicide risk was associated with self-harm, with a 4.2% risk of suicide in the decade following a person's first known act of self-harm.

Regarding Irish studies, Hyland et al (2022) found that a history of suicidal ideation and/or non-suicidal self-injury were a significant predictor of suicide. Reynolds et al (2025) identified past suicide attempts amongst those with a history of gambling as a risk factor for suicide. Five studies identified that a history of repeated self-harm was a strong risk factor for future repetition (Bennardi et al 2016, Cox et al 2022, Cully et al 2019, 2024, Griffin et al 2023), with risk increasing alongside number of prior episodes (Bennardi et al 2016). Method of self-harm was also a significant risk of self-harm repetition and suicide: Three Irish studies found that self-cutting or other more severe/violent methods were a risk for future repetition (Bennardi et al 2016, Cully et al 2019, 2024). Additionally, two studies identified that more lethal methods such as hanging and drowning were associated with elevated suicide risk, particularly in comparison to drug overdose (Griffin et al 2023, White et al 2024)

Mental health/psychiatric disorders

Of the five umbrella reviews examining the relationship between mental health and psychiatric disorders on self-harm/suicide, all found some relationship between mental health/psychiatric disorders and self-harm/suicidal ideation. In particular, anxiety, depression, bipolar, personality disorders, emotional symptoms, and conduct/behavioural disorders, were associated with suicide/self-harm (Favril et al 2023, McClatchey et al 2017, McEvoy et al 2023, Prades-Caballero et al 2024, Richardson et al 2024).Favril and colleagues (2023) differentially examined the relationship between various mental disorders and suicide, finding that psychotic and mood disorders were the strongest predictors of suicide, followed by personality disorders, and anorexia nervosa. The review estimated a 10-fold increased risk of suicide associated with psychotic disorders and mood disorders. Additionally, for individuals recently discharged from psychiatric hospitals: depressive symptoms or diagnoses, recent social difficulties, suicidal ideation, being male, and an unplanned discharge were moderately associated with suicide. Individuals who had less contact with services post discharge were significantly less likely to complete suicide (McClatchey et al 2017).

Nine Irish studies linked mental health/psychiatric disorders to self-harm and suicide. Documented mental health conditions were associated with greater risk of self-harm (McMahon et al 2024) and suicide (Cox et al 2022). Amongst young people, symptoms/diagnoses of depression (McEvoy et al 2024, Dooley et al 2019), anxiety (McEvoy et al 2024, Dooley et al 2019), and psychiatric illness or internalising/externalising behaviours (McEvoy et al 2024) were associated with greater risk of self-harm. Nearchou (2024) identified depression, posttraumatic stress, and low resilience as risk factors for self-harm among young people during the COVID-19 pandemic. Amongst Irish prisoners, mental health issues were the most common contributing factor for self-harm (McTernan et al 2023, 2024). Amongst individuals with a gambling history, mood disorders were identified as a risk factor (Reynolds et al 2025). Lastly, White et al (2024) identified that individuals who attempted hanging or drowning were less likely to have previously received a psychosocial/mental health assessment.

Substance and medication use

Five umbrella reviews examined the link between various substances/medications and risk of suicide and self-harm. McEvoy et al (2023) found that substance abuse/misuse was a significant risk factor for self-harm, including general substance use, drugs, or cannabis. McClatchey et al (2017) found that substance-related disorders were strongly associated with suicidal risk, particularly in women. Additionally, cannabis use (both use and frequency of use) was associated with a significantly increased risk of suicidal ideation and suicide attempts. There was also an association between alcohol use in early adolescents

and suicide, and methamphetamine use and suicide/suicide attempts. Lastly, current smokers and former smokers were also at increased risk of suicide compared to individuals who never smoked. Favril et al (2023) also identified smoking as a risk factor for suicide. Prades-Caballero et al (2024) identified that adolescents who used cannabis were 6-16 times more likely to attempt suicide, particularly when use began before the age of 13. Shamabadi et al (2023) also identified cannabis as a risk factor: cannabis use was linked to suicidal ideation and suicidal attempts across most of the 23 reviews focusing on this risk factor, particularly amongst the general population, adolescents, and individuals with bipolar disorder. Heavier cannabis use was more strongly linked to suicide attempts. Lastly, Richardson et al (2024) identified that a history of smoking and alcohol consumption were associated with a higher prevalence of self-harm in adolescents. Additionally, antidepressant use (particularly SSRIs) was associated with a modest increase in suicidal behaviour in young people.

Four studies found a that history of drug and/or alcohol dependence was associated with an increased risk of self-harm/suicide (Cox et al 2022, Dooley et al 2019, McMahon et al 2024, Reynolds et al 2025). Two similarly identified substance misuse as a risk factor (McEvoy et al 2024, McTernan et al 2024). Daly et al (2020) identified that the use of benzodiazepines, antidepressants, and illegal drugs were associated with increased risk of self-harm method switching. Six Irish studies identified alcohol involvement in a substantial proportion of incidences of self-harm (Daly et al 2018, McTernan et al 2023, Troya et al 2024, White et al 2024, Wilson et al 2025), which was particularly prominent during public holidays (Griffin et al 2017). One of these studies identified that alcohol involvement was associated with overdoses involving illegal drugs, and increased lethality (Daly et al 2018). However, another study identified that alcohol involvement in self-harm acts was linked to a reduced risk of suicide (Griffin et al 2023).

Sleep disorders/disturbances

Four umbrella reviews identified a relationship between sleep and self-harm/suicidal ideation. One umbrella review found that sleep disturbances were associated with a higher risk of suicide attempts, suicidal ideation, and suicidal ideation with a plan in adolescents (Richardson et al 2024). Another review (McClatchey et al 2017) found that patients with comorbid sleep disturbances were at increased risk of suicidal behaviours. Particularly, sleep disturbances in individuals with depression, PTSD, panic disorders, and schizophrenia were associated with increased risk. Additionally, the review identified that across types of sleep disturbances, parasomnia had the strongest link to suicidal behaviour, and sleep-related breathing disorder had the lowest.

McEvoy and colleagues (2023) identified that good sleep may act as a protective factor against self-harm in young people. Similarly, Prades-Caballero et al (2024) found that increasing sleep duration by one hour can reduce the risk of suicidal ideation up to 11%, while changes in sleep quality and quantity negatively impacted young people, including reductions in serotonin levels, impaired impulse control and judgement, and decreased problem-solving skills.

No Irish studies examined the impact of sleep disorders/disturbances.

Physical health

McClatchey and colleagues (2017) outlined that one of the included reviews identified an increased risk of suicide amongst individuals with traumatic brain injury. Another review found that individuals with type 1 diabetes were at greater risk of suicide than the general population, with one primary study additionally finding that suicidal behaviour was higher in individuals with type 1 diabetes compared to those with type 2 diabetes. Calati and colleagues (2021) examined various factors amongst individuals diagnosed with cancer. Overall, there was strong evidence to suggest an increased risk of suicide in patients diagnosed with cancer. Additional risk factors for this population included being male, older in age, and being single (including being divorced, separated, or widowed). Suicide risk was also greater when diagnoses were made in the last six months, and for certain types of cancer such as cancers of the respiratory tract, followed by pancreatic, oesophageal, and head and neck cancers. Lasty, suicide risk was associated with treatment history, including chemotherapy and treatment-related symptoms.

One Irish study (McMahon et al 2024) identified that a history of physical illness or pain was associated with increased risk of suicide. More specifically, this study found that subgroups of individuals who died by suicide—those with minimal mental health history—were characterised by notably high levels of chronic physical illness or pain, suggesting that physical health stressors independently contribute to suicide risk even in the absence of psychiatric or self-harm history. A 2024 Healthy Ireland Survey additionally found that 22% of individuals who report their health as bad reported an attempt to take their own life, compared to 5% of their counterparts.

6. Interventions for suicide prevention

6.1 Evidence from Umbrella reviews, Cochrane systematic reviews, and emerging evidence from National Strategies

A total of 10 reviews published between 2015 and 2025 were identified, comprising five Cochrane systematic reviews and five umbrella reviews. These reviews investigated the effectiveness of interventions in reducing suicidal behaviour (n=3), self-harm (n=4), and/or suicide (n=4) as primary outcomes. Collectively, the evidence encompassed 214 individual studies, mostly conducted in high- or upper-middle-income countries. Two reviews focused on adults, four included participants of all ages, two examined individuals up to 25 years old, and the remaining two targeted populations up to 18 years of age.

Based on the twelve intervention categories outlined in the Platt and Niederkrotenthaler (2020) analytical framework, nine were represented across the included reviews. To complement the identified evidence from the reviews, six national suicide prevention strategies from high-income, English-speaking countries with similar contexts to Ireland were identified (Australia, Canada, England, New Zealand, Scotland, and the United States). The reference lists of each strategy were screened to identify additional relevant interventions not captured through the initial database searches (n=237; see Table 2).

The strongest evidence supported means restriction with Cochrane and umbrella reviews showing a significant reduction in suicide rates, particularly through barriers, pesticide restrictions and limited access to pharmaceuticals. Additionally, there was strong evidence to support the effect of Cognitive Behavioural Therapy (CBT) in reducing self-harm in adults, particularly in the longer term. School-based interventions showed low-to-moderate certainty with universal approaches having an uncertain impact. Selective and indicated interventions showed short-term benefits for reducing self-harm and ideation. Community-based interventions like physical activity and skills training had limited but promising findings in specific groups, including older adults and youths. Similarly, Dialectical Behaviour Therapy for Adolescents (DBT-A) also showed low-to-moderate evidence in reducing both self-harm repetition and suicidal ideation in adolescents' post-intervention. Substance misuse programmes, gatekeeper training, telephone interventions, postvention, and psychotherapeutic interventions such as Mentalisation-Based Therapy (MBT) and family-based and group therapy for children/adolescents, and enhanced treatment showed mixed, low, or very low certainty evidence, with most studies not demonstrating a clear reduction in suicide or repeated self-harm.

Overall, the complementary searches of the national suicide prevention strategies found inconsistent evidence for awareness-raising, settings-based programmes in workplaces, prisons, armed forces, and training of primary care physicians. Some supportive evidence was identified for multilevel programmes and media reporting. However, the robustness of this evidence was lower when compared to database searches.

Table 2. Interventions for suicide prevention

Type of intervention	Cochrane/Umbrella Reviews	National Strategies
Multilevel programmes		
1. National/community-based suicide prevention programmes	-	Hofstra et al 2020
Prevention: universal		
2. Restrictions on access to commonly used methods	Okolie et al 2020a, Okolie et al 2020b, Nevarez et al 2024	-
3. Awareness- raising public	-	Torok et al 2017
4. Media reporting guidelines	-	Niederkrotenthaler et al 2020
Prevention: selective		
5. Settings-based		
a. Schools	Bennett et al 2015, Morken et al 2020, Sharma et al 2024,	-
b. Community	Bennett et al 2015, Laflamme et al 2022	-
c. Workplaces	-	Witt et al 2017
d. Prisons	-	Carter et al 2022
e. Armed forces	-	Nelson et al 2017
6. Substance misuse	Witt et al 2021a	-
Prevention: indicated		
7. Education and training		
a. Gatekeeper training	Sharma et al 2024	-
b. Training primary care	-	Milner et al 2017
8. Telephone-based services	Witt et al 2021, Siadat et al 2024	-
9. Postvention	Morken et al 2020	-
Treatment/Maintenance		
10. Screening	Laflamme et al 2022	-
11. Psychotherapeutic (in person & IT)	Witt et al 2021a, Witt et al 2021b, Bennett et al 2015, Morken et al 2020, Sharma et al 2024, Siadat et al 2024	-
12. Enhanced follow up care	Morken et al 2020, Bennett et al 2015, Witt et al 2021a, Witt et al 2021b	-

Multilevel programmes

National and community-based suicide prevention programmes, combining different types of prevention and treatment interventions

No Umbrella or Cochrane systematic reviews on multilevel programmes were identified in the database searches. One meta-analysis of 15 studies identified in the National Strategies, found that multilevel interventions were more effective than single level interventions (Hofstra et al 2020). The authors defined multilevel interventions as "combined interventions by different providers in multiple domains where the effect of the combined parts of the intervention might create a stronger effect than the sum of the individual effects of the interventions" (Hofstra et al 2020). Findings from this study showed a positive association between the number of levels of the intervention and the effect size.

Prevention: Universal

Means restriction

Three reviews, two Cochrane systematic reviews (Okolie et al 2020a, Okolie et al 2020b), and one umbrella review, reporting on evidence from 32 countries across 12 systematic reviews, (Nevarez et al 2024), examined the association between means restriction and suicide. One review which focused on interventions to restrict the availability of, or access to, means of suicide on roads (Okolie et al 2020b) found no published studies, highlighting the lack of published evidence in the area. Overall, the other two reviews (Okolie et al 2020a, Nevarez et al 2024) reported a significant association between means restriction and reduced suicide rates, although the specific means varied. Both reviews found evidence that physical barriers and safety nets to prevent jumping were effective in lowering suicide rates. Additionally, Nevarez et al (2024) concluded that restricting access to pesticides and pharmaceuticals was successful in preventing suicide. However, evidence on the effectiveness of road closures (Okolie et al 2020a) was limited, and the effectiveness on firearm restrictions was inconsistent (Nevarez et al 2024).

Awareness-raising in the general public

No Umbrella or Cochrane systematic reviews on awareness-raising were identified in the database searches. One systematic review (Torok et al 2017) from the National Strategies reporting on thirteen studies assessed mass media initiatives aimed at preventing suicidal behaviour and improving public understanding of suicide. They found that such campaigns were most impactful when included within broader, multi-faceted prevention programmes. In contrast, campaigns delivered in isolation had limited effect, mainly enhancing awareness and knowledge. Due to variability in study quality, the authors emphasised the need for more robust and consistent research. Overall, authors conclude there is limited evidence for awareness-raising as a sole intervention for suicide prevention, and that

public awareness efforts should be implemented alongside other interventions as part of a comprehensive suicide prevention strategy (Torok et al 2017, Zalsman et al 2016).

Media reporting guidelines

No Umbrella or Cochrane systematic reviews on media reporting guidelines were identified in the database searches. One systematic review identified from the National Strategies examined the association between reporting on suicides, in particular death of celebrities by suicide, and subsequent suicides in the general population (Niederkrotenthaler et al 2020). A total of 31 studies were identified, with 20 included in the main analysis. This review found that the risk of suicide increased by 13% in the period after the media reported a death by suicide of a celebrity. Regarding method of suicide, when this was reported, an associated 30% increase in deaths by the same method was observed (Niederkrotenthaler et al 2020). The authors conclude that evidence suggests that adhering to media reporting guidelines is essential when reporting suicides.

Prevention: selective

Setting based programmes

School based interventions

Three reviews, one Cochrane systematic review (Sharma et al 2024) and two umbrella reviews (Bennett et al 2015, Morken et al 2020) examined the impact of school-based interventions on suicidal behaviours. The Cochrane systematic review comprising evidence from 51 studies from 23 countries (Sharma et al 2024). One of the umbrella reviews (Bennett et al 2015) included evidence from 28 studies while the other umbrella review (Morken et al 2020) had eight studies.

Sharma and colleagues (2024) examined the impact of universal, selective (e.g., gatekeeper training, screening), and indicative (e.g., Cognitive Behavioural Therapy, Dialletical Behavioural Therapy, problem-solving) interventions in reducing suicidal behaviours, finding little evidence for any outcomes. Universal interventions showed uncertain impact on self-harm, and selective interventions showed some promise in reducing self-harm in the short term but unclear findings for the medium term. Indicated interventions, particularly postvention, showed some efficacy in reducing self-harm and suicidal ideation, based on low-certainty findings.

However, Bennet and colleagues (2015) found that school-based prevention interventions reported decreased suicide attempts and suicidal ideation, but not suicide.

Morken et al (2020) concluded with moderate certainty that school-based prevention programmes reduce suicide attempts at 3-12 months follow-up, based on the findings of three primary studies. The effect possibly held at two and 15 years follow up (with lower

certainty). They also found with low certainty that school-based interventions possibly reduced the rate of completed suicides at three-year follow-up.

Community based interventions

Two umbrella reviews focused on community-based interventions such as physical activity and skills training on reduction self-harm. Bennett et al (2015) reviewed school-based suicide prevention efforts among young people aged less than 25 years and found that skills training interventions may help reduce suicidal ideation and attempts. Notably, one randomised control trial (RCT) involving the Good Behaviour Game reported positive outcomes. Laflamme et al (2022), based on evidence from two reviews from eight countries, assessed the impact of physical activity on suicidal ideation in adults over 60. Among studies comparing active versus inactive individuals, two of three primary studies found that older adults who were physically active had significantly lower odds of experiencing suicidal thoughts.

Workplaces

No Umbrella or Cochrane systematic reviews on workplace interventions were identified in the database searches. There was limited evidence on workplace prevention of suicide identified in the National Strategies. One systematic review (Witt et al 2017) reviewed multi-component programmes targeted for individuals working in emergency and protective services (e.g. military, police, firefighters). Thirteen studies were identified, with evidence suggesting that suicide rates were halved over an average follow up period of 5.25 years (Witt et al 2017). Sub-group analyses suggested that programmes targeting military or police personnel were associated with a significant reduction in suicide rates (Witt et al 2017). However, the authors conclude that the design of studies included in the review (mostly observational research and quasi-experimental), limit the evidence as these studies are drawing causal inferences.

Prisons

No Umbrella or Cochrane systematic reviews on prison-based interventions were identified in the database searches. From the National Strategies review, limited evidence emerged from interventions aimed at suicide prevention at prison settings. Carter and collaborators (2022) conducted a systematic review reporting on evidence from 38 studies. Only four studies were randomised controlled trials, with most studies reporting considerable methodological limitations. Interventions varied from group-based treatment programmes, peer support programmes, individual treatment, multi-component programmes, and changes in legislation or policy (Carter et al 2022). The authors conclude that more high-quality evidence from prison settings are needed, in particular evidence from specific population groups such as women, young people, and ethnic minority groups (Carter et al 2022).

Armed forces

No Umbrella or Cochrane systematic reviews on armed forces interventions were identified in the database searches. One systematic review (Nelson et al 2017) from the National Strategies with evidence from 19 studies examined the effectiveness and adverse effects of healthcare interventions in Unites States veteran and military populations in reducing suicide and suicide attempts. Eight population-level studies and ten individual-level RCTs were identified. Most population-level studies were observational and suggested reduced suicide rates following interventions, though findings were limited by high risk of bias and lack of control for confounding. The individual-level RCTs primarily assessed various psychotherapies and collaborative care approaches, showing potential benefit but without conclusive evidence on adverse effects or the role of concurrent pharmacotherapy. Overall, the strength of evidence was low or insufficient for most outcomes, particularly for suicide attempts and harms.

Substance Misuse Programmes

One Cochrane systematic review (Witt et al 2021a) including evidence on a range of interventions from 76 studies across 24 countries. One intervention reviewed a brief intervention targeting alcohol misuse in the emergency department. Based on a single trial there was likely no effect of this intervention on repetition of self-harm by the six-month follow-up.

Prevention: indicated

Education and Training

Gatekeeper Training

One umbrella review (Sharma et al 2024) assessed Gatekeeper Training and Screening Interventions across several trials for their impact on self-harm among young people. One trial using the Youth Risk Behaviour Survey provided low-certainty evidence suggesting that selective Gatekeeper Training may reduce self-harm compared to a waitlist control (Sharma et al 2024).

Training primary care physicians

No Umbrella or Cochrane systematic reviews on training primary care physicians were identified in the database searches. One systematic review identified in the National Strategies aimed to assess whether suicide prevention delivered by General Practitioners (GPs) resulted in a reduction of suicide deaths, self-harm presentations and thoughts about suicide (Milner et al 2017). Drawing on 14 studies, they found that GP-led interventions were associated with a significant reduction in suicide rates when evaluated using pre-post designs with historical controls, but this effect was not observed when comparisons were made with other regions. Results for suicide attempts and self-harm

outcomes were inconsistent, with some studies showing benefit and others indicating potential harm. The authors concluded that the evidence for GP training interventions is mixed and dependent on study design and outcome and therefore did not support their widespread implementation.

Telephone

One umbrella review and one Cochrane systematic review examined telephone interventions. Siadat and colleagues (2024) examined a broader range of technology-based interventions in adults, including online CBT, mobile apps, and virtual reality tools. A meta-analysis of six systematic reviews from five countries found a small overall reduction in suicidal ideation, though with moderate heterogeneity across studies.

Witt et al (2021) evaluated a multimodal intervention package for adults, comprising CBT-based psychotherapy, remote contact (e.g. letters, phone calls, postcards), and GP vouchers, across three Zelen RCTs involving adults presenting to emergency departments following self-harm. Overall, there was no evidence of an effect on repetition of self-harm or time to self-harm repetition compared to treatment as usual (TAU). One trial reported a reduction in the frequency of self-harm episodes; however, this finding was based on a small sample and judged to be of very low certainty.

Postvention

An intervention to support children and adolescents bereaved or affected by a suspected suicide was examined by one study included in one umbrella review (Morken et al 2020). This very low-quality evidence study reported a reduction in suicide in a three-year follow-up period however due to large confidence intervals results are uncertain.

Treatment/Maintenance

Screening

Laflamme et al (2022), an umbrella review, examined three types of interventions for adults over 60 and found that only primary care–based collaborative care met sufficient methodological quality. This intervention involved coordinated efforts between case managers and physicians to identify and manage depression and suicide risk. It showed reductions in self-harm (both attempts and ideation) and suicidal ideation at 4, 6, and 8 months. However, findings at the 24-month follow-up were mixed, with one trial reporting no significant effect and two others showing a sustained reduction in suicidal ideation.

Psychotherapeutic

The majority of evidence from the umbrella and Cochrane review reviews (n=6) examined psychotherapeutic interventions. This included three Cochrane systematic reviews and three umbrella reviews. Four reviews focused on young people and children (Bennett et al

2015, Morken et al 2020, Sharma et al 2024, Witt et al 2021b), one review included participants of all ages (Siadat et al 2024) and one review focused on adults (Witt et al 2021a). Overall, evidence was inconsistent on the effect of psychotherapeutic interventions on suicidal behaviour.

A number of reviews examined the effectiveness of CBT and DBT in reducing self-harm and suicidal ideation, with mixed results and generally low to moderate certainty evidence. Bennett et al (2015) reported that across nine reviews, evidence for both CBT and DBT remained inconclusive. Morken et al (2020) found low-certainty evidence suggesting that interventions such as CBT and DBT may reduce repeated self-harm and suicidal ideation in young people in the short to medium term, though no suicides were reported across studies. Similarly, Sharma and colleagues (2024) reviewed four trials involving CBT, DBT, Collaborative Assessment and Management of Suicidality Framework (CAMS), and problem-solving therapies, and found low-certainty evidence indicating these interventions may slightly reduce self-harm and suicidal ideation, although effects were inconsistent and data on repeated self-harm were limited and uncertain. Witt et al (2021a) reported that DBT may reduce the frequency of repeated self-harm in adults but showed no clear effect on the overall rate of self-harm or suicidal ideation over time. In contrast, CBT in adults may offer some benefit in reducing self-harm, particularly at longer-term follow-up. Among young people, CBT showed little to no effect, while DBT for adolescents (DBT-A) appeared more promising, with evidence from four trials suggesting it may reduce both self-harm repetition and suicidal ideation post-intervention, with no suicides reported in most trials during follow-up.

Evidence on mentalisation-based therapy (MBT) for reducing self-harm and suicidal behaviour was limited with generally low to very low certainty evidence. Morken and colleagues (2020) reported one study suggesting that MBT may reduce repetition of self-harm over 12 months and no suicides occurred in either treatment or control groups. In adults, Witt et al (2021) found MBT may reduce both the occurrence and frequency of repeated self-harm compared to TAU, based on one trial, with no suicides reported. Witt (2021) reported mixed findings from two trials evaluating MBT for adolescents (MBT-A), with unclear effects on self-harm repetition and no reported suicides during follow-up.

Witt et al (2021) examined one off brief intervention delivered to adults presenting to the emergency department. The integrated Motivational-Volitional (IMV) model of suicidal behaviour did not have an effect on reducing the occurrence or frequency of repeated self-harm when compared to TAU.

Morken et al (2020) and Witt et al (2021b) examined the association between group-based psychotherapy and family-based interventions in children and adolescents. Both reviews

found no effect on repetition of self-harm at six months, however there was a slight reduction in self-harm repetition at 12 months when compared to TAU. Home-based (Morken et al 2020) and clinic based (Witt et al 2021) family interventions showed little to no effect.

Witt et al (2021a) examined group-based emotion-regulation psychotherapy for women with borderline personality disorder. Two trials which focused on managing self-harm urges rather than requiring abstinence, showed a likely reduction in repeated self-harm by the end of treatment. However, it did not appear to impact how frequently self-harm occurred. No suicide deaths were reported in either study. Similarly, one trial evaluating psychodynamic psychotherapy found little to no effect on overall rates of repeated self-harm. However, participants receiving the intervention appeared to take longer before repeating self-harm. No suicide deaths occurred in the study (Witt et al 2021a).

Enhanced care/follow up

Enhanced treatment was explored by two umbrella reviews and two Cochrane systematic reviews. The effectiveness of enhanced therapeutic assessment and compliance enhancement interventions for children and adolescents were examined by two reviews (Morken et al 2020, Witt et al2021b). Witt et al (2021b) reported that, based on single trials, neither intervention significantly reduced self-harm repetition at 6, 12, or 24 months, however, participants in the compliance enhancement group appeared to engage in slightly fewer repeat self-harm episodes on average. Similarly, Morken et al found very low certainty evidence from one study suggesting no clear effect of intervention on self-harm repetition at 6 months.

Remote contact interventions, including approaches such as emergency cards and postcards, generally showed little evidence of reducing repetition of self-harm by follow-up. Emergency cards did not demonstrate a reduction in self-harm in young people by 12 months (Witt et al 2021b). Postcard-based interventions yielded mixed results across low- to very low-quality studies: while one study suggested a potential reduction in suicide attempts and suicidal ideation, another found no difference in rates of self-harm such as cutting (Morken et al 2020).

However, a separate review focusing on youth suicide prevention concluded that emergency department interventions combined with post-discharge follow-up can reduce deaths by suicide, based on evidence from randomised controlled trials and case-control studies (Bennett et al 2015).

Witt et al (2021a) also assessed whether continuity of care with the same therapist after hospital discharge influenced self-harm outcomes in adults. In this trial, participants who

continued therapy with their original hospital therapist were compared to those referred to a specialised suicide prevention centre with a new therapist. The study found no clear difference in repetition of self-harm over 12 months.

Witt et al (2021a) investigated structured follow-up by general practitioners in adults with prior self-harm and found little to no effect on self-harm recurrence, on hospital or emergency records. There was also no observed effect on suicidal ideation or completed suicide. A review examining collaborative care interventions in primary care, where physicians and case managers coordinated depression and suicide risk management, showed a significant reduction in self-harm and suicidal ideation at 4, 6, and 8 months. Findings at the 24-month mark were inconsistent, with one trial reporting no significant difference and two others indicating ongoing reductions in suicidal ideation (Laflamme et al 2022).

One Cochrane systematic review (Witt et al 2021a) evaluated the effect of providing general information and support. While this approach showed no impact on self-harm repetition by 18 months, there was evidence suggesting a potential reduction in suicide deaths over the same period.

6.2 Combining evidence on interventions for suicide prevention before and after 2015

The HRB review (2015) conducted to inform the development of Connecting for Life (2015) aimed to identify suicide prevention interventions. Systematic searches of five relevant databases were conducted, to identify systematic reviews in English, from any date up to 2015. A total of 34 systematic reviews were included in the review (HRB, 2015).

To have an overall understanding on the levels of evidence before and after 2015, we synthesised findings from the Umbrella and Cochrane reviews and National Strategies (looking at 2015-2025 evidence), with the HRB review (pre 2015 evidence).

Interventions with strong levels of evidence

Means Restriction

Post-2015 evidence: Strong and consistent support across Cochrane, umbrella reviews, and national strategies. Interventions such as installing physical barriers, restricting pesticide use, and limiting access to pharmaceuticals were associated with significant reductions in suicide rates.

Pre-2015 evidence: Also demonstrated effectiveness that means restriction in the form of barriers reduced the incidence of suicide. However, evidence for other means restriction interventions were limited and/or weak.

Means restriction is the most robustly supported intervention across all three evidence sources.

Psychotherapeutic interventions

Post-2015 evidence: Consistent to pre-2015 evidence, there was strong evidence to support the effect of CBT in reducing self-harm in adults.

Pre-2015 evidence: CBT and DBT (for people with borderline personality disorder) were found to be the psychotherapeutic interventions with best evidence to show a reduction in suicidal behaviour.

Interventions with Moderate or Promising Evidence

Multilevel programmes

Post-2015 evidence: Limited but encouraging evidence in specific subpopulations such as older adults and youth. Multilevel approaches featured prominently in national plans.

Pre-2015 evidence: Some limited support for interventions involving multiple settings or stakeholders.

School based interventions

Post-2015 evidence: Selective and indicated school-based interventions showed short-term reductions in self-harm and suicidal ideation, although universal approaches had unclear impact.

Pre-2015 evidence: Overall evidence was weak or inconclusive of the effectiveness of school or curricula-based suicide prevention programmes in impacting suicidal behaviour, though some multi-component strategies showed promise for improving protective factors.

Community based interventions

Post-2015 evidence: Evidence for older adults and youth-based community interventions for reduction of suicidal behaviour.

Pre-2015 evidence: Limited evidence, however, community-based interventions for older adults, specifically depression screening, was found to be effective.

Screening

Post-2015 evidence: Featured in some Cochrane reviews and strategies; evidence was mixed.

Pre-2015 evidence: Similarly showed mixed results, but suggested screening high-risk populations coupled with strong referral pathways may be beneficial.

Psychotherapeutic Interventions

Post-2015 evidence: DBT for adolescents showed low to moderate certainty evidence in reducing both self-harm repetition and suicidal ideation in adolescents' post-intervention.

Pre-2015 evidence: Moderate support, particularly for problem-solving therapy, and family therapy. However, study heterogeneity and methodological issues limited certainty.

Enhanced/follow up care

Post-2015 evidence: Mixed evidence and inconclusive findings. Emergency department interventions combined with post-discharge follow-up amongst youth showed reductions in suicide behaviour.

Pre-2015 evidence: One review showed promising results, particularly when care continued after discharge, leading to reduced suicidal behaviours and improved treatment adherence. However, overall, the evidence is inconclusive with mixed evidence.

Interventions with Limited or Mixed Evidence

Awareness-Raising and Media Guidelines

Post-2015 evidence: Frequently included, especially for responsible media reporting and general population awareness. However, supporting evidence was weak or inconsistent.

Pre-2015 evidence: Media guideline effectiveness was inconclusive due to methodological limitations and a lack of rigorous research.

Workplace/Prison Settings

Post-2015 evidence: Limited evidence on the effectiveness of workplace and prison settings interventions for addressing suicidal behaviour.

Pre-2015 evidence: Not addressed directly, pointing to a gap in the earlier evidence base.

Education and training: Gatekeeper training and Primary care staff training

Post-2015 evidence: Limited evidence with inconclusive findings for education and training.

Pre-2015 evidence: Identified as potentially useful when part of a broader approach, but evidence for standalone effectiveness was inconclusive.

Telephone-based Interventions

Post-2015 evidence: Telephone-based services were reviewed, showing mixed or low-certainty results. One meta-analysis found a small overall reduction in suicidal ideation, though with moderate heterogeneity across studies.

Pre-2015 evidence: Preliminary evidence indicated that telemental health (i.e., the provision of healthcare services and medical education though communication technologies) and internet-based CBT might help reduce suicidal behaviour, but research was limited in scope and quality.

Postvention

Post-2015 evidence: Limited evidence with one low-quality study from one umbrella review finding a possible reduction in suicide over three years following an intervention for children and adolescents bereaved.

Pre-2015 evidence: Not addressed directly within this review.

Substance Misuse Interventions

Post-2015 evidence: Limited evidence; one review assessed this intervention type with mixed results.

Pre-2015 evidence: Not a specific focus but often embedded within broader prevention strategies.

7. Discussion

7.1 Key findings

7.1.1 Risk and protective factors

This section synthesises findings from two key sources: (1) 10 umbrella reviews and (2) 33 national Irish studies. Figure 1 summarises the evidence of risk and protective factors for self-harm and suicide based on these sources.

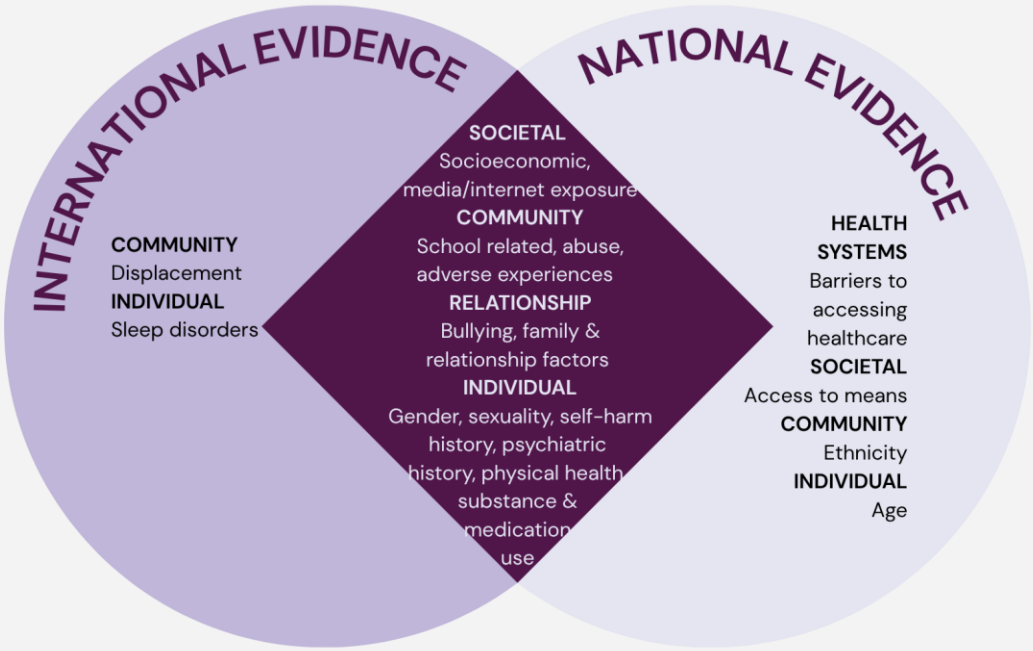

Figure 1. Summary of identified evidence for risk and protective factors

Individual-level factors were the most common risk and protective factors identified by the searches. There was strong evidence of risk associated with various mental health disorders, having a history of self-harm or suicide attempt, substance use, sleep disturbances, physical health conditions such as cancer, identifying as LGBTIQ+, and abuse/adverse experiences. Additionally, being female was associated with greater risk of self-harm across several studies, while being male was associated with elevated suicide risk amongst other studies. Individuals both younger and older in age were also identified as being at-risk across several of the national studies, but no umbrella reviews reported on age-related risk. Additionally, only umbrella reviews reported sleep-related factors, and no included Irish studies examined the impact of sleep. Individual-level protective factors

included strong school connectedness, good sleep hygiene, and broader social policies that reduce economic and structural vulnerabilities.

For relational factors, bullying emerged as a strong risk factor. Other relational factors, such as adverse family environments and interpersonal issues were also associated with increased risk, while caregiver resilience may act as a protective factor.

For community factors, both umbrella review and national studies found that school-related adversity was a significant risk factor. Additionally, the umbrella reviews found that displacement was a risk factor amongst refugees, and the national studies identified that ethnicity-based disparities among Irish Travellers was associated with elevated risk.

Societal risk factors included a range of socioeconomic factors, such as socioeconomic disadvantage, deprivation, and insecure housing and employment, with protective factors including unemployment benefits and social protection reforms. Additionally, sensationalised or biased media coverage was associated with increased risk.

There was a notable absence of reporting on risk and protective factors at the health systems level, limiting the ability to draw definitive conclusions.

7.1.2 Suicide prevention interventions

This section synthesises findings from three key sources: (1) Ten systematic and umbrella reviews published between 2015 and 2024 (2) Six national suicide prevention strategies from high-income, English-speaking countries (3) A HRB umbrella review of 34 systematic reviews published prior to 2015, conducted to inform Ireland's Connecting for Life strategy. Figure 2 summarises the levels of evidence for self-harm and suicide related interventions based on the three key sources. Of the twelve interventions from Platt and Niederkrotenthaler's (2020) framework, evidence of nine of these interventions were found from the database searches, indicating high-quality of evidence as these were from Cochrane systematic reviews and umbrella reviews. However, not all interventions provided strong levels of evidence, with some highlighting moderate or mixed levels of evidence. When examining evidence for interventions across the three sources, only means restriction and CBT for adults (Psychotherapeutic intervention) had strong levels of evidence. As summarised in Figure 2, there were moderate levels of evidence for multilevel programmes, school and community-based interventions, screening, enhanced follow up care, and DBT for adolescents (Psychotherapeutic intervention). Lastly, there were limited levels of evidence for awareness raising, media reporting, workplace, prison and armed forced interventions, education and training, telephone-based services, postvention, and substance misuse programmes.

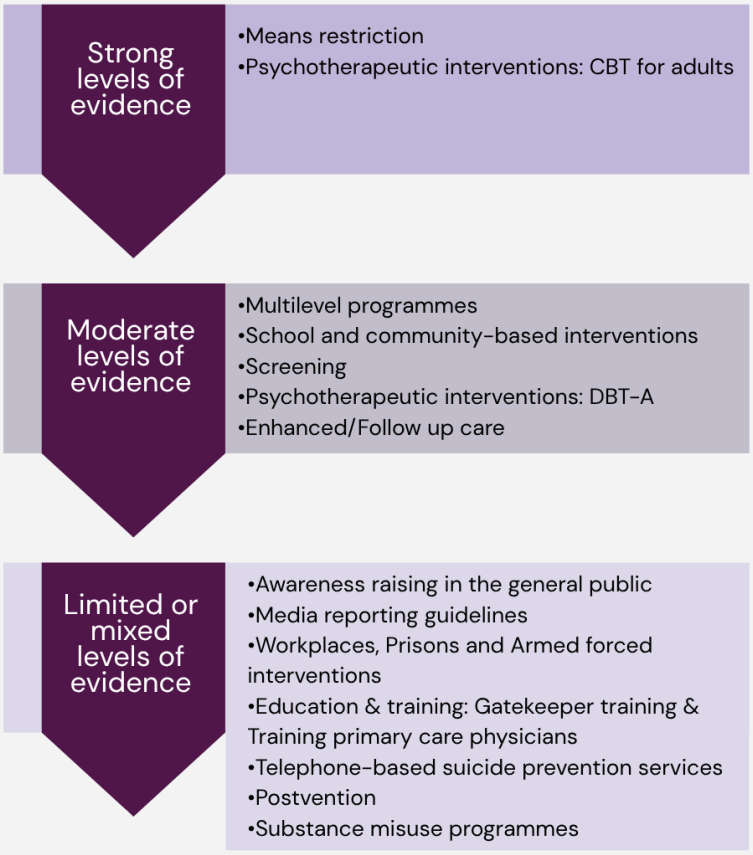

Figure 2. Levels of evidence for self-harm and suicide related interventions

7.2 Strengths and limitations

We undertook comprehensive reviews of risk and protective factors and suicide prevention interventions. We endeavoured to capture high-quality and relevant evidence in both reviews, by focusing on umbrella reviews published within the past 10 years. In addition, we searched for Cochrane reviews (generally recognised as gold standard reviews) for evidence of suicide prevention interventions. We then compared these findings with the results from a previous review (HRB, 2015) to identify emerging evidence in more recent years. We categorised our findings using established frameworks (WHO 2014, Platt and Niederkrotenthaler, 2020) and for the intervention reviews, we rated these according to the strength of evidence associated with them. We also prioritised reporting of findings from settings (i.e. high-income countries) comparable with Ireland. Related to this, we also searched recent national studies to identify risk and protective factors specific to the Irish context. However, we did not include studies reporting on regional data or those using a qualitative methodology. Gaining further insight on lived experiences of self-harm and

suicide could have been incorporated from qualitative studies, however it was outside the scope of our research.

Nevertheless, we acknowledge that this review reports on evidence for more established interventions and does not cover evidence on more recent and emergent areas (e.g. online environment, climate change, artificial intelligence, political turmoil and armed conflict) (Niederkrotenthaler et al 2025), some of which have been identified through the public consultation process (NSRF, 2025).

Due to time constraints, we were unable to formally assess the quality of included studies. In addition, titles and abstracts were single screened. However, validation checks were conducted to ensure consistency of applying inclusion and exclusion criteria.

7.3 Findings in relation to themes emerging from the public consultation process

A number of areas for improvement in suicide prevention were identified from the public consultation process undertaken by the Department of Health and National Suicide Research Foundation (NSRF, 2025). These included targeted supports and interventions, education and stigma reduction, and the role of the social determinants of health.

Evidence for interventions to address social determinants

Our review found that most of the evidence for suicide prevention interventions related to *selective* or *indicated* interventions, which focus on 'at-risk' populations or individuals with identified mental health conditions. However, it is important to acknowledge that there is increasing evidence for the impact of broader contextual factors including the social determinants of health (Gallagher et al 2025, Hawton and Pirkis, 2024), the conditions in which people grow, live, work, and age. This was also reflected in the findings from the public consultation process (NSRF, 2025), and in recent national suicide prevention strategies (e.g. Australia). This approach suggests that policy should place greater emphasis on upstream approaches to these modifiable factors via *selective* and *universal* interventions, in addition to further implementation of *indicated* interventions (Hawton and Pirkis, 2024).

While this report found promising evidence for certain *universal* approaches, including restricting access means, public awareness and media reporting, we didn't identify any Cochrane or umbrella reviews which focused on measures to target the impacts of socioeconomic and work-related factors. Given the strong association between these factors and rates of suicide (Gallagher et al 2025, McMahon et al 2024, Corcoran et al 2015), interventions which address population wellbeing, income protection, minimum

wage, social safety nets, debt relief, active labour market and healthy workplaces, should be considered (Pirkis et al 2024, Mathieu et al 2022, Shand et al 2022, Machado et al 2022, Gertner et al 2019), and are supported by evidence from a recent rapid review (Etherson et al 2024).

Recently, there has been calls for suicide prevention policy to also acknowledge and address the role that commercial determinants play in influencing suicide across populations (van Schalkwyk et al 2023, Pirkis et al 2024). These commercial determinants can reflect industries which play an important role in suicide, including pharmaceutical, alcohol, firearms, pesticides and gambling (van Schalkwyk et al 2023, Pirkis et al 2024).

Targeted supports and interventions: postvention

According to recent data from the Healthy Ireland Survey (2024), 69% of Irish adults have known someone who has died by suicide. The negative impacts of suicide bereavement are significant, with 38% of bereaved Irish adults reporting thoughts of self-harm or suicide as a direct result of their bereavement (O'Connell et al 2022), with that proportion rising to 58% of young adults. Despite there being increased recognition that 'postvention is prevention', as reflected in the public consultation process (NSRF, 2025), strong evidence for postvention interventions is lacking (Andriessen et al 2014). Recent research in Ireland has found that supports for people bereaved by suicide should be timely and ongoing, and responsive to the needs of the individuals and communities impacted, with interventions developed in collaboration with those representing lived experience (O'Connell et al 2022, Cully et al 2025).

Education and stigma reduction

Greater public awareness of suicide and mental health was a core theme arising from the public consultation and perceived as a barrier to accessing help for many, primarily for marginalised groups. This is perhaps reflected in our review of risk factors, identifying men, LGBTIQ+ and minority ethnic groups as being at higher risk of suicide. Our review found that strategies to address stigma (e.g. increasing public awareness, training) had limited evidence associated with them, but were highlighted as being important to implement alongside other interventions, i.e. as part of multilevel interventions.

Healthcare systems, services and structures

Findings from the public consultation highlighted a need for accessible quality services for people experiencing mental health conditions or suicidal crises (NSRF, 2025). Issues relating to accessibility, continuity of care, timeliness, and cost-related barriers were mentioned in the public consultation survey. Our evidence synthesis on risk and protective factors highlighted a significant gap in literature reporting health system-level influences.

However, a national study found that standardising care for self-harm in EDs improves processes of care for patients (Cully et al 2023, O'Connell et al 2024). In addition, both national (Byrne et al 2021) and international (MacDonald et al 2020, Quinlivan et al 2021) qualitative studies have examined how improvements to the healthcare systems level can help patients' experiences when presenting with suicidal crises. Specifically, over-standardisation of treatment, high waiting times, poor ED environments, poor medical care, and stigmatising attitudes were mentioned as barriers to quality services (MacDonald et al 2020, Quinlivan et al 2021).

7.4 Identified gaps and opportunities within the Irish context

In addition to these key areas, we have identified areas with good levels of evidence specific to the Irish context, as well as gaps compared to international evidence (see Figure 3).

There is strong and emerging evidence stemming from national surveillance systems such as the National Self-Harm Registry Ireland, the National Probable Suicide Monitoring System (NPSMS, formerly the Irish Probable Suicide Deaths Study) and Healthy Ireland Survey, which provide important data on risk and protective factors for self-harm and suicide in the Irish population, highlighting risk profiles according to age and gender, ethnicity, occupation, and area of residence. Studies from Ireland were unique in identifying the association between suicide and self-harm and health system and healthcare barriers, such as travel time to hospital.

Nevertheless, our review identified a number of significant gaps in the current literature, both in Ireland and internationally. These included a relatively limited long-term prospective studies, which in Ireland is reflective of a paucity of national cohort and data linkage studies.

Primarily via research commissioned as part of Connecting for Life, there is growing evidence for the risk profile of vulnerable groups within the Irish population, including prisoners, those experiencing homelessness and certain occupational groups including farmers and veterinarians. There were some groups for which there were very few/no reviews of interventions or studies of risk factors, including the Irish Traveller population and other ethnic minority groups, the LGBTIQ+ population, people experiencing neurodevelopmental disorders such as autism spectrum disorder (ASD) and attention deficit hyperactivity disorder (ADHD), and refugees or migrants.

Evidence	Gaps
• Strong epidemiological data on sociodemographic and community factors from national surveillence systems (NSHRI; IPSDS) • Detailed gender and age specific analyses for self-harm and suicide • Health systems and healthcare barriers • Identification of some risk groups such as homelessness, prisoners, certain occupational groups	• Limited long-term prospective studies • Limited evidence on some groups (eg LGBTIQ+, neurodivergence) • Limited data on intervention effectiveness • Limited exploration on protective factors

Figure 3. Evidence and gaps of Irish National data for risk and protective factors of self-harm and suicide

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Richardson R, Connell T, Foster M, Blamires J, Keshoor S, Moir C, et al. Risk and protective factors of self-harm and suicidality in adolescents: an umbrella review with meta-analysis. J Youth Adolesc. 2024;53(6):1301–22.

Sahle BW, Reavley NJ, Li W, Morgan AJ, Yap MB, Reupert A, et al. The association between adverse childhood experiences and common mental disorders and suicidality: an umbrella review of systematic reviews and meta-analyses. Eur Child Adolesc Psychiatry. 2022;31(10):1489–99.

Shamabadi A, Ahmadzade A, Pirahesh K, Hasanzadeh A, Asadigandomani H. Suicidality risk after using cannabis and cannabinoids: An umbrella review. Dialogues Clin Neurosci. 2023;25(1):50–63.

Shand F, Duffy L, Torok M. Can government responses to unemployment reduce the impact of unemployment on suicide? Crisis. 2022.

Silke C, Heary C, Bunting B, Devaney C, Groarke A, Major E, et al. Examining the relationship between adversity and suicidality and self-harm in Irish adolescents from 2020 to 2022. J Affect Disord. 2024;349:234–43.

Torok M, Calear A, Shand F, Christensen H. A systematic review of mass media campaigns for suicide prevention: understanding their efficacy and the mechanisms needed for successful behavioral and literacy change. Suicide Life Threat Behav. 2017;47(6):672–87.

Troya MI, Griffin E, Arensman E, Cassidy E, Mughal F, Lonergan C, Corcoran P. Hospital-presenting self-harm among older adults living in Ireland: a 13-year trend analysis from the National Self-Harm Registry Ireland. Int Psychogeriatr. 2024;36(5):396–404.

van Schalkwyk MC, Collin J, Eddleston M, Petticrew M, Pearson M, Schölin L, Knipe D. Conceptualising the commercial determinants of suicide: broadening the lens on suicide and self-harm prevention. Lancet Psychiatry. 2023;10(5):363–70.

White P, Corcoran P, Griffin E, Arensman E, Barrett P. The burden of attempted hanging and drowning presenting to hospitals in Ireland between 2007 and 2019: a national registry-based study. Soc Psychiatry Psychiatr Epidemiol. 2024;59(2):235–44.

Wilson MJ, Byrne SJ, Fisher K, Seidler ZE, Kavalidou K. National analysis of hospital-presenting suicidal ideation and self-harm among males. Ir J Psychol Med. 2025:1–9.

Witt K, Milner A, Allisey A, Davenport L, LaMontagne AD. Effectiveness of suicide prevention programs for emergency and protective services employees: a systematic review and meta-analysis. Am J Ind Med. 2017;60(4):394–407.

World Health Organisation. Preventing suicide: a global imperative. Geneva: World Health Organisation; 2014.

Zalsman G, Hawton K, Wasserman D, van Heeringen K, Arensman E, Sarchiapone M, et al. Suicide prevention strategies revisited: 10-year systematic review. Lancet Psychiatry. 2016;3(7):646–59.

9. Appendices

Appendix A

Detailed overview of identification of publications and synthesis of evidence

Risk and protective factors for self-harm and suicide

Database search

Search Strategy

PubMed was searched for keywords relating to suicide and/or self-harm and umbrella reviews.

Search query: (("suicide"[MeSH Terms] OR "suicide, attempted"[MeSH Terms] OR "self injurious behavior"[MeSH Terms] OR "suicidal ideation"[MeSH Terms] OR "suicide, attempted"[MeSH Terms]) AND ("risk"[Title/Abstract] OR "protect*"[Title/Abstract] OR "factor*"[Title/Abstract] OR "assoc*"[Title/Abstract]) AND "review"[Title/Abstract]) AND ((meta-analysis[Filter] OR review[Filter] OR systematicreview[Filter]) AND (english[Filter]) AND (2015:2025[pdat])

Filters: Meta-Analysis, Systematic Review, and reviews, English, from 01 Jan 2015 – 17 April 2025.

Inclusion and exclusion criteria

Inclusion criteria:

- Umbrella reviews examining individual, population-level, and social factors which influence suicide and self-harm
- Demographic and/or clinical subgroups, as well general population
- Peer-reviewed publications
- Articles published between January 2015 to April 2025
- Publications in the English language

Exclusion criteria:

- Grey literature including pre-prints, conference abstracts, book chapters, dissertations, reports
- Primary research studies, systematic reviews or meta-analyses
- Reviews where self-harm/suicide are secondary outcomes

Screening and synthesis of evidence

Searches were conducted April 17, 2025. A total of 1842 records were identified from the selected database (PubMed). After duplicates were removed (n=9), a total of 1831 records were single screened using the review software Rayyan. Two reviewers (GC and GP) screened 1831 titles and abstracts. A third reviewer (IT) completed a validation check of 10% (n=183) the title and abstracts. Following title and abstract screening, 66 papers remained for full text review. These were reviewed (single review) by two reviewers (GC and GP). Any conflicts which arose were resolved through a discussion between authors (GC, GP and IT). Once full text screening was completed a total of 10 articles were included in the review. Risk factors identified included societal, community, relationship and individual level risk factors.

Quality assessment

Quality assessment using a validated tool was not conducted due to time constraints.

Identified publications

Study ID	Article
1	Gallagher et al (2025). The social determinants of suicide: an umbrella review
2	Bevione et al (2024). Risk of suicide and suicidal behavior in refugees. A meta-review of current systematic reviews and meta-analyses
3	Prades-Caballero et al (2024). Factors Associated with Suicidal Behavior in Adolescents: An Umbrella Review Using the Socio-Ecological Model
4	Richardson et al (2024). Risk and Protective Factors of Self-harm and Suicidality in Adolescents: An Umbrella Review with Meta-Analysis
5	Favril et al (2023). Individual-level risk factors for suicide mortality in the general population: an umbrella review
6	Shamabadi et al (2023). Suicidality risk after using cannabis and cannabinoids: An umbrella review
7	McEvoy et al (2023). Risk and protective factors for self-harm in adolescents and young adults: An umbrella review of systematic reviews
8	Sahle et al (2022). The association between adverse childhood experiences and common mental disorders and suicidality: an umbrella review of systematic reviews and meta-analyses.
9	Calati et al (2021). Cancer diagnosis and suicide outcomes: Umbrella review and methodological considerations
10	McClatchey et al (2017). Understanding Suicide Across the Lifespan: A United States Perspective of Suicide Risk Factors, Assessment & Management

National Irish studies

Inclusion and exclusion criteria

Inclusion criteria:

- Studies reporting on national data where the outcome measure included is self-harm and/or suicide
- Demographic and/or clinical subgroups where the outcome measure is self-harm and/or suicide
- In studies where suicidal ideation was reported as a secondary outcome, these data were included and extracted only if the primary outcome was self-harm and/or suicide
- Peer reviewed publications and grey literature including published governmental and non-governmental reports
- Articles published between January 2015 to April 2025
- Publications in the English language

Exclusion criteria:

- Studies reporting on regional or local data only
- Systematic reviews and qualitative studies
- Studies that do not include self-harm and/or suicide outcomes (e.g. report self-harm/ suicidal ideation only).
- Thesis/dissertations and conference abstracts
- Studies only reporting on biological or genetic risk factors

Screening and synthesis of evidence

Papers were collated from a variety of sources. The first source consulted was that of a database created for the purposes of a scoping review of suicide and self-harm studies by researchers in Ireland and Northern Ireland during 2015-2023 (Hursztyn et al 2024). This database contained 630 papers. Papers were excluded for a variety of reasons, including but not limited to, the researcher being Irish, but the data used within the paper not being from an Irish population, papers that were systematic reviews, qualitative studies and studies that focused on suicidal ideation only. 18 studies remained for inclusion after the screening of this database. Second, we identified publications from the NSRF journal article collection (www.nsrf.ie/findings/journal-articles/). This resulted in an additional 11 studies for inclusion. Lastly, the collation of evidence as part of implementation evaluation of Connecting for Life document was consulted, with 4 additional articles identified. This was a single screening process completed by AMM. A total of 33 studies were included.

Quality assessment

Quality assessment using a validated tool was not conducted due to time constraints.

Identified publications

Study ID	Article
11	Griffin et al (2018). Increasing rates of self-harm among children, adolescents and young adults: a 10-year national registry study 2007-2016
12	Cully et al (2019). Method of self-harm and risk of self-harm repetition: findings from a national self-harm registry
13	Hyland et al (2022). Predicting risk along the suicidality continuum: A longitudinal, nationally representative study of the Irish population during the COVID-19 pandemic
14	O'Farrell et al (2016). The area level association between suicide, deprivation, social fragmentation and population density in the Republic of Ireland: a national study
15	Nearchou (2024). Self-harm in young people: investigating the role of resilience and posttraumatic stress related to the COVID-19 pandemic
16	O'Farrell et al (2015). Characteristics of small areas with high rates of hospital-treated self-harm: deprived, fragmented and urban or just close to hospital? A national registry study
17	Bennardi et al (2016). Risk of repeated self-harm and associated factors in children, adolescents and young adults
18	Barrett et al (2018). Self-harm among the homeless population in Ireland: A national registry-based study of incidence and associated factors
19	Corcoran et al (2015). Impact of the economic recession and subsequent austerity on suicide and self-harm in Ireland: An interrupted time series analysis
20	Kavalidou et al (2023). Presentations of self-harm and suicide-related ideation among the Irish Traveller indigenous population to hospital emergency departments: evidence from the National Clinical Programme for self-harm
21	White et al (2024). The burden of attempted hanging and drowning presenting to hospitals in Ireland between 2007 and 2019: a national registry-based study
22	McTernan et al (2023). The incidence and profile of self-harm among prisoners: findings from the Self-Harm Assessment and Data Analysis Project 2017–2019
23	Daly et al (2021). Paracetamol-related intentional drug overdose among young people: a national registry study of characteristics, incidence and trends, 2007–2018
24	Daly et al (2018). Frequently used drug types and alcohol involvement in intentional drug overdoses in Ireland: a national registry study

25	Joksimovic et al (2024). Gender differences in intimate partner violence: Risk factors and associations with suicide
26	Griffin et al (2017). The paradox of public holidays: Hospital-treated self-harm and associated factors
27	Corcoran et al (2019). RF07 Release of 13 reasons why and hospital-presenting self-harm in Ireland
28	Birchall et al (2021). The impact of guidance on the supply of codeine-containing products on their use in intentional drug overdose
29	McMahon et al (2024). Advancing early detection of suicide? A national study examining socio-demographic factors, antecedent stressors and long-term history of self-harm
30	Cox et al (2025). Probable Suicide Among Men in Farming and Agricultural-Related Occupations in the Republic of Ireland: Exploring Coronial Data
31	Daly et al (2020). Repeat Self-Harm Following Hospital-Presenting Intentional Drug Overdose among Young People—A National Registry Study
32	Griffin et al (2023). Suicide risk following hospital attendance with self-harm: a national cohort study in Ireland
33	McEvoy et al (2024). Identifying high-risk subgroups for self-harm in adolescents and young adults: A longitudinal latent class analysis of risk factors
34	Silke et al (2024). Examining the relationship between adversity and suicidality and self-harm in Irish adolescents from 2020 to 2022
35	McTernan et al (2024). Self-Harm in Irish Prisons 2020-2021 – Fourth Report from the Self-Harm Assessment and Data Analysis (SADA) Project
36	Cully et al (2024). Discharged from the emergency department following hospital-presented self-harm: referral patterns and risk of repeated self-harm
37	Troya et al (2024). Hospital-presenting self-harm among older adults living in Ireland: a 13-year trend analysis from the National Self-Harm Registry Ireland
38	Reynolds et al (2025). A qualitative analysis of people who died by suicide and had gambling documented in their coronial file
39	Wilson et al (2025). National analysis of hospital-presenting suicidal ideation and self-harm among males
40	Healthy Ireland Survey (2024). Healthy Ireland Survey 2024.
41	Cox et al (2022). Irish Probable Suicide Deaths Study (IPSDS) 2015–2018
42	Higgins et al (2024). Being LGBTQI+ in Ireland: The national study on the mental health and wellbeing of the LGBTQI+ communities in Ireland
43	Dooley et al (2019). My World Survey 2: The National Study of Youth Mental Health in Ireland

Interventions for suicide prevention

Database searches

Search strategy

Three databases (PubMed, Embase and Cochrane Library) were searched for keywords relating to suicide and self-harm related interventions from Cochrane systematic reviews or Umbrella reviews.

Search query:

PubMed: (("suicide"[MeSH Terms] OR "suicide, attempted"[MeSH Terms] OR "self injurious behavior"[MeSH Terms] OR "suicidal ideation"[MeSH Terms] OR "suicide, attempted"[MeSH Terms]) AND (("review"[Title/Abstract] OR "meta-analysis"[Title/Abstract] OR "metaanalysis"[Title/Abstract]) AND (("prevention"[Title/Abstract] AND "intervention"[Title/Abstract]) OR "means restriction"[Title/Abstract] OR "media guidelines"[Title/Abstract] OR "community based interventions"[Title/Abstract] OR "postvention"[Title/Abstract] OR "training"[Title/Abstract] OR "coping skills"[Title/Abstract] OR "problem solving skills"[Title/Abstract] OR "psychosocial"[Title/Abstract] OR "crisis intervention"[Title/Abstract] OR "mental health treatment"[Title/Abstract] OR "risk assessment"[Title/Abstract] OR "stigma reduction"[Title/Abstract]) AND (("meta-analysis"[Publication Type] OR "review"[Publication Type] OR "systematic review"[Filter]) AND 2015/01/01:2025/04/14[Date - Publication] AND "english"[Language]) AND (("meta-analysis"[Publication Type] OR "review"[Publication Type] OR "systematic review"[Filter]) AND 2015/01/01:2025/04/14[Date - Publication] AND "english"[Language]) AND ((meta-analysis[Filter] OR review[Filter] OR systematicreview[Filter]) AND (2015/1/1:2025/4/14[pdat]) AND (english[Filter])

Embase:
1. prevention:ti,ab AND (intervention:ti,ab OR 'means restriction':ti,ab OR 'media guidelines':ti,ab OR postvention:ti,ab OR training:ti,ab OR 'coping skills':ti,ab OR 'problem solving skills':ti,ab OR psychosocial:ti,ab OR 'mental health treatment':ti,ab OR 'risk assessment':ti,ab OR 'stigma reduction':ti,ab)

2. 'suicidal behavior'/exp OR 'suicidal behavior'

3. 'suicide'/exp OR 'suicide'

4. 'automutilation'/exp OR 'automutilation'

5. 'suicide attempt'/exp OR 'suicide attempt'

6. 'systematic review':ti,ab OR 'meta-analysis':ti,ab OR 'meta analysis':ti,ab OR review:ti,ab

7. 2 OR 3 OR 4 OR 5

8. 1 AND 6 AND 7

9. Add English filters and 2015-2025

Cochrane Library: (suicid* OR parasuicid* OR self injur* OR self harm* OR self mutil* OR attempt* suicid*):ti,ab,kw AND (prevent* AND intervent* OR means restriction OR media guidelines OR postvention OR training OR coping skills OR problem solving skills OR psychosocial OR mental health treatment OR risk assessment OR stigma reduction):ti,ab,kw
Filters: English and studies published from 2015-2025

Inclusion and exclusion criteria

Inclusion criteria:

- Umbrella reviews (review of reviews) on suicide (including self-harm) prevention intervention or interventions
- Cochrane systematic reviews or meta-analyses of suicide (including self-harm) prevention intervention or interventions
- Articles where the outcome measured includes suicide and/or suicidal behaviour (suicidal ideation, self-harm) as a primary outcome
- Articles published between start January 2015 and April 1, 2025
- Publications in English language.

Exclusion criteria:

- Single studies, non-Cochrane systematic reviews or meta-analyses of suicide prevention intervention or interventions
- Reviews where pharmacotherapy is the sole intervention
- Reviews of risk/protective factors, at-risk populations, and suicide methods that did not assess which interventions worked but used their findings to make recommendations for what could/should work
- Reviews of interventions that had suicide/suicidal behaviours as one of their secondary outcomes

Screening and synthesis of evidence

Searches were conducted April 14, 2025. A total of 1655 records were identified from the three databases (Embase n=793, PubMed n=587, Cochrane n=285). After duplicates were removed (n=276), a total of 1389 records were screened using the review software Rayyan. One reviewer screened 1389 titles and abstracts, and a second reviewer (AMM) did a 10% (n=140) validation check of the same. 4 articles were identified as conflicts and subsequently resolved following discussion between AMM and IT. 130 articles were selected to be screened at full text-stage where one reviewer (IT) screened 100% of these articles and

a second reviewer (AMM) did a 10% (n=13) validation check. One article was identified as conflict and subsequently resolved following discussion between AMM and IT. Once full-text screening had been completed, a total of 10 articles were selected to be included in the review. Of the 10 articles, 3 reported on pharmacological interventions, but were included as findings from other non-pharmacological interventions could be extracted separately.

Quality assessment

Quality assessment using a validated tool kit was not conducted due to time constraints.

Identified publications

Study ID	Article
1	Bennett et al (2015). A youth suicide prevention plan for Canada: A systematic review of reviews
2	Laflamme et al (2022). Prevention of suicidal behavior in older people: A systematic review of reviews
3	Morken et al (2020). The effects of interventions preventing self-harm and suicide in children and adolescents: an overview of systematic reviews
4	Nevarez et al (2024). Means Restriction for Suicide Prevention: An Umbrella Review
5	Okolie et al (2020a). Means restriction for the prevention of suicide by jumping
6	Okolie et al (2020b). Means restriction for the prevention of suicide on roads
7	Sharma et al (2024). Prevention of self-harm and suicide in young people up to the age of 25 in education settings
8	Siadat et al (2024). Technology-based suicide prevention: An umbrella review
9	Witt et al (2021a). Psychosocial interventions for self-harm in adults
10	Witt et al (2021b). Interventions for self-harm in children and adolescents

Studies identified from national suicide prevention strategies

Inclusion and exclusion criteria

Inclusion criteria:

- Studies on suicide (including self-harm) prevention or interventions
- Before and after studies, pilot Randomised Controlled Trials, Randomised Controlled Trials, Systematic reviews, Umbrella reviews
- Articles where the outcome measured includes suicide and/or suicidal behaviour (suicidal ideation, self-harm) as a primary outcome
- Articles published from January 2015 onwards
- Publications in English language.

Exclusion criteria:

- Studies where pharmacotherapy is the sole intervention
- Interventions that had suicide/suicidal behaviours as one of their secondary outcomes
- Interventions that had already been identified by the database searches

Screening and synthesis of evidence

Searches of relevant national suicide prevention strategies were done between May and June 2025 from the International Association for Suicide Prevention (2025) Partnerships for Life online website and additional correspondence with country partners. A total of six national suicide prevention strategies from high-income, English-speaking countries with similar contexts to Ireland were identified and reviewed. Once the relevant national suicide prevention strategies had been identified, one reviewer (IT) screened the references of these to identify additional relevant interventions not captured through the initial database searches. This process followed the analytical framework proposed by Platt and Niederkrotenthaler (2020). We report on six studies.

Quality assessment

Quality assessment using a validated tool kit was not conducted due to time constraints.

Identified studies

Study ID	Article
11	Hofstra et al (2020). Effectiveness of suicide prevention interventions: A systematic review and meta-analysis
12	Niederkrotenthaler et al (2020). Association between suicide reporting in the media and suicide: systematic review and meta-analysis
13	Witt et al (2017). Effectiveness of suicide prevention programs for emergency and protective services employees: A systematic review and meta-analysis
14	Carter et al (2022). Interventions to reduce suicidal thoughts and behaviours among people in contact with the criminal justice system: A global systematic review
15	Nelson et al (2017). Suicide risk assessment and prevention: a systematic review focusing on veterans
16	Milner et al (2017). The effectiveness of suicide prevention delivered by GPs: a systematic review and meta-analysis
17	Torok et al (2017). A systematic review of mass media campaigns for suicide prevention: understanding their efficacy and the mechanisms needed for successful behavioral and literacy change

Appendix B

Description of characteristics and findings of included publications

Risk and protective factors for self-harm and suicide

Database search

Supplementary Table 1. Characteristics of risk factor studies identified from database searches

Review / study	Aim	Population of interest	Primary and secondary outcomes	Description of risk factors	Year range of included studies	Number of included studies	Countries of origin	Results
Bevione et al 2024	We aimed to establish more precise estimates of suicide and suicidal behaviour in refugees and asylum seekers, investigate the role of somatic and psychiatric comorbidities, and the effectiveness of preventative interventions.	Refugees (both children and adults)	**Primary;** Suicide, suicide attempt **Secondary:** Suicide plans, suicidal ideation	The exposure was displacement	2012-2022	10	Canada, Denmark, Sudan, Nigeria, Lebanon, Slovenia, Germany, Austria, Bangladesh, USA, Pakistan, Australia, South Korea, Palestine, Thailand, Columbia, India, Syria, Uganda, Malaysia, Afghanistan	Refugees showed significantly higher suicide death rates and suicide attempt prevalence compared to people living in the host countries. Refugees who arrived in low-income and lower-middle-income countries displayed lower suicidal ideation, but higher suicide death rates and suicide attempt prevalence compared to refugees who arrived in high-income and upper-middle-income countries. Refugees have been proven to be at risk for suicide and suicidal behaviour. More research is required to identify the targets and procedures of intervention.

Prades-Caballero et al 2024	this study conducts a systematic umbrella review with the aim of analysing factors associated with suicidal behaviour in adolescents from the socioecological framework of suicide prevention and identifying existing gaps in the literature. This review seeks to contribute to a holistic understanding of suicidal behaviour by providing a rigorous, interdisciplinary, and critical analysis that serves as a foundation for	adolescents (aged 12-20)	**Primary:** Suicidal behaviour	Factors are categorised per SESPM Model: Risk Factors: Individual level; depression, anxiety, impulsivity, substance use, social media addiction, poor sleep, low self-esteem, belonging to a sexual/gender or ethnic minority group. Interpersonal; family conflict, parental neglect or abuse, peer pressure or bullying, social isolation, exposure to suicide, history of abuse. Community level; school failure, violence in the community. societal level; stigma, structural poverty Protective factors; Individual; resilience, interpersonal; positive family, peer	2018-2024	37	Not reported	risk and protective factors were categorised into four levels of the socioecological model; individual risk, interpersonal-level risk, community level risk and societal-level risk. protective factors were underrepresented in the literature. individual risk; 27 studies addressed individual risk. individual-level risk factors included things such as mental health disorders like anxiety, depression, bipolar etc, substance use, sleep problems, and belonging to a minority group such as the LGBTQ+ community. One study found that adolescents who use cannabis are 6-16 times more likely to attempt suicide than non-users. Another found risk increases up to 4.1 times when use begins before age 13. Changes in sleep quality and quantity were seen to negatively impact young people. Lack of sleep reduces serotonin levels, impairs impulse control and judgement, and decreases problem-solving skills. Increasing sleep duration by one hour can reduce the risk of suicidal ideation by up to 11%. Interpersonal-level risk factors; 17 studies reviewed interpersonal-level risks. The studies showed that suicide

	future research and comprehensive intervention strategies, encompassing all relevant factors and disciplines involved, and allowing for a paradigm shift in the study of suicide. The main objectives of this type of review are to address the growing number of systematic reviews and meta-analyses, to provide a clear and comprehensive evidence base regarding its findings, as well as gaps and research needs.			and community connections community/societal; resources such as crisis hotlines, school intervention programmes (only 5 of the 37 reviews focused on protective factors)				risk was associated with problems with the family environment, including violence, conflict and history of family mental illness, other factors which increased vulnerability to suicidal ideation and behaviours included stressful events such as bereavement, sexual, physical and emotional abuse in childhood and exposure to suicide. Community-level risk; this included school related issues and media coverage. One study highlighted that sensationalised and biased media coverage of suicides can have significant negative effects. School related issues were also discussed within this factor. One study suggested that academic pressures may be associated with suicidal behaviours as suicide rates tend to be lower during non-school periods such as vacations. Societal-level risk factors; The studies included in this review do not address these factors. Existing literature overemphasises psychological and psychiatric risk factors and underrepresented protective, community and societal factors. This study suggests a move to

								view adolescent suicidal behaviour as a transdisciplinary phenomenon, with a relationship between individual and social contexts. Only then can interventions be tailored to the specific needs of adolescents at risk.
Richardson et al 2024	This study aims to use an umbrella review method (systematic review of systematic reviews) to synthesise reviewed studies about adolescent suicidality and self-harm, their risk, and protective factors. The second aim is to identify, summarise, and quantify any findings relating to individual school factors (including absenteeism)	Adolescents (aged 9-25)	**Primary:** Self-harm **Secondary:** Suicidality (suicidality, which encompassed suicidal behaviour (SB), defined as intentional action on self to cause one's death, and suicidal ideation (SI), regarded as thoughts of action to end one's own life with no intent to act)	Risk factors: antidepressants, bullying, sleep disturbance, gender, LGBT, mental health disorders, previous suicidality or self-harm. Protective factors: school, sleep	2011-2023	33	Not reported	Bullying victimisation was the most attributed environmental exposure for suicidality. The other identified significant school and individual factors were sleeping disturbance, school absenteeism, and exposure to antidepressants. Several significant vulnerable young populations were identified with significantly higher prevalence of suicidality, including lesbian, gay, bisexual, transgender, queer (or questioning) youth and those with mental health disorders, problem behaviours, previous suicidality, self-harm, and gender (female). A meta-analysis of two reviews of 24 studies resulted in a pooled OR of bully victimisation to suicide attempts being 2.97 (95% C.I. (confidence interval) 2.53–3.49, p=<0.0001). There were significant heterogeneities across the studies, with I2 (total heterogeneity / total variability) 86.1%. These results provided type III suggestive evidence according to the established criteria of epidemiologic credibility. The bully victimisation PAF for suicide attempts

	from the review literature.							was estimated to be 31.4% for low- and middle income countries and 33.6% for low-, middle- and high income countries. A review of 261 studies reported that the female gender had a pooled RR of 1.72. In a review of 43 studies there was a 25.4% NSSI (non-suicidal self-injury) prevalence for female adolescents compared to a 22% prevalence for males. In a review of 8 studies there was a significant association between female gender and a significant risk of self-harm (OR: 2.89) (odds ratio). Depression, anxiety, personality disorders, and emotional symptoms were all linked to increased risk for self-harm (OR: 1.89) and suicidal behaviour (General mental illness: OR: 3.57, Major Depressive Disorder: OR: 4.49, (females), 6.07 (males), Bipolar Disorder: RR (risk ratio) of 2.94 (95% CI: 2.30, 3.78). A review of six studies with 22,117 participants, reported a pooled OR of 2.26 for the overall relationship between sexual orientation and youth suicidal behaviour.is 2.26. A review of 19 studies reported a pooled OR of 2.92 for the association between sexual orientation and youth suicidality (behaviour and suicidal ideation), the same review found a significant association between

								bisexual youth and suicidal behaviours and ideations (OR:4.92). Use of antidepressants, particularly SSRIs, was associated with a modest but significant increase in suicidal behaviour in youth (OR = 1.92 (Barbui et al 2009), OR = 1.70 (Dubicka et al 2010), RR = 1.58 (Hetrick et al 2012), RR = 1.38 (Li et al 2022). A review of 21 studies, reported a pooled OR of 2.36 for substance use as a risk factor for self-harm. There was higher prevalence of self-harm in adolescents with a smoking history (24.7%) as well as a higher prevalence of self-harm in adolescents with a history of alcohol consumption (24.4%). A review including 14 studies found that sleep disturbances were associated with a higher risk of adolescent suicide attempts (OR: 1.92), adolescent suicidal ideation (OR: 2.35) and suicidal ideation with a plan (OR: 1.58). A review of five studies identified previous suicidal ideation as a significant risk factor for suicidal behaviour in both female youth (OR: 4.39) and male youth (OR: 3.97); female youth were almost six times more at risk to attempt suicide if they have had previous suicide attempts (OR: 6.96). A review including 15 datasets that suicide attempts were significantly

								higher in adolescents who self-harmed (RR: 9.14). Another review reported an increased risk for those with any previous self-injurious thoughts and behaviours (OR: 3.48, 95% CI: 2.71–4.43), suicide ideation history (OR: 3.26), previous NSSI (OR: 2.26), and previous suicide attempts had the largest pooled OR of 5.56.
Favril et al 2023	We aimed to summarise current knowledge on the range and magnitude of individual-level risk factors for suicide mortality in the general population and evaluate the quality of the evidence.	general population	**Primary:** suicide mortality **Secondary:** some papers also included suicide attempts and suicidal ideation	risk factors included; previous suicide attempt, psychiatric disorders, physical illness such as cancer or epilepsy, sociodemographic factors such as unemployment. protective factors included; religious affiliation.	2008-2023	33	Not reported	33 meta-analyses included which discussed risk factors such as psychiatric, physical, and sociodemographic factors. However, only 6 of the 38 factors discussed across the 33 papers were supported by high quality evidence. These 6 risk factors were psychotic disorders, mood disorders, personality disorders, anorexia nervosa, smoking and being in state care in childhood. The 6 that were supported by high quality evidence are as follows. psychotic disorders; this included schizophrenia, one study reported that psychotic disorders increased the risk of suicide 10 fold. Psychotic disorders has a risk ratio of 13.2 (95% CI; 8.6-20.3). Mood disorders; similar to psychotic disorders, mood disorders also had large effect size (these two had the largest effect size.) one study estimated that a 5th of suicide deaths would be

								prevented if exposure to mood disorders were to be eliminated in the population. risk ratio 12.3 (95% CI: 8.9-17.1). Personality disorders: personality disorders also scored a composite score of over 2 and was considered to have high quality evidence to support it as a risk factor to suicide. risk ratio 8.1 (95% CI: 4.6-14.2) Anorexia Nervosa: anorexia nervosa also scored a quality score of 4 and thus was considered one of the 6 risk factors supported by high quality evidence. risk ratio 6.9 (90% CI: 4.1-11.5). smoking as a risk factor was also considered to have high quality evidence within this paper, risk ration, 2.4 (95% CI: 2.1-2.8) . Lastly, being in state care in childhood was the 6th risk factor within this paper that was considered to have high quality evidence supporting it. risk ratio 3.4 (95% CI: 2.4-4.7.
Shamabadi et al 2023	This study aims to identify and appraise systematic reviews investigating suicidality after using cannabis and cannabinoids.	general population	**Primary:** Suicide attempt **Secondary:** Suicidal ideation, unspecified	Not reported	2004-2022	25	Not reported	Twenty-five studies were included, of which 24 were on recreational use and one was on therapeutic use. Only three of the studies on recreational use reported no effect or inconsistent results. Evidence generally showed a positive association between cannabis use and suicidal ideation and attempt among the general population, military

			suicidal behaviour					veterans, and bipolar or major depression patients. Cannabis use was linked to increased suicidal ideation in most of the 18 studies reviewed, including all six meta-analyses, particularly among the general population, adolescents, and those with substance use disorders. While heavy use and a possible bidirectional relationship were highlighted, most studies were of critically low quality. One meta-analysis in epileptic patients found no significant association, but its results were inconclusive due to wide confidence intervals. Cannabis use was also associated with an increased risk of suicidal attempts in 23 reviews, including 11 meta-analyses. Most of these found significant associations, especially in the general population, adolescents, and individuals with bipolar disorder (BD). A dose-response relationship was suggested, with heavy users showing higher odds of attempting suicide. In the general population, heavy cannabis use showed a strong association with suicidal attempts, with an OR of 3.20 (95% CI: 1.72–5.94). There was also an association between cannabis use and

								suicide attempts for adolescents (OR: 2.33 (95% CI: 1.78–3.05) and those with substance use disorders (2.01 (95% CI: 1.01–4.0
McEvoy et al 2023	to synthesise the evidence from systematic reviews and meta-analyses that examined the risk and protective factors for self-harm in young people.	adolescents (aged 10-24)	**Primary:** Self-harm	most common risk factors: childhood abuse, depression/anxiety, bullying, trauma, psychiatric illnesses, substance use/abuse, parental divorce, poor family relationships, lack of friends, and exposure to self-harm behaviour in others most common protective factors; good family/friend relationships were most frequently identified.	2010-2021	61	Not reported	Psychiatric or psychological factors; depression & anxiety, personality disorders, conduct/behavioural disorders, exposure to self harm in others, low self-esteem, impulsivity, hopelessness. These most frequently associated and had the strongest effect size. most of the pOR's (prevalence odds ratio) greater than 2 were from this category, with the largest being conduct disorder with a pOR 8.78 Adverse childhood or life experiences (ACE's); childhood abuse/neglect, bullying, parental divorce, dating violence, trauma, relationship breakups. The most frequent risk factor identified for self-harm by general reviews, within this category bullying had the highest pOR of 6.3. Behavioural factors; substance use, school truancy or drop-out, poor academic performance. Substance abuse or misuse was the most frequently identified risk factor from this category. reviews looked at substance in general, others looked specifically at drugs and had pORs of 4.44, others

								looked specifically at drugs or cannabis and had pORs of 2.69 the largest pOR from this category was school truancy or drop-out, pOR 6.44. Environmental or social factors: poor family relationship, lack of peer support, low socioeconomic status, and being in foster care (pOR 3.89). Individual level physical or fixed factors: being female or being LGBQ. These were identified least out of the 5 categories of risk. Being bisexual had a stronger association with NSSI - pOR of 3 between being LGBQ and NSSI but pOR of 4.37 between NSSI and bisexuality. Protective factors were identified a lot less frequently that risk factors. It's not possible to categorise protective factors in the same way as risk factors as they were too infrequently identified. Protective factors included good sleep quality, pOR of 0.52 between good sleep and suicide attempts , and good school connectedness pOR of 0.59 between having a good school connectedness and suicide attempts.
Sahle et al 2022	To identify the key ACEs that are consistently	Under the age of 18	**Primary:** Suicidality	To define an ACE, we used the World Mental Health	2009-2019	69	Not reported	ACE's: In the meta-analysis of 33 independent associations from 9 meta-analyses, ACEs were associated with a

	associated with increased risk of mental disorders and suicidality.			Surveys list of ACEs as a starting point and updated it to include other ACEs reported in the literature.				two-fold increased odds of suicidality (OR 2.33; 2.11, 2.56; P<0.001; I2=88.6%). The association was significant both in males (OR 2.14; 1.81, 2.53) and females (OR 2.28; 2.03, 2.56). Bullying (both traditional and cyberbullying) was the most frequently reported ACE (28 effect sizes from 6 meta-analyses) associated with suicidality (OR 2.27; 2.06, 2.49). Meta-regressions showed that the associations between ACEs and suicidality did not vary significantly by age at exposure to ACEs (OR 0.88; 0.64, 1.20, P=0.418) or the study design (OR 1.17; 0.90, 1.53, P<0.216). Fourteen linked ACEs (such as parental mental illness, child abuse, and family dysfunction) to increased risk of suicidality. However, two reviews did not find a significant association between suicidality and parental incarceration, or displacement due to violence.
Calati et al 2021	The aim of the present umbrella review (UR) is to appraise the most current evidence about the association between any type of cancer	participants included those diagnosed with cancer. no restrictions on age, sex, or type or	**Primary:** the primary outcome was suicide outcomes among cancer patients. this included death wishes, suicidal	risk factors include; male sex, older age, marital status, time since cancer diagnoses, advanced staged of the cancer, specific cancers had higher risk also. hopelessness and	up to January 23rd 2021	12	Not reported	There is strong evidence of an increased risk of suicide and other suicide-related outcomes in patients diagnosed with cancer. Male sex; several studies found male patients to be at higher risk of suicide than their female counterparts. One study reported an increased suicide risk for cancer patients in both sexes but especially in males (SMR=1.8, 95% CI:

	and suicide outcomes. Our aim was also to evaluate the credibility and quality of the included studies	site of cancer.	ideation, suicide attempts and completed suicides.	psychiatric history, certain treatments had higher risks, pain was also associated with higher risk as well as a sense of being a burden. less focus on protective factors but they included female sex, married individuals, localised cancer, having a strong social support system, spiritual care and/or ketamine treatment.				1.6–2.0; SMR=1.7, 95% CI: 1.5–1.9)(SMR – standardised compared to females (SMR=1.4, 95% CI: 1.3–1.6; SMR=1.3, 95% CI: 1.2–1.5). Older age was also considered a risk factor. Several papers reported sociodemographic risk factors such as age. Single status; being divorced separated, single or widowed was seen to increase risk of suicidal ideation as there's a lower support system. Time; time since diagnosis was a risk factor. Two meta-analysis (Brunckhorst et al 2020; Guo et al 2018) focused on prostate cancer only, reporting its association with suicide and confirming an increased suicide rate in cancer patients (RR=2.0, 95% CI: 1.5–2.6), especially if the diagnosis was made in the last six months (RR=2.2, 95% CI: 1.8–2.8) (Guo et al 2018). Cancer site; some types/sites of cancer were associated with higher suicide risk than others. Du et al. (2020) reported the highest rate of suicide among people diagnosed with oesophagus cancer. Amiri and Behnezhad (2020) found that

								suicide rates in patients with cancer in the bronchus, trachea, and lung (i.E., Respiratory tract) triplicated the rates in other cancer sites such as the oesophagus, stomach, pancreas, and liver (i.e., Gastrointestinal tract), prostate, colon and rectum, female genital organs, breast, and finally melanoma and skin – malignant tumours ranked by frequency, top-down list. Treatment related characteristics. one study found risk increases due to treatment history and characteristics. a history of chemotherapy as well as treatment related symptoms such as pain, fatigue and a sense of being a burden all increased risk.
McClatchey et al 2017	The aim of this systematic review was to update existing suicide risk factor literature applicable to emergency health care settings.	general population	**Primary:** Suicide **Secondary:** Suicidal behaviour	Not reported		35	Not reported	Mental Health: A review of 28 studies including approximately 200,000 individuals reported suicide risk to be greater in males (OR: 1.76, 95% CI: 1.08–2.86), those with a family history of mental disorder (OR: 1.41, CI: 1.0–1.97), and those with a history of suicide attempts or self-harm (OR: 4.84, 95% CI: 3.26–7.20). A review of 42 studies found those with anxiety, compared with patients without, were more likely to have suicide ideation (OR: 2.89, CI: 2.09–4.00), and those with panic disorder having the highest odds (OR:

								4.39, 95% CI: 2.38–8.10). Anxiety patients were more likely to attempt suicide (OR: 2.47, 95% CI: 1.96–3.10), and those with panic disorder having the highest odds (OR: 3.96, 95% CI: 2.13). Physical Health: In one review, three of the five studies supported an increased risk of death by suicide. Two studies found that 7% to 27.3% of veterans with TBI (traumatic Brain Injury) attempted suicide. Overall, findings support an increased risk of suicide among TBI survivors. One review including 20 studies found patients with DM-1 (type one diabetes) have a higher suicide risk than the general population. Most studies found an increase in suicide and behaviours in adults with DM-1. One study found that suicidal behaviour was higher in individuals with DM-1 compared with type 2 diabetes. A review of 15 studies found an increased risk of completed suicide for former compared with never smokers (RR: 1.28, 95% CI: 1.00–1.64). There was an increased risk of suicide for current smokers compared with never smokers (RR: 1.81, 95% CI: 1.50–2.19). Self-harm: A review of 177 studies reported that suicide risk in the 12 months after an index attempt was 1.6%

								(95% CI: 1.2–2.4), 3.9% (95% CI: 3.2–4.8) after 5 years, and 4.2% (95% CI: 3.1–5.6) at 10 years. One-year fatal repetition rate estimates were 2.7% (95% CI: 1.8–4.0) for males and 1.2% (95% CI: 0.7–1.9) for females. One review including 11 psychological autopsy studies with a case–control design that self-harm was very strongly associated with suicidal risk (OR: 16.33, 95% CI: 7.51–35.52). PTSD: One review synthesising 18 studies found PTSD to be associated with an increased risk of suicide ideation, attempts, and completed suicide in veterans. Sleep Disorders: One review synthesising 19 studies reported that patients with comorbid sleep disturbances were more likely to report suicidal behaviours (OR: 1.99, 95% CI: 1.72–2.30), with significant associations between suicidal behaviours and sleep disturbance in depression (OR: 3.05, 95% CI: 2.07–4.48), PTSD (OR: 2.56, 95% CI: 1.91–3.43), panic disorders (OR: 3.22, 95% CI: 1.09–9.45), and schizophrenia (OR: 12.66, 95% CI: 1.40–114.44). Parasomnia had the greatest increased risk of suicidal behaviours (OR: 4.69, 95% CI: 2.58–8.51), and

								sleep-related breathing disorder had the lowest (OR: 2.56, 95% CI: 1.91–3.43). Discharge from psychiatric hospitals: a meta-analysis of 13 studies and found a history of self-harm or a suicide attempt (OR: 3.15, 95% CI: 2.28– 4.33) and depressive symptoms (OR: 2.70, 95% CI: 1.63–4.48) were moderately associated with post discharge suicide within 1 year. Being male (OR: 1.58, 95% CI: 1.16–2.16), experiencing recent social difficulties (OR: 2.23, 95% CI: 1.40–3.53), having a diagnosis of MDD (OR: 1.91, 95% CI: 1.46–2.51), the presence of suicidal ideas (OR: 2.47, 95% CI: 1.76–3.47), or an unplanned discharge (OR: 2.44, 95% CI: 1.71–3.47) were significantly associated with post discharge suicide, albeit weakly. Patients with less contact with services post discharge were significantly less likely to complete suicide (OR: 0.69, 95% CI: 0.51– 0.94). Substance misuse: One review found that three of four studies showed a significantly increased risk of suicide, attempt, and ideation associated with early onset, use, and frequency of cannabis use. A meta-analysis of 16 psychological autopsy studies with a case–control design and found

								substance-related disorders were strongly associated with suicidal risk (OR: 5.24, 95% CI: 3.30–8.31), and risk was stronger in women (OR: 8.34, 95% CI: 2.18–31.82) than men (OR: 3.87, 95% CI: 1.85–8.13). There was an association between methamphetamine and completed suicide in one review and attempted suicide in two reviews. Early adolescent alcohol use onset was significantly associated with suicidality across gender. Parental suicide: Compared with offspring of two living parents, children who lost a parent to suicide were at greater risk of suicide (aOR 1.94, 95% CI: 1.54–2.45) and attempts (aOR 1.95, 95% CI: 1.48–2.57). offspring whose parents attempted suicide were also more likely to die by suicide (OR: 3.40, 95% CI: 2.82–4.10), and attempt suicide (OR: 3.74, 95%CI: 3.54–3.95). Abuse: Results from 9 studies indicated an overall pooled estimate for an association between exposure and suicidal behaviour (OR: 2.43, 95% CI: 1.94–3.05), with all but one being in the direction of increased risk. Results found a significant association between a history of sexual abuse and suicide attempts (OR: 4.14, 95% CI: 2.98–5.76).

								Physically abused (OR: 3.00, 95% CI: 2.07–4.33), emotionally abused (OR: 3.08; 95% CI: 2.42–3.93), and neglected (OR: 1.85,95% CI: 1.25–2.73) individuals had a significantly increased risk of suicidal behaviour compared with non abused individuals. maltreated children (physically, emotionally, sexually, or in combination) have an increased risk of suicide ideation and attempts compared with children who have never experienced maltreatment, with sexual or physical abuse having a median fourfold increased risk, based on 16 studies. All showed positive relationships of intimate partner violence (IPV) and attempts in women, two of which were significant(OR: 3.2, 95% CI: 0.97–103.59; OR: 7.97, 95% CI: 1.75–36.37; b = .12, 95% CI: 0.02–0.22). Results for a meta-analysis of 15 studies Results indicated a significant association between a history of sexual abuse in both child and adulthood with suicide attempts (OR: 4.14, 95% CI: 2.98–5.76). Bullying: Results of a meta-analysis of 36 studies showed a significant relationship between peer victimisation and suicide ideation (OR: 2.23, 95% CI: 2.10–2.37) and attempts (OR: 2.55, 95% CI: 1.95–3.34). Cyberbullying was more

								strongly related to ideation (OR: 3.12, 95% CI: 2.40–4.05) than traditional bullying (OR: 2.16, 95% CI: 2.05–2.28). One review found that cyberbullying appeared to increase the rates of attempted suicide for both victims and perpetrators, with rates increasing 1.9 and 1.5 times, respectively. Sexuality: A meta-analysis of 25 studies of suicidal behaviour in lesbian, gay, and bisexual (LGB) individuals found an increased risk in all LGB groups compared with heterosexuals. Attributable risk ranged from 0.03 to 0.25 and was higher in men than women. Women demonstrated a 1.82 times increased risk of lifetime suicide attempts in lesbians compared with bisexuals. Risk ratios for 12-month prevalence of suicide attempts ranged from 1.96 to 2.76 for both sexes. Results showed lifetime suicide ideation risk ratios of 2.04 for both sexes and a 12-month prevalence of suicide ideation risk ratio of 1.71 in both sexes. Employment: A meta-analysis found a pooled RR of suicide in long-term unemployed (average 7.8 years) compared with those currently employed was 1.70 (95% CI: 1.22–2.18). Pooled RR less than 5 years unemployed was 2.50 (95% CI: 1.83–3.17) compared

								with those currently employed. The effect of unemployment was associated with a significantly higher RR of suicide (RR: 1.58, 95% CI: 1.33–1.83). After controlling for mental health problems, RR was reduced by approximately 37%, but remained significant (RR: 1.15, 95% CI: 1.00–1.30). The highest suicide risk comprised "elementary" occupations such as cleaners (RR: 1.84, 95% CI: 1.46–2.33). The International Standard Classification of Occupations (ISCO; International Labour Organisation, Geneva, 2008) category 8 group, which represents machine operators, had high risk (RR: 1.78, 95% CI: 1.22–2.60). There was an increased risk among the ISCO category 5 (RR: 1.52, 95% CI: 1.28–1.80), which represents services such as police, and ISCO category 6 (RR: 1.64, 95% CI: 1.19–2.28), which includes, skilled agricultural workers. The lowest risk was the highest skill-level group of managers (ISCO category 1, RR: 0.68, 95% CI: 0.50–0.93) and clerical support workers (ISCO category 4, RR: 0.77, 95% CI: 0.64–0.92). One review found that of 7 of 11 studies showed significantly higher rates of suicide for veterinary surgeons that the general population. Internet use/cyberbullying: One review found internet use to be a source of

								exposure to suicide, with 59% stating they had learned about suicide online. Discussion forum use was significantly associated with suicidal ideation and ideation was significantly associated with searching online for information about suicide. Three studies in a meta-analysis and found cyberbullying more strongly related to suicide ideation (OR: 3.12, 95% CI: 2.40–4.05) than traditional bullying (OR: 2.16, 95% CI: 2.05–2.28).
Gallagher et al 2025	The aim of this umbrella review was to systematically examine the association between 10 social determinants of health, as defined by the World Health Organisation, and suicide mortality.	The population of interest was the *general population*, with specific subgroups examined in various reviews including individuals with mental illness, unemployed persons, and middle-aged suicide decedents	**Primary Outcome:** Suicide mortality	**Risk Factors:** Unemployment Low income and financial stress Unsecured debt Economic recession and austerity measures Low educational attainment Occupational disadvantage (e.g., low-skill jobs had higher suicide risks)	1970-2021	49 studies included	**High-income countries**: Denmark, Canada, US, Sweden, UK, Australia, Germany, France, Finland, Ireland, Italy, South Korea, New Zealand, Japan **Middle- and low-income regions**: China, South Africa, countries across the	This umbrella review synthesised evidence from 49 systematic reviews and meta-analyses examining the association between various social determinants and suicide mortality. The most extensively studied determinants included income, housing, unemployment, and early childhood development. There was consistent evidence linking unemployment with elevated suicide risk. For example, unemployed individuals had up to a 3.91-fold increased risk of suicide (95% CI 2.73–5.59), and this was particularly pronounced in men. Financial stress increased suicide risk by 74% (95% CI 36.8%–121.5%), and having unsecured debt was associated with an eight-fold increase in suicide risk. Lower levels of education also conferred risk, with relative risks ranging from 1.24 to 2.42 depending on gender and education

				Exposure to workplace violence or bullying Living in rural areas vs. urban areas Environmental factors like high temperatures, air pollution, and natural disasters Childhood adversity, including abuse and neglect **Protective Factors:** Generous unemployment benefits Social protection policies, such as retirement benefits and tax credits			WHO regions (Africa, Southeast Asia, Americas, Eastern Mediterranean, and Western Pacific) **Multinational and pan-European analyses** (e.g., 27 European and 18 American countries during the economic crisis)	level. Environmental and housing-related factors also showed associations: exposure to natural disasters, air pollution, and rural residency increased suicide risk. Childhood adversity, such as abuse or neglect, emerged as a robust predictor of later suicide. On the other hand, protective social policies — particularly unemployment benefits and social protection reforms — were associated with decreased suicide rates, suggesting structural interventions could mitigate risks. Due to methodological heterogeneity, a meta-analysis was not performed, and quality of reviews varied, with only 7 rated as high quality, 4 moderate, 13 low, and 25 critically low on AMSTAR-2 appraisal

National Irish studies

Supplementary Table 2. Characteristics of risk factors studies based on Irish data

Review / study	Aim	Population of interest	Primary and secondary outcomes	Description of risk factors	Results
Griffin et al 2018	To examine 10-year trends (2007–2016) in hospital-treated self-harm among young people in Ireland, including overall rates and specific methods employed	Individuals aged 10–24 years presenting to hospital emergency departments in Ireland following self-harm between 2007 and 2016	**Primary outcome**: Annual rate of hospital-treated self-harm per 100,000 population, stratified by age, gender, and method. **Secondary outcomes**: Trends in methods of self-harm, especially regarding lethality, and subgroup trends (by age and gender).	Age and gender	The study found a significant overall increase in hospital-treated self-harm among young people aged 10–24 in Ireland over the 10-year period. The rise was especially pronounced in adolescent females, particularly those aged 10–14 and 15–19, where rates sharply escalated after 2011. While rates among males were more stable, increases were observed in specific age subgroups. Notably, there was a worrying trend toward more lethal methods of self-harm, such as hanging and attempted drowning, particularly among younger adolescents. These shifts suggest both a decreasing age of onset and an increase in the severity of self-harming behaviours. Seasonal peaks and method-

					specific patterns were also observed, highlighting the need for age- and gender-targeted prevention strategies. Rates peaked for females in the 15-19 years old age range, whereas males peaked in the 20-24 years old age range.
Cully et al 2019	The aim of the study was to examine the risk of hospital-presented self-harm repetition according to specific characteristics of self-harm methods.	Individuals who presented to emergency departments (EDs) in Ireland with self-harm between January 2010 and December 2016. Only those without self-harm presentations in the three years prior to the study (2007–2009) were included to maximise true first presentations.	**Primary outcome:** Risk of self-harm repetition, defined as a subsequent hospital presentation due to self-harm during the seven-year study period. **Secondary outcome:** Examination of how specific characteristics of self-harm methods (e.g., severity of self-cutting, number and type of drugs in overdose) influence the risk of repetition. Influence of demographic factors	Gender, age and self-harm history were examined as risk to repeated self-harm.	Over the seven-year study period (2010–2016), a total of 65,690 self-harm presentations were recorded involving 46,661 individuals. The overall incidence of repeat self-harm was 29.0%, with a median of two repeat presentations (IQR ±1). The method of self-harm significantly influenced the risk of repetition. Minor self-cutting was associated with the highest risk of repetition, occurring in 37.7% of such cases. In adjusted survival analysis, minor self-cutting was linked with a 38% increased risk of repetition compared to the reference group (adjusted hazard ratio

			(sex, age) and self-harm history on repetition risk.		[AHR] = 1.38; 95% CI: 1.31–1.45). Severe self-cutting was also associated with an elevated risk (AHR = 1.25; 95% CI: 1.16–1.34), though slightly lower than minor self-cutting. Intentional drug overdose (IDO), the most common method (68.3% of all presentations), had a lower overall incidence of repetition (27.7%) compared to other methods (31.7%). However, within IDOs, risk varied: IDOs involving four or more drugs, especially those including psychotropic medications, had significantly higher risk. For example, IDOs involving four or more drugs including psychotropics had an AHR of 1.29 (95% CI: 1.20–1.39). Similarly, taking three psychotropic drugs yielded an AHR of 1.17 (95% CI: 1.10–1.25), while even a single psychotropic drug increased risk modestly (AHR = 1.06; 95% CI: 1.01–1.12).

					Self-harm involving blunt objects (e.g., head-banging) was uncommon (0.9% of cases) but carried a high risk of repetition (34.8%), with an AHR of 1.23 (95% CI: 1.07–1.42). In contrast, self-poisoning with non-ingestible substances (e.g., pesticides or chemicals) had a lower risk of repetition (AHR = 0.85; 95% CI: 0.76–0.96). No significant increase in repetition risk was found for other high-lethality methods such as attempted hanging or jumping from a height, although among females, these were associated with slightly increased risks in subgroup analysis. Age also influenced repetition: individuals aged <15 years had the highest adjusted risk (AHR = 1.17; 95% CI: 1.07–1.28), while those aged 65+ had the lowest (AHR = 0.58; 95% CI: 0.51–0.67). Prior history of self-harm was a strong predictor of future repetition; individuals with four or more previous presentations had

					an AHR of 8.93 (95% CI: 8.26–9.63) compared to those with no prior self-harm. Sex was not a significant overall predictor of repetition (AHR for females = 1.01; 95% CI: 0.97–1.05).
Hyland et al 2022	The study had three main objectives: To determine the lifetime prevalence of suicidal ideation, non-suicidal self-injury (NSSI), and attempted suicide in the general adult population of Ireland, and to assess changes in the two-week prevalence of NSSI and attempted suicide during the COVID-19 pandemic. To examine the degree of co-occurrence between	This data was a nationally representative sample of adults from the Republic of Ireland.	**Primary outcomes:** Lifetime prevalence of: Suicidal ideation, Non-suicidal self-injury (NSSI) and Attempted suicide Change over time in the two-week prevalence of NSSI and attempted suicide between Wave 2 (May 2020) and Wave 3 (August 2020). **Secondary outcomes:** Associations and co-occurrence patterns	The study conceptualised suicidality as a continuum, with: • Suicidal ideation at the "milder" end, • Progressing to NSSI, and • Culminating in attempted suicide at the "most severe" end. Therefore, in this paper, the risk factors for suicide were a history of suicidal ideation and/or non-suicidal self-injury.	The study found that lifetime prevalence rates in the Irish adult population were 29.5% for suicidal ideation, 12.9% for non-suicidal self-injury (NSSI), and 11.2% for attempted suicide. Between May and August 2020 (Waves 2 and 3), there was no statistically significant change in the two-week prevalence of NSSI (1.1% to 1.0%, $\chi^2(1) = 0.05$, $p = .823$) or attempted suicide (1.0% to 1.4%, $\chi^2(1) = 0.85$, $p = .356$), suggesting stability in these behaviours during this period of the COVID-19 pandemic. In terms of co-occurrence, the data supported a progression along a suicidality continuum.

	suicidal ideation, NSSI, and attempted suicide, and test the suicidality continuum hypothesis. To identify sociodemographic, economic, psychological, and psychiatric correlates associated with different points along the suicidality continuum.		between the three suicidality indicators. Identification of risk factors (sociodemographic, economic, psychological, psychiatric) for each stage of the suicidality continuum.		Among those who reported lifetime suicidal ideation (29.5%, *n* = 304), 33.9% (*n* = 103) also reported NSSI, and 30.6% (*n* = 93) also reported a history of attempted suicide. Conversely, only 4.1% of those with NSSI and 3.0% of those with attempted suicide did not report ideation, suggesting that suicidal ideation is typically a precursor. There was also significant overlap between NSSI and attempted suicide: 40.2% of those with NSSI (*n* = 53) reported a suicide attempt, and only 6.9% of those who had attempted suicide did not report NSSI. These associations were all statistically significant with strong odds ratios: ideation and NSSI (OR = 11.87, 95% CI [7.68, 18.36]), ideation and attempted suicide (OR = 14.10, 95% CI [8.65, 23.01]), and NSSI and attempted suicide (OR = 9.01, 95% CI [5.85, 13.90]).

					Logistic regression analyses revealed unique risk profiles for each point on the continuum. For suicidal ideation only, four variables were statistically significant: being male (AOR = 2.06, 95% CI [1.36, 3.10]), being unemployed (AOR = 1.80, 95% CI [1.08, 3.10]), experiencing higher loneliness (AOR = 1.13, 95% CI [1.00, 1.27]), and having lower religious beliefs (AOR = 0.96, 95% CI [0.93, 0.99]). For NSSI without attempted suicide, the only statistically significant correlate in the final model was a history of mental health treatment (AOR = 2.24, 95% CI [1.27, 3.96]). Lastly, for attempted suicide, six variables were significantly associated: belonging to an ethnic minority group (AOR = 2.72, 95% CI [1.06, 6.99]), having less than post-secondary education (AOR = 1.99, 95% CI [1.18, 3.35]), earning less than €20,000 annually (AOR = 2.18, 95% CI [1.00, 4.74]), earning €30,000–€39,999

					(AOR = 2.40, 95% CI [1.13, 5.10]), meeting diagnostic criteria for PTSD (AOR = 1.77, 95% CI [1.01, 3.10]), screening positive for major depression (AOR = 3.53, 95% CI [1.84, 6.75]), and having a history of mental health treatment (AOR = 3.52, 95% CI [2.16, 5.75]). Together, these results support the existence of a suicidality continuum, whereby individuals tend to progress from suicidal ideation to NSSI to attempted suicide, and each stage has distinct psychosocial and clinical correlates. The findings underscore the importance of tailored suicide prevention strategies that address these distinct risk profiles.
O'Farrell et al 2016	The aim of this study is to examine the small area level association between suicide and the following three area level factors:	All persons aged 15–64 years in the Republic of Ireland. The study included 1654 deaths (1464	**Primary Outcome** Incidence rate of suicide and undetermined deaths (ICD-10 codes X60–	Deprivation, low population density (rurality), high population density (urbanicity), and social fragmentation.	From 2009 to 2011, there were 1,654 deaths by suicide or undetermined intent among individuals aged 15–64 years in the Republic of Ireland, with a combined

	deprivation, social fragmentation and population density	suicides and 190 deaths of undetermined intent) recorded from 2009 to 2011. Deaths were geocoded to District Electoral Divisions (DEDs), the smallest administrative geographic unit in Ireland.	X84 and Y10–Y34) at the DED level. **Secondary Outcomes** Stratified analysis of suicide rates by: Age group: 15–39 years and 40–64 years, gender and associations with each of the three area-level variables (deprivation, social fragmentation, and population density)	Within these factors age and gender was also examined.	incidence rate of 18 per 100,000 population. Suicide rates were markedly higher in males compared to females, with an incidence rate ratio (IRR) of 3.9. The highest suicide rates were observed in males aged 15–39 years, who had an incidence rate of 28 per 100,000, compared to 6 per 100,000 in females of the same age group. The study found that area-level deprivation was the strongest independent predictor of suicide. Individuals living in the most deprived quintile (5th quintile) had a 2.1 times greater risk of suicide (IRR = 2.1, 95% CI 1.70–2.52) compared to those in the least deprived areas, even after adjusting for population density and social fragmentation. This effect was especially pronounced among young females (15–39 years), where suicide rates in the most deprived areas were over three times higher

					than in the least deprived areas. Population density showed varying associations depending on gender and age. Among males, lower population density (i.e., more rural areas) was associated with an increased risk of suicide, particularly in the 40–64 age group, where suicide rates in the most urban areas (5th quintile) were over 50% lower than in the most rural areas (IRR = 0.5, 95% CI 0.37–0.81). In contrast, females aged 15–39 showed a weak but positive association between high population density and suicide risk, although this did not reach statistical significance. Social fragmentation was not significantly associated with suicide in the overall analysis but became relevant in subgroup analyses. In particular, females aged 40–64 years living in the most fragmented areas had more

					than double the risk of suicide compared to those in the least fragmented areas (IRR = 2.4, 95% CI 1.12–5.23). Interestingly, in younger adults (15–39), increasing levels of social fragmentation were weakly associated with reduced suicide risk, though these findings were not statistically significant.
Nearchou 2024	The study aimed to examine the role of COVID-19-related posttraumatic stress, depression, and resilience as predictors of self-harm with and without suicidal intent in young people aged 17–25 years	The study sample included 625 young people aged 17 to 25 years (mean age = 20.2, SD = 2.47), primarily residing in the Republic of Ireland. Most participants identified as female (80%) and Irish (82%). All participants were residents of the republic of Ireland. Data was from a nationwide study (The Your Youth Health Project).	**Primary Outcomes:** Engagement in self-harm without suicidal intent. Engagement in self-harm with suicidal intent. **Secondary Outcomes:** Levels of COVID-19-related posttraumatic stress (measured by the IES-R). Levels of depression (measured by the	**Risk factors:** Depression, posttraumatic stress (related to Covid-19), and low resilience. **Protective factors:** caregiver and personal resilience	The study revealed concerning levels of self-harm and psychological distress among young people aged 17 to 25 during the COVID-19 pandemic. Nearly half of the participants (45%) reported engaging in self-harm without suicidal intent, and almost one in five (18%) reported self-harm with suicidal intent. In terms of mental health, the majority of the sample reported elevated levels of depression and posttraumatic stress symptoms related to COVID-19. Only 20% of participants reported normal levels of

			DASS-21 depression subscale). Levels of personal and caregiver resilience (measured by the CYRM-R)		depression, while 27% scored in the “extremely severe” range. Similarly, over 60% of participants scored above the clinical concern threshold for COVID-19-related posttraumatic stress, with 36% classified in the severe range. Hierarchical logistic regression analyses were used to examine the predictors of self-harm with and without suicidal intent. In both cases, caregiver resilience was found to be the most consistent protective factor, significantly reducing the odds of engaging in self-harm by approximately 20%. While both personal and caregiver resilience was initially associated with a reduced likelihood of self-harm, only caregiver resilience remained a significant predictor when depression and posttraumatic stress were added to the model. Depression emerged as the

					strongest predictor of self-harm. In the final model for self-harm without suicidal intent, depression increased the odds of self-harm, and personal resilience and posttraumatic stress were no longer significant once depression was accounted for. For self-harm with suicidal intent, both depression and COVID-19-related posttraumatic stress remained significant predictors, indicating that these factors independently contribute to the risk of more severe self-harming behaviour. Overall, the findings highlight the significant psychological toll the pandemic had on young people, with elevated levels of depression and trauma symptoms contributing to increased risk of self-harm. The protective role of caregiver support underscores the importance of family-based interventions in reducing this risk. These results suggest

					that efforts to support young people's mental health in the aftermath of the pandemic should address not only individual resilience but also the relational and systemic supports that buffer against harm.
O'Farrell et al 2015	This study aims to investigate the area-level relationship between hospital-treated self-harm, and the following area constructs: deprivation, social fragmentation, population density and, in particular, travel time to the nearest hospital emergency department in the Republic of Ireland (ROI).	Data on self-harm for the years 2009–2011 were taken from the National Registry of Deliberate Self Harm Ireland. The Registry uses standard methods of case ascertainment and also geocodes patient addresses to small area geographical level. Self-harm patients with non-household residential addresses such as hospital inpatients, prisoners and the homeless were excluded from this study.	**Primary outcomes:** Incident rates. Area-level self-harm rates and their ecological relationship with area-level factors. The effect of proximity to nearest hospital on method of self-harm **Secondary outcomes:** Stratification by age and gender	**Risk factors:** Deprivation, social fragmentation. Population density and travel time to nearest hospital Age and gender were also examined.	From 2009 to 2011, 26,379 individuals aged 15–64 in Ireland presented to hospitals with self-harm, with rates varying widely by geographic area. Self-harm incidence was highest in 2010 and overall 10% higher in females than males. Area-level analysis revealed that deprivation was the strongest independent predictor of self-harm, with a particularly significant impact on younger individuals (χ^2 = 19.92, p < 0.01). Social fragmentation was also positively associated with self-harm but had a stronger effect in older age groups (χ^2 = 18.64, p < 0.01), and its effect weakened after adjusting for other variables. Population

					density showed a linear positive relationship with self-harm, and this effect was significantly stronger in males ($\chi^2 = 18.26$, $p < 0.01$). Proximity to hospital services was also significantly associated with higher self-harm rates, especially for minor self-cutting, which was most common in areas closest to hospitals, suggesting possible underreporting in rural areas due to accessibility barriers. Among deprivation subcomponents, 5-year population change, lone parent households, and unemployment rates remained significant in multivariate analysis. These findings highlight the complex interaction between socioeconomic, demographic, and geographic factors in influencing self-harm risk.
Bennardi et al 2016	The aim of this study was to identify possible age-group and gender differences	Data for this study were drawn from the National Self-Harm Registry Ireland. Data were	**Primary outcome:** self-harm repetition	Age, gender, history of self-harm	This study analysed 28,700 individuals aged 10–29 years who presented with 42,642 self-harm episodes across 35 emergency departments

	in the association between self-harm repetition and individual variables (e.g. age-group differences in the association between recommended next care following a self-harm presentation and self-harm repetition). The study was conducted with the aim of gaining a greater understanding of risk of repeated self-harm, which is needed to inform health care services dealing with youth self-harm at hospital emergency departments.	extracted for consecutive patients aged 10 to 29 years who attended any of the emergency departments (ED) in the Republic of Ireland (estimated population: 4,593,300 in 2013) in consequence of non-fatal self-harm between 1st January 2007 and 31st December 2014.	**Secondary outcome:** time between presentations.		in Ireland. Key risk factors for repeated self-harm were identified using Cox proportional hazards models. Method of self-harm significantly impacted repetition risk: individuals who used self-cutting, either alone or with drug overdose, had a significantly higher risk of repetition compared to those who used drug overdose alone, particularly among females (HRs > 1, $p < 0.05$). Repetition was also strongly associated with history of previous self-harm, with risk increasing alongside the number of prior episodes; this effect was notably stronger in females. Regarding recommended care after the initial episode, older female emerging adults who were admitted to a general ward had a significantly lower risk of repetition within one year compared to those admitted to a psychiatric ward (HR = 3.31; 95% CI: 1.20–9.16; $p = 0.02$), those who left before admission (HR = 3.58; 95%

					CI: 1.48–8.64; p = 0.005), and those not admitted (HR = 2.11; 95% CI: 1.05–4.26; p < 0.04). Among young male emerging adults, leaving without being seen was associated with increased risk (HR = 2.32; 95% CI: 1.03–5.24; p = 0.004). Interestingly, alcohol involvement during the episode was associated with a lower risk of repetition among females (HR = 0.81; 95% CI: 0.66–0.99; p = 0.04). Overall, age, gender, self-harm method, alcohol use, and recommended care pathway were critical factors in predicting self-harm repetition, with especially heightened risks observed in younger individuals and those using more severe or violent self-harm methods.
Barrett et al 2018	The study aim was to estimate the incidence of self-harm among the homeless population and to assess factors associated with self-harm.	Homeless population	**Primary outcome:** incidence of self-harm amongst the homeless population **Secondary outcomes:** Risk factors associated with self-	Homelessness, type of self-harm and, demographic factors (age, sex etc)	Between 2010 and 2014, 3.9% (n = 2,276) of all self-harm presentations in Ireland were among the homeless population, with a notable increase from 2.5% in 2010 to 4.6% in 2014. The homeless exhibited a significantly higher crude

			harm amongst the homeless population		incidence rate of self-harm (6,994 per 100,000) compared to those with a fixed residence (194 per 100,000), reflecting an incidence rate ratio (IRR) of 36:1. Age-standardised rates remained markedly elevated among the homeless (5,572 per 100,000) versus domiciled individuals (187 per 100,000; IRR 30:1), with the highest rates observed among 15–24 year olds. Homeless individuals presenting with self-harm were more likely to reside in Dublin City (60.8% vs. 15.5%; χ^2: $p < 0.001$), be male, and present with methods such as self-cutting (26.4% vs. 16.7%) or highly lethal acts like hanging or drowning (11.4% vs. 6.8%) compared to domiciled counterparts. Drug overdose remained the most common method in both groups, though it occurred less frequently among the homeless (43.8% vs. 63.5%). Repetition within 12 months was significantly more common among

					homeless individuals (37.5% vs. 20.4%; χ^2: $p < 0.001$), and their odds of repetition were 46% higher (OR 1.46, 95% CI: 1.21–1.77). Among the homeless, independent risk factors for repeated self-harm included living in Dublin, engaging in self-cutting at index presentation, and lack of prior psychiatric review, while alcohol use was not a significant predictor after adjusting for confounders. Those aged 35–44 had the highest odds of homelessness at presentation (OR 3.32, 95% CI: 2.08–5.31), highlighting a distinct risk profile within this vulnerable population.
Corcoran et al 2015	This paper sought to assess the impact of economic recession and austerity in Ireland over the 5 years 2008–12 on national rates of both suicide and self-harm	General population – data on all self-harm incidence, suicide incidence and incidence of deaths of undetermined intent were used in this study.	**Primary outcomes:** changes in rates of suicide of a period of financial recession. **Secondary outcomes:** Differences in gender and age	Financial recession, gender and age.	Between 2008 and 2012, the economic recession in Ireland had a significant adverse impact on suicide and self-harm rates, particularly among men. Male suicide rates, which had been declining between 2000 and 2007 (−0.2 per 100,000 per quarter, *P*<0.001), reversed direction following the onset of the

					recession, with a trend change of +0.3 per 100,000 per quarter (*P*=0.006). By 2012, male suicide was 57% higher than expected based on pre-recession trends, amounting to an estimated excess of 476 deaths (95% CI, 274 to 678, *P*<0.001). Working-age men were especially affected: suicide rates rose by +10.1 per 100,000 among 25–44-year-olds (*P*=0.011) and +8.5 per 100,000 among 45–64-year-olds (*P*=0.040), corresponding to excess deaths of 336 and 185, respectively. Self-harm presentations among men also surged, with an excess of 5029 hospital-treated cases (95% CI, 626 to 9432, *P*=0.026), especially among 25–44-year-olds (+45.1 per 100,000, *P*=0.036) and 45–64-year-olds (+51.9 per 100,000, *P*=0.009). In contrast, female suicide rates remained largely stable, with only a marginal and statistically nonsignificant excess of 85

					deaths (95% CI, −9 to 180, *P*=0.075), but self-harm increased significantly among young women aged 15–24, with 1398 additional hospital presentations (95% CI, 122 to 2675, *P*=0.032). These findings indicate that the key risk factors for increased suicide during the recession were male gender, working-age status (25–64 years), and economic stress, underscoring the vulnerability of men in this demographic to societal downturns.
Kavalidou et al 2023	The aim of the current study was to compare the presentation-based self-harm and suicide-related ideation of Traveller to non-Traveller patients and describe any ethnic disparities in the aftercare of their presentation.	Traveller community	**Primary outcome**: comparisons of self-harm rates between Irish Traveller community and the non-traveller community. **Secondary outcome:** risk factors of suicide amongst the Irish Traveller community	Member of the traveller community, age and, gender	During the study period, 24,473 self-harm and suicide-related ideation presentations were recorded in the NCPSHI dataset, with 3% (744) involving Irish Traveller patients. Traveller individuals, particularly males, exhibited significantly higher risks for both suicide-related ideation and self-harm compared to their White Irish counterparts. Traveller females had over three times higher risk for ideation and nearly four

					times for self-harm, with the highest risks seen in those aged 50 and older. Traveller males showed even greater disparities, with ideation risk 4.46 times higher and self-harm risk 5.43 times higher, peaking in ideation for those aged 30–39 and in self-harm for those 50 and older. Age-specific presentation rates were highest among Traveller males aged 20–29 for ideation (1955 per 100,000) and both Traveller males and females aged 20–29 for self-harm. Travellers also had the highest proportion of self-harm acts (61%), with attempted hanging more prevalent among them (9%) than other groups. Substance use was notably higher in Traveller presentations (59%), and they had greater contact with mental health services (34%) at presentation time. While ED (emergency department) referral patterns were generally similar, Travellers were more often referred to self or supportive others

					(76%). Fewer differences were found in emergency care plan delivery or GP letter follow-up, but a higher proportion of Traveller patients declined next-of-kin involvement (28%), indicating unique cultural or systemic considerations in care delivery for this group.
White et al 2024	To measure the impact of hospital-treated self-harm by hanging and drowning in Ireland in 2007–2019 and identify risk factors for these methods of self-harm.	The study population consisted of all individuals who presented to the EDs of all 33 acute hospitals in Ireland for treatment after an episode of self-harm between 1 January 2007 and 31 December 2019. There was no restriction by age.	**Primary Outcome:** The incidence and trends in self-harm presentations involving hanging and drowning over time. **Secondary Outcomes:** Sociodemographic and clinical characteristics of individuals who used hanging or drowning. Risk of repetition of self-harm within one year following an initial hospital presentation involving hanging or drowning,	The paper identifies attempted hanging and drowning as highly lethal methods of self-harm and therefore closely associated with elevated suicide risk. Several risk factors discussed include: **Male gender**: Hanging was far more common among males (78.5% of hanging presentations). **Older age:** Hanging and drowning were more frequent among individuals aged 35 years and older. **Use of alcohol:** Alcohol was involved in a substantial proportion of drowning	Between 2007 and 2019, the study recorded a total of 2,571 presentations involving hanging and 173 involving drowning, representing 1.4% and 0.1%, respectively, of the 187,243 self-harm presentations captured during the study period. The rate of attempted hanging doubled, increasing from 3.1 per 100,000 in 2007 to 6.2 per 100,000 in 2019, with an annual percentage change (APC) of 4.3% (95% CI: 2.7–5.9). This rise was particularly marked among young males aged 20–24, whose hanging rates increased by 10.6% annually (95% CI: 6.3–15.0). In contrast, drowning rates

			compared to those using other methods.	attempts (41.1%) and hanging (37.2%). **Mental health history:** A lower likelihood of receiving a psychosocial assessment was observed for individuals who attempted hanging or drowning. **Repeat self-harm:** Both methods were associated with lower risk of repeat presentation but implied high suicide risk due to lethality.	remained stable throughout the period. The demographic profile showed that attempted hanging was overwhelmingly male (78.5%), while drowning was more common among females (60.1%). Both methods were more likely to involve individuals aged 35 or older, a notable deviation from the typical age pattern of self-harm, which tends to concentrate among younger people. Regarding the risk of repetition, individuals who presented with hanging were significantly less likely to re-present with any form of self-harm within 12 months (7.0% vs. 19.9%, adjusted hazard ratio (HR): 0.37, 95% CI: 0.31–0.45). Similarly, drowning was also associated with a reduced risk of repetition (adjusted HR: 0.56, 95% CI: 0.34–0.93), despite being a severe method.

					Furthermore, individuals who attempted hanging or drowning were less likely to receive a psychosocial assessment (51.2% for hanging and 57.8% for drowning) compared to those using other methods (70.9%). This is concerning given the elevated suicide risk associated with such highly lethal methods. Additionally, a high proportion of cases involving drowning were associated with alcohol use (41.1%), which may indicate increased impulsivity or disinhibition at the time of the act. The authors conclude that while hanging and drowning are relatively rare methods of self-harm in terms of hospital presentation, they are disproportionately lethal, and their increasing trend—especially for hanging—warrants urgent attention in suicide prevention policies. The lower repetition rate may partly reflect higher suicide

					completion rates in follow-up or differences in clinical response and service engagement.
McTernan et al 2023	Internationally, rates of suicide and lifetime self-harm are higher in prisoners compared to the general population. This study aims to identify specific characteristics of self-harming behaviour and to establish a profile of prisoners who engage in self-harm.	The study focused on all individuals over 18 incarcerated in Irish prisons who engaged in self-harm during the period January 1, 2017 to December 31, 2019.	**Primary Outcome:** The incidence rate of self-harm among prisoners in Ireland from 2017 to 2019. **Secondary Outcomes:** Descriptive profile of self-harm episodes (e.g., method, timing, location, mental health history, alcohol/drug use, and psychiatric care involvement). Repetition of self-harm within the prison setting over the study period. Differences by gender, age, and prison type (open/closed).	The paper discusses several risk factors among prisoners who engaged in self-harm: **Male gender:** Although female prisoners were overrepresented in self-harm cases relative to their proportion in the prison population, male prisoners still accounted for the majority (71%) of all self-harm episodes. **History of mental illness:** Nearly 60% of self-harm episodes involved individuals with a recorded psychiatric history, and 42% were engaged with psychiatric services at the time of the episode. **Substance misuse:** A history of alcohol and drug misuse was present in a significant	Between 2017 and 2019, a total of 310 self-harm episodes were recorded among 215 individuals in the Irish prison system, corresponding to an overall incidence rate of 5.7 per 1,000 prisoners per year. While male prisoners comprised the majority of cases (71%), the incidence rate among female prisoners was significantly higher, at 26.3 per 1,000 per year, compared to 4.8 per 1,000 per year for males. The most common method was cutting (61%), followed by overdose (18%) and ligaturing (17%). A notable finding was that 35% of individuals had more than one episode of self-harm during the study period, with 21% having three or more episodes, indicating a high-risk subgroup for repeated

				proportion of cases, particularly in males. **High levels of repetition:** Over one-third (35%) of individuals had repeated episodes of self-harm, and 21% had three or more episodes, suggesting chronic distress and heightened risk. **Timing of incidents**: A high proportion of self-harm occurred in the evening (6pm–10pm), and during the early months of incarceration (36% occurred within the first 30 days of committal). **Location and method:** The most common location was the prison cell, and the most frequent method was cutting (61%), a known risk factor for repeated self-harm.	and potentially escalating self-harm. The prison cell was the most frequent setting for self-harm (81%), and nearly half of all episodes occurred in the evening (6pm–10pm). Alarmingly, one-third (36%) of self-harm episodes occurred within the first month of committal, highlighting early incarceration as a particularly vulnerable period. Psychiatric history was recorded in 59% of cases, and 42% were actively engaged with psychiatric services. This underscores a significant overlap between mental illness and self-harm risk. Additionally, substance misuse history was present in a large proportion of cases, though exact breakdowns by gender or method were not specified. The authors emphasised that this represents an opportunity for targeted intervention, especially in

					the early weeks of imprisonment and for individuals with known psychiatric or substance use histories.
Daly et al 2021	This study aimed to describe the characteristics, incidence, and temporal trends in paracetamol-related IDO among young people. The objectives were (i) to estimate the incidence and describe the characteristics of paracetamol-related IDO by young people, and (ii) to examine recent temporal trends in the incidence of paracetamol-related IDO.	The study population comprised young people aged 10–24 years who presented to Irish hospitals with paracetamol-related IDO between January 1, 2007, and December 31, 2018. Data were drawn from the National Self-Harm Registry Ireland (NSHRI), which captures presentations to all acute hospital emergency departments nationwide.	**Primary Outcome:** Incidence rates of hospital-presenting paracetamol-related IDO among young people aged 10–24. **Secondary Outcomes:** Characteristics of paracetamol-related IDO episodes (e.g., number of tablets taken, gender, age group, alcohol involvement, mental health assessment, use of multiple drugs). Temporal trends in incidence (annual percentage changes). Estimates of excess presentations during	Risk factors included gender, age, and alcohol involvement. A lack of biopsychosocial assessment was also a risk factor. One in four individuals did not receive an assessment. A high-risk subgroup of those aged 18–24-year-old males was also identified as a risk factor. 18–24-year-old males were more likely to take large doses (≥49 tablets), indicating potentially higher suicidal intent despite decreasing IDO rates in this group.	Over the 12-year period from 2007 to 2018, 10,985 presentations of paracetamol-related IDO were recorded among young people aged 10–24 years in Ireland. Paracetamol accounted for 36.4% of all IDO presentations in this age group. The study found a 9% increase in paracetamol-related IDO between 2007 and 2018 (IRR 1.09, 95% CI: 1.00–1.19, p = 0.046), with trends diverging significantly by age and gender. Females were disproportionately represented: the incidence rate among 10–17-year-old females was 261 per 100,000 (vs. 82 for males), and among 18–24-year-olds, the rate was 466 per 100,000 (vs. 359 for males). The greatest

			2013–2018 compared to 2007–2012.		increase was among females aged 18–24 years, who experienced a significant 1.2% annual increase (95% CI: 0.4–2.0, p < 0.05). Conversely, males aged 18–24 showed a significant decline in IDO rates (APC –1.6%, 95% CI: –3.2 to –0.4, p < 0.05)(APC; age period cohort). Between 2013 and 2018, there were estimated excesses of 386 and 151 paracetamol-related IDO cases among females aged 10–17 and 18–24 years, respectively. Males aged 10–17 showed 42 excess cases, while males aged 18–24 had 107 fewer presentations than expected. Among all IDO presentations, multiple drug use occurred in 55.3% of cases, and 30.9% involved three or more drug types, compounding the risk of harm. Regarding dosage, 7.3% of IDO episodes involved ≥49 paracetamol tablets. The

					median number of tablets was higher among males and the older age group. Alcohol involvement was found in nearly 40% of IDOs by 18–24-year-old males, significantly more than females in the same age group (30.9%, $p \leq 0.001$). Most individuals (75.5%) received a mental health assessment, but 1 in 4 did not, particularly concerning in high-risk cases. Hospital discharge was the most common outcome (48%), followed by admission to a medical ward (41%), reflecting clinical severity.
Daly et al 2018	The study aimed to determine the profile of patients engaging in intentional drug overdose (IDO), to identify the drug types most frequently used in these overdoses, and to quantify the role of multiple drug	The population studied consisted of individuals in the Republic of Ireland who presented to emergency departments with non-fatal intentional drug overdose between 1 January 2012 and 31 December 2014. The	**Primary Outcome:** Types and frequencies of drugs involved in intentional drug overdose (as categorised by the ATC system). **Secondary Outcomes:**	**Alcohol Involvement**: Found in 40.6% of IDOs, more common in males (44.7%) than females (37.8%). It was particularly associated with overdoses involving illegal drugs (47.8%) and anxiolytics (49.3%). Alcohol use is linked to increased lethality, medical complications, and risk of	From 2012 to 2014, 18,329 hospital presentations for intentional drug overdose were recorded in Ireland. The majority were by females (58.7%), and the median age was 33 years. IDO was most frequent among individuals aged 15–24 years (28.3%). Alarmingly, alcohol was involved in 40.6% of IDOs,

	use and alcohol involvement.	data, totalling 18,329 IDO presentations, was collected from all 36 acute hospitals through the National Self-Harm Registry Ireland.	Prevalence of alcohol involvement in IDOs. Frequency and patterns of multiple drug use. Demographic characteristics (age, sex) associated with different drugs and patterns of IDO.	long-term alcohol-related death. **Multiple Drug Use**: Nearly half (47.1%) of IDO presentations involved more than one drug type. Multiple drug use was associated with significantly higher quantities of tablets taken and increased risk of repeat self-harm and suicide. **Prescription and Sales-Restricted Drugs**: Drugs such as benzodiazepines, antidepressants, and paracetamol were frequently involved, raising concerns about inappropriate prescribing and access control. **Demographic Risks**: Younger individuals (<25 years), particularly females, were at higher risk of overdosing with paracetamol. Older individuals (45+ years) were more likely to use benzodiazepines and antidepressants in IDOs.	more often in males (44.7%) than females (37.8%) (χ^2 = 86.82, P < 0.01). It was especially prevalent in overdoses involving illegal drugs (47.8%) and anxiolytics (49.3%) (χ^2 = 154.52, P < 0.01), signifying a strong link between alcohol and substances with high abuse potential. Nearly half (47.1%) of the presentations involved multiple drug types, with significantly higher numbers of tablets ingested in such cases (median = 27 vs. 18 in single-drug use; t = 25.112, P < 0.01). Young people aged 15–24 were the most likely to engage in multiple drug use (26.3%; χ^2 = 74.55, P < 0.01), a behaviour associated with a higher risk of severe outcomes and repeated self-harm. Drugs affecting the nervous system dominated IDO cases (80.2%). Paracetamol was the most frequently used drug (27.8% of all

					cases), especially among females (32.0%) and those under 25 (36.2%; $\chi^2 = 292.30$, $P < 0.01$). Benzodiazepine derivatives like diazepam and alprazolam were found in over one-third of all presentations (36.4%), with diazepam being more common in males (14.5% vs. 9.4%; $\chi^2 = 232.16$, $P < 0.01$). Antidepressants were involved in 21.9% of cases, more common in females and individuals aged 45+ (24.7%; $\chi^2 = 89.17$, $P < 0.01$). These findings underscore how specific demographic groups (young females, middle-aged males) are at heightened risk due to drug availability, alcohol involvement, and polypharmacy. The study highlights the urgent need for stricter prescribing practices, sales restriction enforcement, and targeted prevention strategies.

Joksimovic et al 2024	This study sought to provide updated estimates of the occurrence of intimate partner violence (IPV) in the general adult population of Ireland and to better understand gender-specific profiles of IPV, their risk factors, and their relationship with suicidality.	This study utilised data (*N* = 1,098) from Wave 4 of the Irish arm of the COVID-19 Psychological Research Consortium (C19PRC) study; a longitudinal, internet-based survey designed to assess the Irish population's social and psychological adjustment to the COVID-19 pandemic	**Primary outcomes:** Gender differences in intimate partner violence suicidality **Secondary outcomes:** Social supports Social contact	Intimate partner violence. Within this gender was examined.	The study found that 32.1% of participants experienced at least one form of IPV, with significantly more females (38.1%) than males (26.5%) affected ($\chi^2(1) = 16.59$, $p < .001$, OR = 1.70). Among females, the latent class analysis identified four IPV exposure groups: Low IPV (69.4%), High IPV without overt violence (16.5%), Systematic Abuse (4.3%), and High IPV (9.8%). Suicidality outcomes varied significantly across these classes. Compared to the Low IPV group, all three higher-risk groups had significantly elevated rates of suicidal ideation ($\chi^2(3) = 45.11$, $p < .001$), NSSI ($\chi^2(3) = 31.57$, $p < .001$), and attempted suicide ($\chi^2(3) = 17.41$, $p < .001$). Notably, the Systematic Abuse class had the highest probabilities of suicidal ideation and attempted suicide, while the High IPV class showed the highest rates of NSSI. Key risk factors for class membership

					among females included lower income (High IPV without overt violence, AOR = 0.80), having children (Systematic Abuse, AOR = 4.28), lower social contact (AOR = 0.85), and lower social support (Systematic Abuse: AOR = 0.94; High IPV: AOR = 0.95). Among males, three IPV classes emerged: Low IPV (80.1%), Systematic IPV (6.6%), and Physical and psychological abuse (13.3%). All IPV-exposed groups showed significantly higher rates of suicidal ideation ($\chi^2(2) = 42.80$, $p < .001$), NSSI ($\chi^2(2) = 61.41$, $p < .001$), and attempted suicide ($\chi^2(2) = 41.45$, $p < .001$) compared to the Low IPV group. The Systematic IPV class was at greatest risk across all suicidality measures. Risk factors for this group included urban residence (AOR = 3.01) and having children (AOR = 4.13), while the Physical and psychological abuse class

					was linked to lower social support (AOR = 0.96). Overall, greater IPV exposure, lower social support, having children, and urban living (for men) emerged as key correlates of increased suicidality risk.
Griffin et al 2017	The aim of the study was to examine the patterns of hospital-treated self-harm during public holidays in Ireland using national data and to identify associated risk factors. The authors sought to understand not only whether self-harm increased on public holidays, but also what specific factors (such as alcohol involvement, timing of presentation, and demographic characteristics) were associated with these patterns.	The population of interest included all individuals presenting with self-harm to hospital emergency departments in Ireland between January 1st, 2007 and December 31st, 2015. The data were drawn from the National Self-Harm Registry Ireland, which records all self-harm presentations nationwide. Total presentations recorded: 104,371	**Primary Outcome**: The daily number of hospital-treated self-harm presentations, with specific focus on public holidays compared to other days. **Secondary Outcomes**: Alcohol involvement in self-harm presentations Timing of presentation (e.g., out-of-hours) Methods of self-harm (e.g., overdose, self-cutting) Demographic factors (sex, age)	The study identifies several risk factors and associated variables related to self-harm (which is a strong predictor of suicide), including: **Alcohol involvement** in the act of self-harm, which was significantly elevated on public holidays. **Out-of-hours presentations,** suggesting delayed or reduced access to care. **Male gender,** with men more likely to use methods like self-cutting and to present for the first time during public holidays. **Younger age**, particularly females under 15, showing	The study found that hospital-treated self-harm presentations increased during public holidays, with a mean of 32 daily presentations compared to 27 on non-holiday days. This increase was evident across most public holidays, especially St. Patrick's Day (mean = 44) and New Year's Day (mean = 41). Notably, alcohol involvement was significantly higher on public holidays, present in 43.2% of cases versus 38.1% on other days (Risk Ratio [RR] = 1.24; 95% CI: 1.17–1.32; $p < 0.001$). This trend held for both males (RR = 1.22) and females (RR = 1.25). Alcohol-related self-harm was especially prominent during the Christmas period.

			First-time vs. repeat presentations Mode of arrival to hospital (e.g., ambulance)	different presentation patterns. **Time-specific and calendar-specific patterns**, such as spikes on certain holidays (e.g., St. Patrick's Day, New Year's Eve), indicating temporal vulnerability.	For example, males showed a 150% increased risk on Christmas Eve and 81% on Christmas Day, while females had increased risk on Christmas Day (RR = 1.79) and New Year's Eve (RR = 2.02). Interestingly, Good Friday was the only holiday associated with a decreased risk of alcohol-related self-harm (RR = 0.75), possibly linked to alcohol sales restrictions. Multivariate analyses revealed several other distinguishing characteristics for public holiday presentations: Alcohol remained the strongest factor associated with self-harm on public holidays: males (RR = 1.21), females (RR = 1.17). Presentations were more likely to occur out-of-hours, particularly between 12am–9am (males: RR = 1.15; females: RR = 1.35).

					Males were more likely to arrive by ambulance (RR = 1.15) and to be first-time presenters (RR = 1.16). Self-cutting was more common among males on public holidays (RR = 1.21), a method associated with impulsivity and higher risk of repetition. For females, age had a significant influence: those under 15 were less likely to present on public holidays compared to those aged 55+ (RR = 0.58). A sensitivity analysis ruled out significant effects in the days immediately before or after holidays, confirming that the observed trends were unique to the holidays themselves.
Corcoran et al 2019	The aim of the study was to examine whether the release of the Netflix series *13 Reasons Why*—which prominently features the suicide of a fictional female	The study focused on individuals aged 10 years and older who presented with self-harm to hospital emergency departments in Ireland. Data were	**Primary Outcome**: The incidence of hospital-presenting self-harm in the three months following the release of *13 Reasons*	The study specifically evaluated media portrayal of suicide as a potential precipitating factor or risk enhancer for suicidal	The study found a statistically significant increase in female hospital-presenting self-harm involving sharp objects in the three months following the release of *13 Reasons Why*.

	character—was associated with an increase in hospital-presenting self-harm in Ireland. The study aimed to investigate this effect across time, self-harm method, and sex to assess the possible existence of a "Werther Effect" (copycat behaviour following media portrayals of suicide).	drawn from the National Self-Harm Registry Ireland, which collects real-time, standardised data on all such hospital presentations nationwide.	*Why* (March 31, 2017), compared to: The rest of the year 2017 The same three-month period in each of the previous six years (2011–2016) **Secondary Outcomes**: Self-harm method, particularly involving sharp objects, to mirror the method used in the series. Stratification of results by sex, to assess whether female or male presentations differed in relation to the series' release.	behaviour. The key risk-related elements discussed include: **Media influence:** The portrayal of suicide in fictional media (like *13 Reasons Why*) can trigger real-life behaviours, especially among vulnerable viewers, through the Werther Effect. **Method depiction**: The graphic and method-specific portrayal (i.e., use of sharp objects) may increase method-specific self-harm, particularly among young females. **Sex-specific vulnerability:** The paper highlights that female adolescents may be particularly susceptible to influence by media portrayals of suicide, especially when the character is a relatable peer figure.	Specifically, the incidence rate for females using sharp objects rose to 100 per 100,000, which was 20% higher than the rate for the rest of 2017 (Incidence Rate Ratio [IRR] = 1.20; 95% CI: 1.08–1.33). This spike was unique to 2017; no similar increase was observed during the same period in any of the six preceding years, where the IRRs ranged from 0.95 to 1.07. Importantly, no significant changes were found in: • Male self-harm involving sharp objects • Female or male self-harm involving other means, such as drug overdose These findings suggest a temporal and method-specific increase in self-harm presentations among females potentially linked to the media portrayal of suicide in the series. The

					researchers concluded that the series' detailed depiction of suicide may have contributed to the observed increase in female self-harm, emphasizing the need for careful and responsible media reporting and portrayal of suicidal behaviour.
Birchall et al 2021	The aim of the study was to examine the impact of 2010 guidance from the Pharmaceutical Society of Ireland on the national rate of hospital-presenting self-harm involving codeine-related intentional drug overdose (IDO) in Ireland.	The population of interest included all individuals in the Republic of Ireland who presented to hospital emergency departments for intentional drug overdose between 1 January 2007 and 31 December 2013, as recorded by the National Self-Harm Registry Ireland.	**Primary Outcome:** rates of codeine-related intentional drug overdose (IDO). **Secondary Outcomes / Control Measures:** Rates of IDOs involving other drugs, Rates of non-opioid analgesics, Rates of other opiates (excluding codeine).	**Protective factor:** Restricting access to means of self-harm or suicide: The implementation of guidance restricting over-the-counter sales of codeine-containing products acted as a protective factor by reducing the availability of a commonly used substance in intentional drug overdose (IDO). This restriction was associated with a significant reduction (20%) in codeine-related IDO presentations, which suggests a protective effect in preventing self-harm involving this drug.	Between 2007 and 2013, there were 57,759 hospital presentations due to intentional drug overdose (IDO) in Ireland, of which 4,789 cases (8.3%) involved codeine-containing products. Following the introduction of national guidance in 2010 restricting the sale of OTC codeine products, the rate of codeine-related IDOs significantly declined by 20% (IRR: 0.80; 95% CI: 0.75 to 0.85), equating to an estimated 509 fewer presentations than expected in the post-guidance period

					(October 2010–December 2013). The reduction was observed across all age groups, but was most pronounced among females (IRR: 0.76; 95% CI: 0.71 to 0.82, 415 fewer presentations) compared to males (IRR: 0.87; 95% CI: 0.79 to 0.97, 100 fewer presentations). The age group under 25 showed a 23% reduction (IRR: 0.77; 95% CI: 0.70 to 0.85), while those aged 65 and over saw a 44% decrease (IRR: 0.56; 95% CI: 0.36 to 0.87). The rate of IDOs involving other drugs declined by just 3% (IRR: 0.97; 95% CI: 0.95 to 0.98), and no significant change was observed for other opiates (IRR: 0.98; 95% CI: 0.91 to 1.06). These comparisons suggest that the reduction in codeine-related IDOs was not due to a general trend in decreasing IDOs, nor was there a substitution effect where

					individuals switched to other drug types. Overall, the study provides strong evidence that restricting access to means, in this case through pharmacist-led regulation of codeine sales, can effectively reduce self-harm behaviours, particularly among younger people and women, who are at heightened risk of codeine-related IDO.
McMahon et al 2024	The aim of the study was to identify clinical and demographic risk profiles among a national cohort of suicide cases in Ireland.	The study included 1,809 individuals in Ireland who died by suicide between January 1, 2015 and December 31, 2017. Suicide data were obtained from the Irish Probable Suicide Deaths Study (IPSDS).	**Primary Outcome:** Identification of distinct sub-groups of suicide cases based on socio-demographic, mental health, substance use, and psychosocial characteristics. **Secondary Outcomes:** Determination of the proportion of suicide decedents with prior	Risk factors included mental health conditions, substance use, unemployment, living alone, prior self-harm and, stressors such as relationship difficulties, chronic pain and/or physical illness and, legal or financial issues.	Of the 1,809 suicide deaths studied, 401 individuals (22.2%) had a history of hospital-treated self-harm. Those with prior self-harm were significantly more likely to be female (32.7% vs 20.5%, $p < 0.001$), younger (especially ages 25–54), single, unemployed, and to have documented mental health conditions (83.8% vs 60.0%, $p < 0.001$), drug dependence (39.2% vs 22.4%, $p < 0.001$), and

			hospital-treated self-harm. Identification of risk and protective factors associated with prior self-harm. Examination of stressors preceding suicide using coronial records.		alcohol dependence (30.7% vs 13.4%, $p < 0.001$). The Latent Class Analysis revealed four distinct profiles of suicide cases: **Group 1**: Individuals with poor mental health but low self-harm, pain/physical illness and employment/school difficulties. **Group 2**: Poor mental health, low levels of self-harm, and were single and living alone. **Group 3:** High Risk Prior self-harm; mental disorders; alcohol/drug dependency, unemployment and relationship difficulties **Group 4:** "Hidden" Risk Very low levels of self-harm and mental health conditions; high levels of personal stressors This group, though appearing lower risk clinically, still represented 14.3% of the cohort.

					Importantly, 78% of suicides occurred without a hospital-treated self-harm history, underscoring that a substantial portion of suicides may arise outside of clinical visibility. In logistic regression, for males, significant predictors of self-harm history included mental health condition (OR = 2.98; 95% CI 1.9–4.69), unemployment (OR = 1.81; 95% CI 1.21–2.71), alcohol dependence (OR = 2.34; 95% CI 1.56–3.51), and living alone. For females, risk increased among those aged 25–44 (OR = 2.21), homemakers (OR = 3.15), those with a mental health condition (OR = 3.76), and drug dependence (OR = 2.53). The study concluded that suicide prevention must go beyond psychiatric and self-harm history to include broader psychosocial stressors, especially in younger males with “hidden” risk profiles.

					Recommendations include targeting occupational settings, improving mental health literacy, and training primary care professionals in the detection and management of mental illness.
Cox et al 2025	The aim of the study was twofold: To determine whether male farmers and agricultural workers in Ireland have higher suicide incidence rates compared to other males. To examine the distinguishing characteristics of suicide among farmers and agricultural workers relative to other male suicides, using coronial data from the Irish Probable	The population of interest consisted of male farmers and agricultural workers in the Republic of Ireland, identified from the IPSDS dataset spanning 2015–2018. The analysis focused on 144 male farmers/agricultural workers out of a total of 1,776 male probable suicide cases during this period.	**Primary Outcome:** Age-specific suicide incidence rates among male farmers and agricultural workers, compared with non-farmer males. **Secondary Outcomes:** Differences in sociodemographic characteristics, clinical histories (e.g., prior self-harm, mental health conditions), methods and circumstances of death, and interaction	**Risk factors:** Older age, Occupational stressors (such as climate change, financial insecurity and livestock loss), access to lethal means (firearms, drowning hazards such as slurry pits), use of highly lethal means **Protective factors:** Living with family/partner and/or children	From 2015 to 2018, male farmers and agricultural workers accounted for 8% (n = 144) of all male probable suicides in Ireland. The overall average annual suicide rate for male farmers was 31.5 per 100,000, which, while numerically higher than the rate for all men (23.6 per 100,000), was not statistically significant (p = 0.09). However, the suicide rate among farmers over 65 was significantly higher (29.2 per 100,000) compared to non-farmers of the same age (14.3 per 100,000; p = 0.028), identifying age as a critical risk factor. Sociodemographically, farmers were significantly

	Suicide Deaths Study (IPSDS).		with health services between farmers and non-farmer male suicide cases.		older than non-farmers (mean age 55.8 vs. 43.3 years; $p < 0.01$) and more likely to be living with family (62% vs. 57%; $p = 0.015$), highlighting a possible protective influence of cohabitation. Employment was also a distinguishing factor, with 71% of farmers being in paid employment at the time of death compared to 33% of non-farmers ($p < 0.001$), suggesting that employment in farming may not be as protective as it is in other sectors, possibly due to the unique stressors in agriculture. Clinically, farmers were significantly less likely to have a history of self-harm (12% vs. 20%; $p = 0.014$) and drug dependency (6% vs. 28%; $p < 0.001$), and somewhat less likely to have alcohol dependency (8% vs. 14%; $p = 0.034$). Despite similar rates of diagnosed mental health conditions (63% vs. 61%) and mental health medication use (35%

					vs. 33%), these lower indicators of previous self-harm and substance issues might point toward a more impulsive or less detectable path to suicide among farmers. In terms of method, while hanging was the most common across both groups (67% of farmers vs. 65% of non-farmers), farmers had higher rates of death by shooting (8% vs. 4%) and drowning (16% vs. 10%), and were significantly less likely to leave a suicide note (17% vs. 30%; p = 0.002), again suggesting possible impulsivity or cultural stigma. Location of death also varied, with more farmer suicides occurring in private places (71% vs. 65%; p = 0.029). Notably, there were no significant differences in GP contact prior to death (49% of farmers vs. 48% of non-farmers), suggesting parity in access to or usage of general

					healthcare services, contrary to some assumptions about help-seeking behaviours in rural populations. In summary, while male farmers share many suicide risk factors with other men, the elevated risk in older farmers, the use of more lethal methods, and fewer documented mental health or substance issues point to distinct characteristics that warrant tailored intervention strategies. Protective factors such as living with family and stable employment may offer avenues for support-focused prevention efforts.
Daly et al 2020	This study aimed to investigate repeat self-harm and method-switching following hospital-presenting IDO among young people. The objectives were: (i) to establish self-harm methods used by young people during	The study population consisted of young people aged 10–24 years who presented to hospitals in the Republic of Ireland with intentional drug overdose (IDO) between 2009 and 2018. A total of 16,800 individuals were included in the	**Primary Outcome:** Repeat self-harm within 12 months following an index IDO presentation.	**Risk Factors:** **Being male** was associated with a higher risk of repetition (HR = 1.13; 95% CI: 1.03–1.24) and method-switching (RR = 1.36; 95% CI: 1.11–1.66). **Age 10–17 years** was associated with increased risk of repetition (HR = 1.29; 95% CI: 1.18–1.41).	The study analysed 16,800 young people aged 10–24 who presented with intentional drug overdose (IDO) in Irish hospitals from 2009 to 2018. Within 12 months, 2136 individuals (10.3%) engaged in repeat self-harm. The analysis showed that being male increased the likelihood of

	the study period, (ii) to identify the demographic, clinical and self-harm characteristics of repeat presentations following IDO among young people and (iii) to examine methods used in non-fatal repeat self-harm presentations, including method-switching, following IDO among young people	analysis of repeat self-harm.	**Secondary Outcome:** Method-switching in self-harm behaviour, i.e., changing from IDO to another method in subsequent episodes	**Use of specific drug types:** Benzodiazepines (HR = 1.67; 95% CI: 1.40–1.98), antidepressants (HR = 1.36; 95% CI: 1.18–1.56) and, illegal drugs were associated with increased risk of method-switching (RR = 1.63; 95% CI: 1.25–2.14).	repetition (HR = 1.13) and also the likelihood of switching to a different self-harm method in subsequent episodes (RR = 1.36). Notably, younger individuals (10–17 years) were more likely to repeat self-harm than older peers (HR = 1.29), highlighting adolescence as a particularly vulnerable developmental stage. The type and quantity of drugs used in the index IDO were important indicators: taking 50 or more tablets significantly increased repetition risk (HR = 1.27), as did the use of benzodiazepines (HR = 1.67) and antidepressants (HR = 1.36). Use of illegal drugs in the initial IDO episode significantly raised the risk of switching to other methods of self-harm later (RR = 1.63). Additionally, method-switching was more likely among males and those who took a single drug type, suggesting complex interactions between access, intent, and method

					selection. Among those who switched methods, self-cutting was the most common follow-up behaviour (64.3%), followed by attempted hanging (16.4%) and drowning (9.0%). Interestingly, the number of drug types used, alcohol involvement, and whether a mental health assessment was received did not significantly affect repetition or switching outcomes in multivariate models. This points to the necessity for deeper investigations into clinical, psychosocial, and environmental contributors. The findings emphasise the urgency of targeted interventions that limit access to high-risk medications and ensure consistent mental health assessments for young people presenting with IDO.
Griffin et al 2023	The objectives of this study were to examine suicide risk among a large-scale	Individuals who attended hospital emergency departments with	**Primary Outcome:** Suicide following self-harm	Gender, age, method of self-harm, alcohol consumption, medical admission, previous self-harm	This study examined 23,764 individuals who presented to hospital with self-harm between 2015 and 2017,

	national cohort of individuals who attended hospital emergency departments with self-harm in Ireland. In order to identify sub-groups at elevated suicide risk following self-harm, models based on sex, age, self-harm method, and previous self-harm history were examined.	self-harm in Ireland between 1 Jan 2015 and 31 Dec 2017 were identified via the National Self-Harm Registry Ireland (NSHRI) and were linked to national suicide records for the same period via the Irish Probable Suicide Death Study (IPSDS).	**Secondary outcomes:** Factors affecting suicide following self-harm		focusing on risk factors for subsequent suicide. Suicide occurred in 0.91% (n=217) of the cohort during a median follow-up of 539 days, with risk particularly high in the first month after hospital presentation (38.7% of suicides occurred within 30 days). Males and older adults faced significantly elevated risks: being male was associated with nearly double the risk of suicide (HR=1.88, 95% CI: 1.39–2.56), and those aged 55+ had the highest risk (HR=4.60, 2.81–7.53). Compared to drug overdose, using more lethal methods like attempted hanging (HR=5.09, 3.35–7.71) and drowning (HR=2.25, 1.03–4.91) substantially increased suicide risk. A history of repeated self-harm was also a strong predictor, with those having two or more prior episodes at over four times the risk (HR=4.56, 3.04–6.82). Medical admission following the self-harm episode was associated with

					higher suicide risk (HR=2.37, 1.71–3.28), while alcohol involvement in the self-harm act was linked to a reduced risk (HR=0.65, 0.46–0.92). Suicide risk, though higher in absolute terms among males, was proportionally more elevated among females relative to the general population (IRR=136 vs. 69 for males). Among females, those aged 45–54 had the highest relative risk (HR=5.61, 2.38–12.40), and among males, combined self-cutting and overdose raised risk (HR=2.30, 1.03–5.11). Overall, the study highlights key clinical and demographic factors—such as sex, age, self-harm method, medical severity, alcohol involvement, and history of self-harm—that are critical in identifying individuals at heightened suicide risk.
McEvoy et al 2024	The study aimed to identify homogenous subgroups of adolescents and young adults (AYAs)	The population of interest was drawn from the Growing Up in Ireland (GUI) Child Cohort '98, a	**Primary Outcome:** Self-harm, measured at age 17 and age 20 via self-reported	**Risk factors** were grouped into thematic clusters,	The latent class analysis (LCA) revealed distinct risk profiles at ages 13 and 17 associated with significantly

	at ages 13 and 17 who exhibit similar patterns of risk factors for self-harm, and to examine the longitudinal association between these subgroups and self-harm at ages 17 and 20, respectively. The research seeks to understand how risk factors co-occur and to use this information to inform potential public health and clinical interventions.	nationally representative longitudinal cohort. The analysis included data from three waves: aged 13, aged 17 and aged 20 years.	behaviour (e.g., "hurt themselves on purpose"). **Secondary Outcomes:** The frequency and repetition of self-harm within the past 12 months were also considered to assess severity and persistence.	identified via latent class analysis (LCA). They included: **Psychiatric/Psychological**: Depression (diagnosed and undiagnosed), anxiety, internalising and externalising behaviours **Social**: Bullying victimisation, peer problems, lack of friends, family conflict, parental divorce/separation **Behavioural**: Substance use (alcohol, drugs, smoking), truancy, violence **Demographic**: Socioeconomic status (SES), gender, LGBQA identity **Others**: Eating disorders, poor academic performance, early school leaving	different risks of self-harm at ages 17 and 20, respectively. At age 13, three high-risk subgroups emerged: • The 'peer problems' group (10% of the cohort) was characterised by high probabilities of being bullied and unpopular and had internalising problems. This group had a 2.3-fold increased risk of self-harm at age 17 compared to the low-risk group. • The 'school and substance use problems' group (4.5%) showed high levels of substance use, violence, and truancy, and also had a 2.3-fold increased risk of self-harm. • The 'family conflict and externalising problems' group (3.9%) showed a 1.7-

					fold increased risk, though this was not statistically significant in the proportion comparison. At age 17, five subgroups were identified: • The 'depression (diagnosed) and psychiatric illness' group (5.9%) had the highest risk, with a relative risk (RR) of 13.9 (95% CI: 10.2–19.0) of self-harm by age 20. • The 'depression (undiagnosed), bullied and high substance use' group (6.9%) had a RR of 9.4 (95% CI: 6.8–13.1). • The 'depression (undiagnosed), bullied and low substance use' group (20.8%) had a RR of 7.4 (95% CI: 5.5–10.0).

					• The 'moderate smoking and high alcohol use' group (19.8%) had a RR of 3.9 (95% CI: 2.8–5.4). The findings underscore that combinations of undiagnosed depression, bullying, and substance use significantly elevate the risk of future self-harm. Notably, many high-risk individuals—particularly in the undiagnosed depression groups—may not be receiving appropriate mental health treatment. The authors emphasise that schools and community professionals (e.g., teachers, counsellors) could play a crucial role in identifying at-risk youth, particularly those experiencing bullying, poor mental health, or substance use, and refer them to appropriate support services. These results support the development of targeted interventions and

					the improvement of early detection strategies.
Silke et al 2024	The study aimed to: Identify the dominant classes of adversity experienced by adolescents across home, peer, and school contexts. Determine whether these adversity typologies are differentially associated with suicidal thoughts, suicide attempts, and self-harm behaviours. Examine whether similar adversity patterns and associated outcomes are observed across two independent cohorts from 2020 and 2022.	The study analysed data from 10,281 adolescents (approximately 50% male) who participated in the Irish Planet Youth survey in either 2020 (n = 5004) or 2022 (n = 5277). The majority were aged 15–16 years, with 90% identifying as white and 84% born in Ireland.	**Primary Outcomes**: Self-harm thoughts Self-harm behaviours Suicidal thoughts Suicide attempts	**Risk Factors**: Adversity experienced in home (e.g., parental conflict), peer (e.g., bullying, rejection), and school contexts. Multiple-context adversity (home, peer, school combined) significantly increased risk for suicidality and self-harm.	Using latent class analysis (LCA), four adversity profiles were identified: 1. **Multiple Adversity**: High likelihood of experiencing adversity across home, peer, and school contexts. 2. **Parent Adversity**: High adversity in the home environment. 3. **Peer Adversity**: Adversity in peer relationships (e.g., teasing, rejection). 4. **Low Adversity**: Low probability of adversity across all domains. Findings showed that adolescents in the Multiple Adversity group were at the greatest risk for all self-harm and suicidality outcomes. For instance, 91% of adolescents in this group

					reported self-harm thoughts, compared to 23% in the Low Adversity group. The odds ratio (OR) for self-harm thoughts for Multiple Adversity vs. Low Adversity was 33.13 (95% CI: 25.36–43.29). Similarly, 42% of the Multiple Adversity group reported having attempted suicide, compared to only 1% of the Low Adversity group, with an OR of 63.53 (95% CI: 44.17–91.38) for the 2022 cohort. Adolescents in the Peer Adversity group were also significantly more likely to report self-harm and suicidal thoughts. For example, they had an OR of 6.94 (95% CI: 5.90–8.15) for self-harm thoughts compared to the Low Adversity group, and an OR of 10.10 (95% CI: 7.41–13.77) for suicide attempts. The Parent Adversity group also showed increased risks across all outcomes, though generally lower than the Peer and Multiple Adversity

					groups. For instance, in 2022, the OR for suicidal thoughts was 5.87 (95% CI: 4.77–7.21), and for suicide attempts, it was 7.04 (95% CI: 4.99–9.93) relative to the Low Adversity group. Results were largely consistent across both years, with only minor differences in the magnitude of effects. Overall, the study concludes that adversity, particularly when experienced across multiple social domains, is a powerful predictor of youth suicidality and self-harm. These adolescents should be prioritised in screening, prevention, and intervention efforts.
McTernan et al 2024	The report aims to provide a detailed analysis of self-harm episodes and suicides across the Irish Prison Service estate during 2020 and 2021. It seeks to examine	The population of interest includes individuals in custody within the Irish Prison Service during the years 2020 and 2021. Specifically, it focuses on prisoners who engaged in self-	**Primary Outcome:** The primary outcome is the incidence rate of self-harm episodes across Irish prisons during the 2020-2021 period.	**Risk Factors:** **Mental Health Issues:** The majority of contributory factors related to mental health problems, including poor coping skills, impulsivity, and substance misuse.	The report identifies several key risk factors for self-harm in Irish prisons, particularly related to mental health, procedural challenges, and environmental stressors. Mental health issues were the most common contributing factor, with

	contributing factors, the extent and nature of self-harm, and propose evidence-based strategies to reduce these incidents within the prison environment.	harm or were at risk of self-harm, including both male and female prisoners, as well as those on remand or serving sentences.	**Secondary Outcomes:** The number of individuals engaging in repeat self-harm. The relationship between self-harm and factors like gender, age, prison status (sentenced or on remand), accommodation type, and offence type. The medical severity and suicidal intent of self-harm episodes.	**Procedural Factors:** Issues related to transfers, protection status, or reduced access to regimes. **Environmental Factors:** The type of accommodation, particularly single-cell housing, is a key factor linked to self-harm. **Relational Factors:** Difficulties in relationships with family, fellow prisoners, or prison staff.	45.2% of episodes in 2020 and 53.7% in 2021 being linked to conditions such as poor coping skills, impulsivity, and substance misuse. Relational factors, such as difficulties with family, fellow prisoners, or staff, were also significant, contributing to 22.7% of self-harm incidents in 2020 and 14.0% in 2021. Environmental factors, particularly the type of accommodation, played a substantial role, with 77.3% of self-harm episodes in 2020 and 71.9% in 2021 occurring among prisoners in single-cell accommodation. Procedural factors, such as transfer issues, protection status, and reduced access to prison regimes, were reported in 9.3% of cases in 2020 and 9.6% in 2021. The report also highlights that prisoners on remand exhibited a higher rate of self-harm than sentenced prisoners, with a rate of 3.0 per 100 in 2020 and 3.1 per 100 in 2021, reflecting the

					heightened vulnerability of individuals awaiting trial. These findings underscore the complexity of the factors contributing to self-harm in prison, suggesting that a multifaceted approach to intervention is necessary to address both mental health challenges and environmental stresses.
Cully et al 2024	To investigate characteristics and self-harm repetition risk of those discharged from the ED without a referral for mental health–related aftercare.	Patients of any age presenting during the period 1st January 2013, to 31st December 2019 (inclusive) to the National Self-Harm Registry Ireland.	**Primary outcome:** Recommended next care **Secondary outcome:** Self-harm repetition was defined as a self-harm presentation to an ED following an index self-harm presentation at any time during the 7-year study period.	Self-harm history and method of self-harm (self-cutting)	Self-harm history had the strongest association with subsequent repetition. Repetition risk increased with each additional previous self-harm presentation, with the highest risk following presentations among those with a history of four or more previous presentations (adjusted hazard ratio (AHR) 9.30, 95% CI 8.14–10.62). Method of self-harm was also associated with repetition risk, with presentations involving self-cutting associated with higher risk of repetition compared to presentations IDO only.

Troya et al 2024	To examine trends in rates of self-harm among emergency department (ED) presenting older adults in Ireland over a 13-year period.	Older adults aged 60 years and over presenting with self-harm to hospital EDs in Ireland between January 1, 2007 and December 31, 2019 using the National Self-Harm Registry Ireland.	**Primary outcome:** Hospital presenting self-harm	Female older adults, austerity/recession years	Female rates were 1.1 times higher compared to their male counterparts (61.4 vs 53.9 per 100,000). Throughout the study time frame, females aged 60–69 years had the highest rates (88.1 per 100,000), while females aged 80 years and over had the lowest rates (18.7 per 100,000). Intentional drug overdose was the most commonly used method (75.5%), and alcohol was involved in 30.3% of presentations. Between the austerity and recession years (2007–2012), self-harm presentations were 7% higher compared to 2013–2019 (incidence rate ratio (IRR): 1.07 95% CI 1.02–1.13, p = 0.01).
Reynolds et al 2025	To identify and profile individuals who died by suicide and had gambling documented in their coronial file.	Data from the Irish Probable Suicide Death Study (IPSDS) 2015–2020 were collected through an annual census of closed coronial files	**Primary outcome:** Probable death by suicide where gambling was included	History of mental health condition, males, financial issues, drug or alcohol dependency, interpersonal problems, stressful life events	The vast majority were male and less than half were in employment at the time of death. Distal risk factors included a history of mood disorders, as well as drugs and/or alcohol dependency and past suicide attempts.

		for the years in question			Proximally, there were reports of recent depression, anxiety, substance use, recent inpatient hospital discharge, financial problems, interpersonal problems, and stressful life events.
Wilson et al 2025	To profile the characteristics of ED presentations for suicidal ideation and self-harm acts among males in Ireland, using clinical data collected by self-harm nurses within a dedicated national service for crisis presentations to Eds.	A retrospective cohort study was conducted involving analysis of data from the National Clinical Programme for Self-Harm and Suicide related Ideation (NCPSHI) from January 2018 to 2021.	**Primary outcome:** self-harm act, which is the direct physical outcome of self-harm regardless of suicidal intent (including cutting, drug related acts, attempted hanging, attempted drowning, shooting, jumping from a height and other) **Secondary outcome:** suicidal ideation, when someone is thinking about suicide, irrespective of a suicide plan and intent	Drug and alcohol involvement, non-engagement in mental health services	Drug and alcohol influence was proportionally higher among younger (24%) and middle-aged (26%), relative to older males (7%), who typically presented under the influence of alcohol alone. While males across age groups were typically not engaged with mental health services, this was highest among younger males presenting with self-harm acts (with 73% not engaged with services).
Healthy Ireland Survey 2024	To examine the health and health behaviours of people aged 15 and older, living in Ireland.	Healthy Ireland Survey 2021, 2022, 2023 and 2024 involving a total sample of 8,121 respondents.	Multiple health related outcomes, relevant to this report: suicide attempt	Younger people aged 15-34, poor health status	Overall, 7% of respondents report they have attempted to take their own life. Those aged 15-34 (11%) were significantly more likely than any other age group to report

					having attempted to take their own life. This compares to 5% of those aged 55-64 and 2% aged 65-74. Just over a fifth (22%) of those who report their health as bad report an attempt to take their own life, compared to 5% among those who report they are in good health.
Cox et al 2022	The primary aim of the IPSDS was to improve understanding of the demographic, social, and clinical characteristics of those who die by probable suicide in Ireland. The study also aimed to identify risk factors for probable suicide and to inform the planning, implementation, and evaluation of suicide prevention measures in Ireland.	The study focused on individuals who died by "probable suicide" in Ireland between 2015 and 2018. This includes those with a coronial suicide verdict and deaths considered likely to be suicides based on available evidence.	**Primary Outcome:** Identification of risk factors Identification of risk factors for probable suicide. **Secondary Outcomes:** The demographic, social, and clinical characteristics of those who died by probable suicide.	**Gender:** Men were at higher risk than women. **Age:** Ages 35-54 were at the highest risk **Mental Health Conditions:** Those with a history of mental health conditions were at higher risk. **Substance Use:** A large portion of deaths had a history of substance use or dependency. **Adverse Life Events:** Majority of the cohort had experience adverse life events such as financial difficulties. **Self-Harm History:** A history of self-harm corelated highly	Men accounted for 76% of the deaths in the IPSDS cohort, indicating that men are at a higher risk of suicide compared to women. The highest number of deaths occurred in individuals aged between 35-54 years, with the largest group being men aged 40-44. 66% of the cohort had a history of a mental health condition, with women (79%) more likely than men (62%) to have a mental health history. 33% had a history of substance use, with 77% of

				with a mental health condition and/or substance use. **Living Arrangements and Isolation:** A quarter of the cohort lived alone. **Relationship Status:** Being single, divorced, separated or widowed was associated with higher risk. **Contact with Medical Services:** Over half of the cohort had been in contact with medical services prior to their death. **Prescription Medication:** 55% of those taking prescription mental health medication were prescribed antidepressants.	these individuals having a history of drug dependency. 79% of the cohort experienced one or more adverse life events, such as relationship issues, financial difficulties, and mental health problems. 23% of the cohort had a history of self-harm. For those with a history of self-harm, 90% had a mental health condition, and 49% had a substance use history. 25% of the cohort lived alone. 2% (n=57) of the IPSDS cohort were identified as being homeless at the time of their death. This includes sleeping rough and staying in hostels or supported accommodation. A significant proportion of those who died by suicide were single (51% of men and 45% of women). Additionally, divorced or separated individuals were more at risk, especially women (11% of

					women vs. 7% of men). A higher proportion of women (6%) were widowed compared to men (2%). 51% of the IPSDS cohort had been in contact with medical services prior to their death. Of those, 49% had contact with a general practitioner (GP). 38% of the IPSDS cohort were known to be in receipt of prescribed mental health medication(s) at the time of their death. There were differences between men (53%) and women (33%). 55% of those prescribed medication were prescribed antidepressants.
Higgins et al 2024	To explore LGBTQI+ people's mental wellbeing including identifying the prevalence of mental health problems among the LGBTQI+ community, with specific emphasis on the adolescent	Online survey comprising 144 questions. In total, 2,806 people were included in the final sample.	Multiple health outcomes. Relevant to this study: self-harm and attempted suicide.	**LGBTIQ**	52% had self-harmed, 26% had made a suicide attempt. Compared to adolescents (12-19 years) in the My World Survey 2*, a national study of youth mental health conducted in 2019, LGBTQI+ young people aged14 – 18 in this study had: 3 times the

	and young adult cohort.				level of self-harm, 5 times the level of suicide attempts
Dooley et al 2019	To provide a comprehensive, national picture of the mental health and wellbeing of young people in Ireland, including adolescents (aged 12–19) and young adults (aged 18–25). It builds on the original My World Survey 1 (2012) to identify changes over time, explore risk and protective factors, and inform mental health policy, education, and service provision.	Nationally representative group of adolescents and young adults in Ireland, totalling over 19,000 participants. It was divided into two main cohorts: secondary school students and young adults in third-level education or employment.	Multiple health outcomes, including self-harm without wanting to take one's life and attempted suicide.	**Depression:** for attempted suicide, both adolescents and young adult samples **Anxiety:** for attempted suicide, both adolescents and young adult samples **Female gender:** for self-harm without intent to die, both adolescents and young adult samples **Alcohol and drug use:** for attempted suicide both adolescents and young adult samples	**Adolescent findings** *Prevalence* 23% reported that they had deliberately hurt themselves without wanting to take their own life at some point. Of those, 41% did so within the last year, 23% within the last six months, 19% within the last month, and 17% at some other time. Females (26%) were more likely to report self-harm than males (18%). Those in Senior Cycle (26%) were more likely to report this than those in Junior Cycle (20%). It was observed that 6% of adolescents reported to have made a suicide attempt, with similar rates across gender and school cycle. Of these, 49% indicated it was within the last year, 21% within the last six months, 9% within the last month, and 20% at some other time. *Risk factors* Males who reported to have made a suicide attempt were more likely to be in the

					moderate, severe or very severe categories for depression whereas females who reported this were more likely to be in the severe or very severe categories for data on adolescents who reported a suicide attempt and adolescents who did not report a suicide attempt. Similarly, young males who reported to have made an attempt to take their life were more likely to be in the severe or very severe range for anxiety, while young females who reported this were much more likely to be in the very severe range for anxiety. Adolescents who reported to have made a suicide attempt displayed significantly higher levels of problematic drinking (M=8.06, SD=6.52) than adolescents who did not report a suicide attempt (M=6.55, SD=5.06). Adolescents who reported this were more likely to be in the possible alcohol dependence category (7% vs 2% in adolescents who did not report this). They were

					also more likely to have smoked cannabis. **Young adult findings** *Prevalence* A total of 38% of the sample reported that they had ever deliberately hurt themselves without wanting to take their own life. Nearly 30% reported that it happened within the last year, 14% within the past six months and 15% within the past month. A further 43% reported that they had hurt themselves without wanting to take their own life at some other time. Females (42%) were much more likely to report ever deliberately hurting themselves without wanting to take their own life than males (22%). The majority of young adults (90%) reported that they had never attempted to take their life. Of the 10% who indicated that they had, 23% said it had been within the last year, 10% within the past six months and about 3% within the past month. Males (8%) were less likely to report having attempted to take

					their 74 63% had ever thought about taking their life thought they 'would not do it' 38% reported they deliberately hurt themselves without wanting to take their own life 12% reported they deliberately hurt themselves wanting to take their own life 10% reported they had made an attempt to lives, while 11% of females reported a suicide attempt. *Risk factors* Young adults who reported that they had ever hurt themselves without wanting to take their own life were much more likely to be in the moderate, severe or very severe categories for depression and anxiety. Young adults who had engaged in deliberate self-harm were also more likely to be in the harmful and hazardous drinking and possible alcohol dependence categories for alcohol behaviour. They were more likely to be in the moderate/substantial/severe drug abuse

Interventions for suicide prevention

Database searches

Supplementary Table 3. Characteristics of intervention studies identified from database searches

Review / study	Aim	Population of interest	Primary and secondary outcomes	Description of interventions	Year range of included studies	Number of included studies	Countries of origin	Results
Okolie et al 2020a Cochrane systematic review	To evaluate the effectiveness of interventions to restrict the availability of, or access to, means of suicide by jumping. These include the use of physical barriers, fencing safety nets at frequently used jumping sites, or restriction of access, such as by way of road closures.	Adults or children of all ethnicities exhibiting suicidal behaviour, mental disorders or those in which a diagnosis had not been made prior to suicide or attempted suicide.	Primary outcome: suicide Secondary outcome: self-harm	Interventions to restrict the availability of or access to mean of suicide by jumping. These include the use of physical barriers, fencing or safety nets at frequently used jumping sites, or restriction of access to these sites such as by the way of road closures.	1993-2017	14	Switzerland, USA, UK, Canada, New Zealand, Australia	Three meta-analyses examining means restriction showed significant overall reduction in suicide deaths (IRR= 0.09, 95% CI 0.03 to 0.27; P < 0.001), (IRR = 0.54, 95%CI 0.31-0.93; P = 0.03. I2 = 40.8%) and (IRR = 0.05, 95% CI 0.01 to 0.16; P < 0.001, I2=73.6%). Barriers (IRR = 0.07, 95% CI 0.02 to 0.24; P < 0.001) I2 = 84.1%) and safety nets (IRR= 0.09, 95% CI 0.01-1.30, P=0.07, I2=29.3%) also showed a significant reduction in suicide.

Okolie et al 2020b Cochrane systematic review	To evaluate the effectiveness of interventions to restrict the availability of, or access to, means of suicide on roads.	Adults or children of all ethnicities exhibiting suicidal behaviour, mental disorders or those in which a diagnosis had not been made prior to suicide or attempted suicide.	Primary outcome: suicide Secondary outcomes: attempted suicide and self-harm	Interventions to restrict the availability of, or access to, means of suicide on roads. These include the use of physical barriers or fencing at high-risk sites, implementation of barriers for high-risk individuals or situations, or in-built vehicle systems to detect and avoid collisions.	N/A	0	N/A	0
Nevarez et al 2024 Umbrella review	To provide a summary of evidence on means restriction activities for the prevention of suicide, through the integration of existing synthetised evidence, that is, systematic		Primary outcome: suicide	Limiting access to the means of suicide (i.e., means restriction)	2005-2023	12	Bangladesh, Colombia, India, Jordan and Sri Lanka, Denmark, Finland, Germany, Greece, Hungary, Ireland, Japan, South Korea, Taiwan, UK,	Firearm restriction showed inconsistent evidence on the effectiveness for suicide prevention; one review indicated that efficacy may be related to how common the method is. Physical barriers for suicide prevention by jumping was reported to be effective, railway suicides decreased with the installation of platform screen doors.

	reviews on limiting access to suicide methods and presenting evidence to inform potential universal public health interventions						USA, Australia, Austria, Canada, Hong Kong, India, Israel, Norway, Sri Lanka, Sweden, Switzerland, Taiwan, New Zealand, Netherlands, Norway, Samoa, Sweden.	Restrictions on pharmaceuticals, pesticides and poisonous gases decreased suicide rates.
Sharma et al 2024 Cochrane systematic review	To assess the effects of interventions delivered in educational settings to prevent or address self-harm and suicidal ideation in young people (up to the age of 25) and examine whether the	Young people (up to the age of 25)	Primary outcomes: self-harm Secondary outcome: suicide or suicidal ideation	Psychosocial universal, selective and indicated interventions that aimed to prevent self-harm and suicide	1990-2022	51	USA, China, Australia, Canada, Israel, Austria Belgium, Brazil, UK, Chile, Indonesia, Japan, Turkey, 10 European countries	Universal interventions show uncertain impact on self-harm timepoints, three months (OR 0.76, 95% CI 0.42 to 1.36), 4-12 months (OR 0.59, 95% CI 0.30 to 1.17; I2 = 42%), more than 12 months (OR 0.84, 95% CI 0.61 to 1.15; I2 = 0%). Selective interventions (e.g., Gatekeeper Training, Screening) may reduce self-harm in the short term (OR 0.71, 95% CI 0.54 to 0.93; I2 = 0%) but effects are unclear in

	relative effects on self-harm and suicide are modified by education setting							the medium term and minimal for suicidal ideation, based on low-certainty evidence. Indicated interventions (e.g., CBT, DBT, problem-solving) may slightly reduce self-harm and suicidal ideation, particularly postintervention (OR 0.19, 95% CI 0.02 to 1.76; I 2 = 0%), but findings are also low-certainty and evidence on repeated self-harm is very uncertain.
Bennett et al 2015 Umbrella Review	To examine school-based strategies and non-school-based interventions to prevent repeat suicide attempts, to facilitate evidence-informed decision making youth suicide prevention	Young people (up to the age of 24)	Primary outcome: suicidal behaviour	Youth suicide prevention, specifically school-based strategies and non-school-based interventions designed to prevent repeat attempts.	1980-May 2012	28	Not provided	School-based prevention (n = 7) reported decreased suicide attempts and suicidal ideation but not suicide. Prevention of repeat suicide attempts (n = 14) found that emergency department transition programs may reduce suicide deaths, and prevention with psychosocial interventions requires further evaluation.
Morken et al 2020	To evaluate the effects of	Children and	Primary outcome:	Any intervention aimed at preventing or reducing self-	2004-2017	8	Not provided	Therapeutic assessment showed uncertain effects on

Umbrella Review	interventions preventing self-harm and suicide in children and adolescents	adolescents under 18 with or without an identified risk of developing problems involving self-harm and/or suicide, or those who have already developed these problems.	self-harm, suicide	harm and suicide, including psychological therapy, psychosocial interventions, physical activity or nutrition.				repetition of self-harm at 12 (OR 0.75 (95 % CI 0.18 to 3.06)- and 24-months (OR 0.69 (95 % CI 0.23 to 2.14) follow-up (low certainty). MBT-A reported repetition of self-harm – 12-month follow-up was OR 0.26 (95 % KI 0.09 to 0.78) for DBT-A reported two low-certainty studies found reduced self-harm repetition (OR 0.72, 95% CI 0.12–4.40) over 16 weeks to 6 months. Two other low-certainty studies reported reduced suicidal ideation (SMD −0.62, 95% CI −1.07 to −0.16) over 16 weeks to 12 months for CBT reported one very low certainty study to have increased self-harm repetition (OR 1.88, 95% CI 0.30–11.73) at 6-month follow-up. Developmental group therapy showed mixed low-certainty results, one study

								showed increased repetition at 6 months (OR 1.72 (95% CI 0.56 to 5.24), others suggested slight reduction at 12 months (OR 0.80 (95% CI 0.22 to 2.97) Compliance Enhancement reported that one very low-certainty study showed possible reduced self-harm at 6 months (OR 0.67). Home-Based Family Intervention reported that one low-certainty study showed no significant effect on self-harm at 6 months (OR 1.02 (95% CI 0.41 to 2.51), one suicide reported. Emergency Green Cards, one very low-certainty study showed potential reduction in self-harm at 12 months (OR 0.50 (95% CI 0.12 to 2.04). Local Suicide Cluster Interventions, two very low-certainty studies reported no suicides over 4 years; one

								reported a suicide attempt post-intervention. Support for Suicide-Bereaved Youth, one very low-certainty study reported reduced risk of suicide over 3 years (RR 0.14 (95% CI 0.01 to 2.75). Digital Self-Management Tools reported, three low-certainty studies showed reductions in suicidal ideation post-intervention. Postcards, two low-certainty studies on suicide attempts had mixed results (RR 1.44 (95% CI 0.36 to 5.76) in one; reduction reported in another). One very low-certainty study showed no significant difference in self-injury; another reported reduced suicidal ideation.
Witt et al 2021a Cochrane systematic review	To assess the effects of psychosocial interventions for self-harm (SH) compared to comparison	Adults with a recent presentation to hospital or clinical services for SH (i.e.	Primary outcome: repeated self-harm Secondary outcomes: suicidal	1. Cognitive behavioural therapy (CBT)-based psychotherapy (e.g. CBT, problem-solving therapy [PST]) versus TAU or another comparator;	Up to 2020	76	UK, New Zealand, Australia, Canada, Iran, Denmark, Germany, Netherland	Individual CBT-based psychotherapy showed little to no effect on self-harm repetition (OR 0.35, 95% CI (0.12, 1.02) or frequency (OR 0.66, 95% CI (0.36, 1.21), based on four trials.

	types of care (e.g. treatment-as-usual, routine psychiatric care, enhanced usual care, active comparator) for adults (aged 18 years or older) who engage in SH.	within six months of trial entry)	ideation, suicide	2. Dialectical behaviour therapy (DBT) versus TAU or another comparator; 3. Mentalisation-based therapy (MBT) versus TAU or another comparator; 4. Emotion-regulation psychotherapy versus TAU or another comparator; 5. Psychodynamic psychotherapy versus TAU or another comparator; 6. Case management versus TAU or another comparator; 7. Structured general practitioner (GP) follow-up versus TAU or another comparator; 8. Brief emergency department-based interventions versus TAU or another comparator; 9. Remote contact interventions versus TAU or another comparator;			s, Republic of Ireland, Switzerland, Sweden, Taiwan, Belgium, China, Finland, French, Polynesia, India, Japan, Malaysia, Norway, Pakistan, South Africa, and Sri Lanka.	Group-based CBT-based psychotherapy probably showed no effect on SH repetition based on a single trial. DBT showed uncertain effects on self-harm repetition (OR 0.71, 95% CI (0.32, 1.55) based on six trials, but may reduce the frequency (MD −5.00, 95% CI (−8.92, −1.08) based on seven trials. MBT reduces self-harm repetition (OR 0.35, 95% CI (0.17, 0.73) based on one trial. Emotion-regulation psychotherapy reduces self-harm repetition (OR 0.34, 95% CI (0.13, 0.88) but not frequency, based on two trials. Psychodynamic psychotherapy showed little to no effect on self-harm repetition (OR 0.45, 95% CI (0.13, 1.56) but improved time to repetition (log-rank

				10.Provision of information and support versus TAU or another comparator; 11.Other multimodal interventions versus TAU or another comparator; 12.Other mixed interventions versus TAU or another comparator."				tests: p = .006 and p = .002) based on one trial. Case management showed little to no effect one self-harm repetition (OR 0.78, 95% CI (0.47, 1.30), based on four trials. Structured GP follow-up showed little to no effect on self-harm repetition (hospital records: OR 1.01, 95% CI (0.38, 2.68); emergency records: OR 2.56, 95% CI (0.80, 8.15), based on two trials. Brief emergency department-based interventions showed no effect on self-harm repetition (CAMS-based intervention: OR 0.33, 95% CI (0.03, 4.32), IMV model: OR = 1.00 (0.68–1.47), Alcohol misuse brief intervention: OR = 0.57 (0.20–1.60), and no effect on frequency or suicide, based on five trials. Remote contact interventions showed no effect on self-harm repetition

								but may reduce frequency (MD −0.74, 95% CI (−1.27, −0.21), based on one trial. Provision of information and support showed no effect on self-harm repetition (OR 1.09, 95% CI (0.79, 1.50) but may reduce suicide deaths (OR 0.12, 95% CI (0.03, 0.44), based on two trials.
Witt et al 2021b Cochrane systematic review	To assess the effects of psychosocial interventions or pharmacological agents or natural products for SH compared to comparison types of care (e.g. treatment-as-usual, routine psychiatric care, enhanced usual care, active comparator,	Children and adolescents up to 18 years of age who had recently engaged in self-harm	Primary outcome: repeated self-harm Secondary outcomes: suicidal ideation, suicide	Individual CBT-based psychotherapy; Dialectical behavioural therapy; Mentalisation therapy; Group-based psychotherapy; Enhanced assessment approaches; Compliance enhancement approaches; Family interventions; Remote contact interventions.	1995-2019	17	UK, USA, Australia, Canada, New Zealand, Spain	Individual CBT based psychotherapy showed little to no effect on self-harm repetition (OR 0.93, 95% CI (0.12, 7.24) or suicidal ideation (MD −8.44, 95% CI (−29.54, 12.66) based on two trials. DBT showed a significant reduction in self-harm repetition (OR 0.46, 95% CI 0.26 to 0.82) and moderate effect on suicidal ideation (SMD -0.43, 95% CI -0.68 to -0.18) postintervention based on four trials. MBT-A reported inconsistent results for self-harm repetition postintervention

	placebo, alternative pharmacological treatment, or a combination of these) for children and adolescents (up to 18 years of age) who engage in SH.							(OR 0.70, 95% CI 0.06 to 8.46) based on two trials. Group no effect on self-harm repetition and suicidal ideation postintervention based on three trials. Enhanced Assessment Approaches showed no effect on repetition of self-harm based on one trial. Compliance enhancement showed no effect on self-harm repetition however fewer episodes were reported based on one trial. Family therapy showed little to no effect on self-harm repetition across three trials. Remote contact interventions showed no evidence of reducing repetition of self-harm.
Siadat et al 2024 Umbrella review	To summarise evidence from systematic reviews, scoping reviews, and	Participants of any age	Primary outcome: suicidal ideation or behaviour	Any technology-based interventions, i.e. Internet-based, web-based, E-mail, mobile- or telephone-based, mobile apps, text messages, and social	2017-2022	6	Germany, England, Australia, China, and Hong Kong	Metanalysis of 6 systematic reviews. The overall Effect Size for the standard mean difference of the studies is −0.20 with a CI of (−0.26, −0.14). P<0.001. The

	meta-analyses evaluating the effects of any format of Internet-based, mobile-, or telephone-based intervention as a technology-based intervention in suicide prevention			networking which were used to prevent suicide ideation or behaviour				heterogeneity is found as 58.14% which is a moderate to substantial one
Laflamme et al 2022 Umbrella Review	Synthesise data from existing reviews on the prevention and/or reduction of suicide behaviour in older adults, including characteristics of relevant reviews, the definition of suicide	Adults aged 60 and older	Primary outcome: suicidal behaviour	Prevention measures in the pathway ranging from suicidal ideation to completed suicide	2009-2018	2	Australia, South Korea, France, Germany, Hong Kong, Israel, Japan, USA	Physical activity showed a reduction in suicidal ideation when compared “active” (≥150 min/week moderate or ≥75 min/week vigorous activity) vs. “inactive” individuals. Three studies (two South Korean, one Australian) focused on older adults. In two of these (67%; n = 50,745), older active individuals had significantly lower odds of suicidal ideation than inactive ones.

	behaviour used, the types of interventions included and their objectives, outcomes and effects; and to analyse the evidence for effectiveness.							Multifaceted behavioural interventions in primary care settings (collaborative care involving case managers and physicians) demonstrated reduced self-harm and suicidal ideation at 4, 6, and 8 months. At 24 months, one cluster RCT showed no significant effect (p = 0.12), while two others reported lower odds of suicidal ideation (OR 0.80, 95% CI (0.68, 0.94); p = 0.01).