Substance Use, Suicide Risk and Self-Harm: Evidence from Young People and Practitioners

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Chapter 1

A Systematic Review of the Nature of the Relationship between Self-Harm and Substance Use in Young People

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Abstract

Objectives: Self-harm and substance use among young people are positively associated, but gaps in our knowledge exist about the nature of the relationship, including for different substances and conceptualisations of self-harm. This systematic review synthesises current evidence to understand the nature of the relationship between self-harm and substance use in young people, to support future research directions and guide clinical priorities.

Method: A systematic search of four academic databases (PsycINFO, MEDLINE, Embase, and CINAHL) was conducted to identify peer-reviewed English language articles reporting on substance use and self-harm in young people aged 10-24 years between 2010-2025. Eligible studies were narratively synthesised and critically appraised using an adapted quality appraisal tool from O'Connor et al. (2016).

Results: A total of 18 quantitative studies were eligible. All reported a significant cross-sectional or longitudinal relationship of one or multiple substances, with self-harm outcomes that varied in their degree of non-suicidal intent. The strongest evidence was for a dose–response relationship between polysubstance use and self-harm, with greater severity and frequency of polysubstance use related to greater risk of self-harm, and with evidence of co-developing trajectories. There was some evidence that self-harm and substance use may have shared vulnerabilities, including maladaptive coping, impulsivity and genetic and familial traits, potentially accounting for the co-occurrence of behaviours over time.

Conclusion: There is a need for further research exploring shared vulnerabilities for substance use and self-harm in young people. Clinical practice and policy initiatives should adopt transdiagnostic approaches to preventing and managing self-harm and substance use in young people.

Key words: Young people; Self-Harm; Substance Use

1. Introduction

1.1 Self-harm and substance use in young people

Suicide and self-harm are considered global public health concerns (Hawton et al., 2012), with suicide the leading cause of death in young people (GBD 2025). Young people are at a critical developmental stage, with ongoing neurobiological, psychological, and social transitions meaning vulnerability to risk behaviours is heightened and can shape trajectories into adult life (Sawyer et al., 2018). The most common onset of risk behaviours, self-harm and substance use, occurs during this period and before the age of 25 (Farkas et al., 2024; WHO, 2024).

Self-harm refers to a deliberate act of self-poisoning or self-injury, often in response to emotional distress (NICE, 2022). Major challenges exist distinguishing self-harm with and without suicidal intent (i.e. non-suicidal self-injury 'NSSI' and self-harm 'NSSH'), with frequent fluidity and overlap in both general and clinical populations (Farkas et al., 2024). Moreover, self-harm is one of the strongest risk factors for suicide attempts, with 63% of those who die by suicide having a history of self-harm (Nock et al., 2006; NCISH, 2024). Recent estimates indicate the prevalence of self-harm in young people continues to rise with 16% of young people having engaged in self-harm (Farkas et al., 2024; O'Connor et al., 2018), and lifetime rates rising from 3.8% in 2000 to 6.7% in 2024 (ONS, 2024).

Substance use (including tobacco, alcohol, non-medical use of prescription drugs, and illicit drugs) can range from occasional or frequent recreational use to addiction and the experience of significant physical and psychological consequences. Those who use substances at a young age can experience disrupted neurodevelopment, mental health difficulties, educational and social impairments, and trajectories of substance use problems into adulthood (Stewart et al., 2023). Whilst recent evidence indicates there has been a decrease in young people engaging in substance use (Kelly, 2019), global estimates continue to be high with 12-57% of young people having engaged in substance use before age 16 (WHO, 2024).

1.2 Self-harm and substance use relationship in young people

Given self-harm and substance use typically onset during adolescence and early adulthood, with both elevating risk for a range of deleterious outcomes, researchers have sought to understand whether, and to a lesser extent how, they are associated. Existing reviews highlight a positive relationship between suicide and substance use in young people (Oliveira Gracini et al., 2024; Rioux et al., 2021), including a twofold increase in risk of suicidal ideation among those engaging in recreational substance use and a threefold increase among those meeting criteria for substance-related problems (Oliveira Gracini et al., 2024). The association may depend on substance use severity. Experimental substance use is not associated with higher risk of NSSI (Goñi-Sarriés et al., 2025) and suicide ideation (Oliveira Gracini et al., 2024). However, rather than a direct, causal link between substance use and risk, longitudinal research points to a bi-directional relationship: suicidality can precede substance use and substance use can precede suicidal behaviour (Rioux et al., 2021). Additionally, other review-level evidence indicates that substance use and self-harm cluster with other risk behaviours in young people, suggesting engagement in one risk behaviour is associated with increased likelihood of engagement in others (Bozzini et al., 2021) potentially due to shared underlying risk factors or vulnerabilities (e.g. early adversity, family conflict, peer influences, co-occurrence of risk behaviours, developmental difficulties and emotion dysregulation) (Bozzini et al., 2021; Yu et al., 2025).

While evidence on the relationship between substance use and self-harm in young people has begun to accumulate, important gaps remain. Recent reviews have focused specifically on suicidality (Oliveira Gracini et al., 2024; Rioux et al., 2021) or NSSI (Yu et al., 2025), limiting our understanding of the relationship between substance use and self-harm outcomes where intent is unclear. Others have excluded potentially key substances used by young people, including tobacco and alcohol (Oliveira Gracini et al., 2024) or focused narrowly on psychiatric categories of substance use disorder (Rioux et al., 2021). Moreover, several reviews are based predominantly on cross-sectional design studies, limiting insight into temporal and developmental dynamics of the relationship between self-harm and substance use (Bozzini et al., 2021; Oliveira Gracini et al., 2024; Yu et al., 2025). Enhancing our understanding of the nature of the relationship between substance use and self-harm in young people will support current policy and practice. Policies like *The Way Ahead* (Scottish

Government, 2022) highlight the urgent need for greater integration between mental health and substance use services, particularly to support young people with co-occurring difficulties. Enhancing our understanding of the nature of the relationship between self-harm and substance use is an important step towards offering more precise targets for prevention and early intervention strategies (PHS, 2025), and for supporting services to provide more holistic and integrated care for young people.

1.3 Review aim and question

The current review aims to systematically search, synthesise, and critically appraise contemporary evidence on the relationship between self-harm and substance use. Specifically, the review will address the question: *What is the nature of the relationship between self-harm and substance use in young people?*

Given the heterogeneity within both self-harm and substance use constructs, this review adopts a deliberately broad and exploratory approach. This includes the consideration of self-harm regardless of suicidal intent, alongside a wide range of substances and substance use behaviours to capture the full scope of their potential relationship in young people. This breadth may introduce risks, particularly that variability in the definition and measurement of self-harm and differences in substance type, frequency, and severity may obscure more specific patterns of association. However, by taking an exploratory approach, this review aims to provide a more comprehensive understanding to inform future, more targeted research and is consistent with other recent high quality relevant systematic reviews of self-harm risk in young people (e.g. Etherson et al., 2025).

2. Method

This systematic review follows PRISMA guidelines and a registered protocol (Page et al., 2021; PROSPERO Registration number: CRD420251176061)(see Appendix 1.1)

2.1 Eligibility criteria

The SPIDER (Sample, Phenomenon of Interest, Design, Evaluation, Research type) framework provided a structured approach to defining eligibility criteria, (Cooke et al., 2012) and is outlined in Table 1.

Table 1. SPIDER elements

Component	Criteria
Sample	Young People (aged 10-24)
Phenomenon of Interest	Substance use, self-harm (including NSSI/NSSH and self-harm with unclear intent)
Design	Quantitative observational studies (including cross-sectional descriptive, analytic surveys, longitudinal studies), qualitative (interviews, focus groups), and mixed design studies from 2010-2025.
Evaluation	Outcomes related to the nature of the relationship between substance use and self-harm (e.g. association, directionality, risk factors)
Research type	Quantitative, Qualitative, or Mixed Methods

Studies were included in this review if they met the following criteria:

a) Peer reviewed primary empirical research of quantitative, qualitative, or mixed methods design, published in English language between January 2010-August 2025. This period ensures the review includes contemporary research evidence, as recommended by NICE guidelines (NICE: NG225, 2022; NG64, 2017).
b) Study participants were aged 10-24 years. This age range follows the World Health Organisation (WHO) definition of young people (WHO, 1986) and was chosen because self-harm in younger children is rare (Wiggin et al., 2025).

Longitudinal design studies extending beyond the eligible age range were included where at least one exposure and outcome was reported within the 10-24-year age range.

c) Studies reporting measures of substance use (single substance or multiple; used recreationally or not as prescribed) on self-harm (including NSSI/NSSH and self-harm with unclear intent). Studies reporting multiple exposures were included if the substance use—self-harm relationship was a key focus and relevant data could be extracted.

Studies were excluded if they reported experimental/intervention studies, conference proceedings, case reports, theoretical review articles or grey literature such as dissertations and theses.

2.2 Search Strategy

Four electronic databases (CINAHL, EMBASE, MEDLINE, PsycINFO) were searched for eligible studies and were chosen to ensure cross-disciplinary coverage of relevant studies of substance use and self-harm in young people. Additional searching included screening reference lists of included studies. The search strategy and search terms were developed in an iterative approach based on scoping the existing literature, piloting, and through consultation with a University Librarian. Key terms and synonyms were identified for the following concepts and combined using Boolean operators: 'self-harm', 'young people', 'substance use'. See Appendix (1.2) for full search strategy.

2.3 Screening

Database search results were imported into reference software Endnote 21. Duplicates were removed using automation tools and manually. The principal researcher screened all titles and abstracts for relevance before retrieving the full texts of remaining articles and assessing for eligibility. A second researcher independently screened 10% of a randomly selected sample of titles and abstracts and 20% of full texts. Discrepancies were discussed and resolved between researchers. A third researcher was available to resolve uncertainty should agreement not be reached.

3.4 Data Extraction

A template was used to extract standard items from included studies: study design, population and sample characteristics, main exposures/outcomes and their measurement, information on analyses and relevant key findings (Boland et al., 2017) (See Appendix 1.3).

2.5 Quality Appraisal

An adapted quality assessment framework (from O'Connor et al., 2016) was used to critically appraise included studies. This tool was chosen as it incorporates standard indicators of study quality alongside indicators of quality for studies of suicide risk specifically (See Appendix 1.4). The principal researcher appraised all eligible studies, with a second researcher independently appraising 50%. The tool uses a 9-item index with possible scores ranging from 0-13, with study quality classified as 0-2 'very low', 3-4 'low', 5-7 'medium', 8-10 'good', 11-13 'excellent'. Quality appraisal outcomes did not determine decisions to include studies in the final synthesis, but are used throughout to support interpretation and review conclusions.

3.6 Synthesis of Findings

Initial scoping confirmed substantial heterogeneity in study designs, outcomes and measurement across eligible studies and therefore meta-analysis was not considered further (Campbell et al., 2019). Instead, a narrative synthesis summarised the studies and their findings to "tell the story" and make sense of the data (Popay et al., 2006, p.5; Purssell & McCrae, 2020). While narrative synthesis can lack transparency (Campbell et al., 2019), in the present review this was addressed through Popay and colleagues' (2006) four-stage approach, which emphasises the importance of transparency about the assessment of strength and generalisability of the review. The findings are presented in tabular and narrative form, including an overview of study characteristics and findings from the quality appraisal. As there is no universally accepted definition and nomenclature for self-harm (Silverman et al., 2007), the review retains the language used by primary authors. The synthesis considers separately studies of self-harm without suicidal intent (NSSI/NSSH) and self-harm when intent is unclear. Owing to the complexity of the literature, the synthesis

provides summary statements drawing together key conclusions directly relevant to the review aim and question.

3. Results

3.1 Search Results

The process of study selection, including numbers of studies included at each stage and reasons for exclusion is shown in Figure 1.

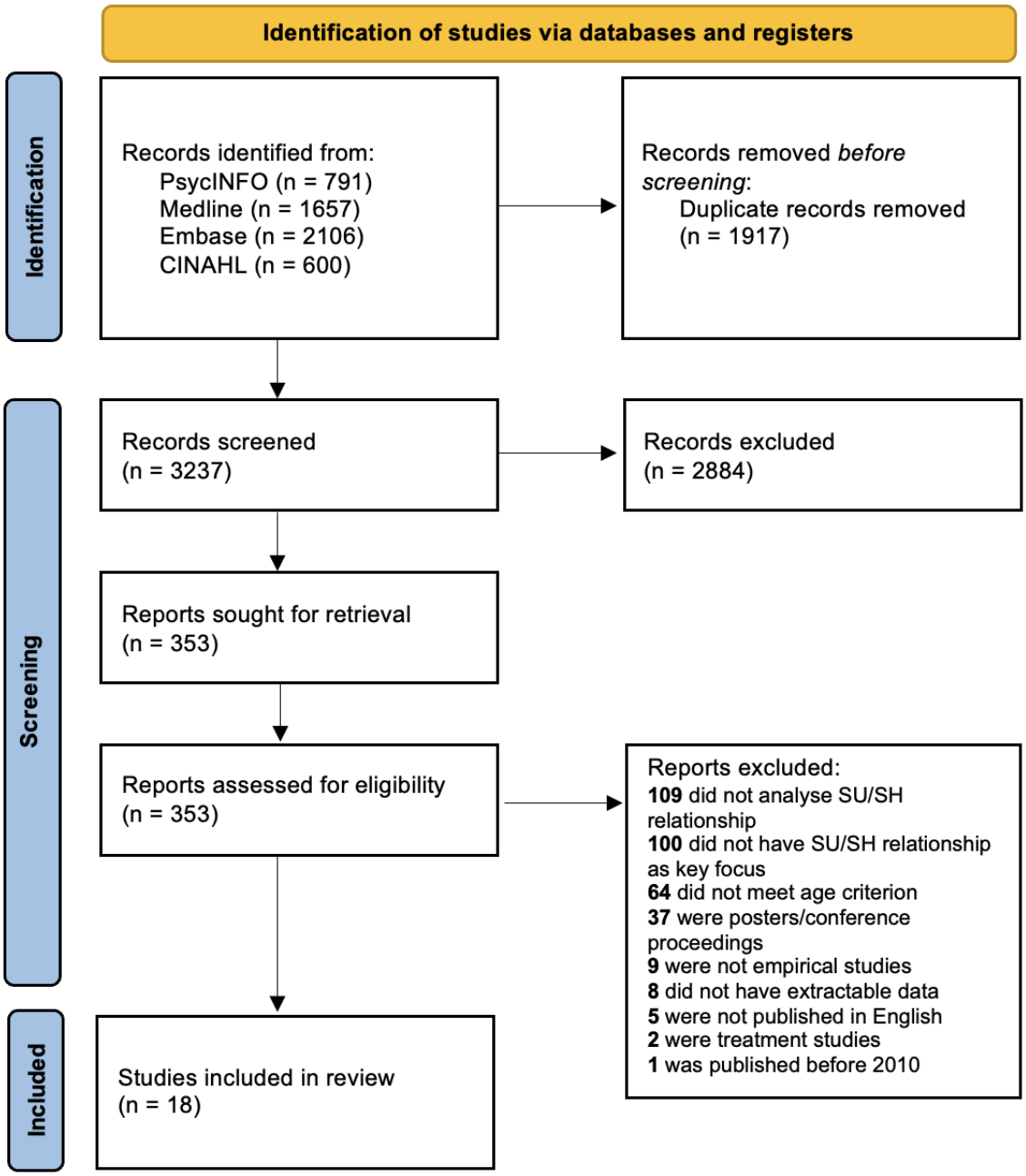

Figure 1. PRISMA flow diagram (Page et al., 2021)

After de-duplication, 3237 studies were screened by title and abstract by the principal researcher, followed by 353 full texts. The second reviewer screened 10% and 20% at each stage respectively. Disagreements were successfully resolved through discussion. At full-text assessment most excluded studies did not report a measure of substance use on self-harm. Figure 1 provides further details of reasons for exclusion. In total 18 studies, all quantitative, were eligible for inclusion in this review.

3.2 Study Characteristics

To facilitate readability of the synthesis, consistent with other systematic reviews (e.g. Zortea et al., 2021) in clinical psychology, each study has been allocated a unique identification number (See Table 2). Included studies were published between 2012-2025 in 11 countries: US (n= 4), China (n= 3), Norway (n= 2), Germany (n= 2), UK (n= 1), Malaysia (n= 1), Finland (n= 1), Australia (n= 1), Spain (n= 1), Turkey (n= 1), and Canada (n= 1). Sample sizes ranged from 71 to 807,105 participants, aged 10 to 22 years. When gender was reported, it was predominantly female. Study-level information is provided in Table 2.

Table 2. Study characteristics

Study No.	Authors	Sample	Study Design	Self-harm and Measure	Substance(s) and Measure
1	**Andrews et al. (2012)**	2,590 Australian secondary school pupils; M_{age} 13.9 (SD 0.98), 67.8% female, 89.3% born in Australia, 2.1% UK/Ireland, 1.4% NZ, 8.1% elsewhere, 1.3% Aboriginal, 0.8% Torres Strait Islander, SEP: Index of Relative Socio-economic Advantage and Disadvantage	Cross-sectional	***NSSI*** Self-report: items from Self-Harm Behaviour Questionnaire (Part A): measures frequency, methods, and intent of NSSI	***Alcohol*** Self-report: items from *AUDIT* (Australian version): first 3 items assessing quantity/frequency of drinking
2	**Chan et al. (2013)**	4,581 Malaysian high school-leavers; M_{age} 17.68 (SD 0.28), 52.5% female, 41.1% Malay, 22.2% Chinese, 6.5% Indian, Indigenous 18.4% Sabah & 7.5% Sarawak, 4.1% Other	Cross-sectional	***DSH*** Self-report: lifetime DSH via culturally adapted questionnaire (yes/no)	***Alcohol; Illicit Drugs; Tobacco*** Self-report: lifetime alcohol use, illicit drug use, and cigarette use (yes/no)
3	**Mars et al. (2014)**	4,799 British adolescents from Avon Longitudinal Study of Parents and Children, M_{age} 16y self-harm assessment, M_{age} 18y substance use assessment, More likely to be female and White British, SEP: maternal education, parental social class	Prospective longitudinal cohort	***NSSH*** 16y (exposure) self-report: items from *Child & Adolescent Self-Harm in Europe Study*: "Have you ever hurt yourself on purpose in any way (for example, by taking an overdose of pills or by cutting yourself)?" (yes/no) 21y (outcome) self-report: same question with follow-up of past year (yes/no)	***Alcohol; Cannabis; Tobacco; Illicit Drugs*** 18y (outcome) self-report: harmful drinking assessed via *AUDIT*; problem cannabis use assessed via *CAST*; regular smoking assessed via reported weekly smoking (yes/no); illicit drug use assessed via reported use of drugs in past 12 months (yes/no)
4	**Rossow & Norström (2014)**	2,647 Norwegian junior and senior high school pupils, T1 M_{age} 16.5y, T2 M_{age} 21.5y, 56.5% female, 93.6% with Norwegian-born parents	Longitudinal observational cohort	***DSH*** Assessed via question: "Have you ever on purpose taken an overdose of pills or in another way tried to hurt yourself?", in past 12 months (yes/no)	***Alcohol*** Heavy episodic drinking assessed by question: "During the past 12 months, have you had so much to drink that you felt clearly intoxicated?", six response categories coded to approximate yearly frequencies (never=0, once=1, two to five times=3.5, six to 10 times=8, 11-50 times=30, +50 times=55)

5	**Stewart et al. (2014)** **Canada**	2,013 Canadian adolescent inpatients; M_{age} 17.73y (SD 1.05), 45.5% female, 5.9% Aboriginal (Inuit, Metis or First Nations), SEP: Residential instability measured (lives at home vs temporary shelter)	Cross-sectional	***NSSI*** Clinician-rated: item from *RAI-MH:* past 12-month engagement in NSSI	***Inhalants; Hallucinogens; Stimulants; Cocaine/Crack; Opiates; Cannabis; Alcohol; Tobacco; Intentional misuse of prescription medications*** Clinician-rated: item from *RAI*-MH: past-year use of: inhalants, hallucinogens, stimulants, cocaine/crack, opiates, cannabis; past-year alcohol use; daily tobacco use; intentional misuse of prescription medications.
6	**Brausch & Boone (2015)** **USA**	4,839 US high school pupils; M_{age} 16.04y (SD 1.24); 49% female, 87% White/Caucasian; 2.4% Black/African American; 2.6% Hispanic/Latino; 4% Multiracial; 1.8% American Indian/Alaskan Native; 1.45% Asian/Asian American; 0.8% Other, SEP: Eligibility for free or reduced-price school meals measured	Cross-sectional	***NSSI*** Self-report: item adapted from YRBSS: "During the past 12 months, if you engaged in self-harm behaviour, how many times did you cut yourself, or hurt yourself in some other way, on purpose?"; Responses: none, 1, 2–3, 4–5, ≥6 times	***Alcohol; Tobacco; Marijuana; Illicit drugs; Prescription drugs*** Self-report: items from YRBSS: assessing past-30-day substance use (alcohol, tobacco, marijuana, illicit and prescription drugs)
7	**Nakar et al. (2016)**	513 German school pupils from the Saving and Empowering Young Lives in Europe (SEYLE) cohort, M_{age} 14.5y (SD 0.72) at baseline, 62.1% female	Prospective longitudinal cohort	***Self-injurious Behaviour*** Self-report: items from *Deliberate Self-Harm Inventory*: T0 lifetime prevalence, T2 & T3 past year, Response options: 0 none; 1 occasional [1–4 times]; 2 repetitive [≥5 times])	***Tobacco; Alcohol; Drugs*** Self-report: items from *Global School-based Student Health Survey*: cutoffs: nicotine: ≥2 cigarettes/day, alcohol: ≥3 hangovers in period, drugs: ≥3 uses; Response options: 0 misuse, 1 misused substance, 2 misused substances, 3 misused substances
8	**Jarvi & Swenson (2016)**	367 US college students; M_{age} 20.6y (SD 3.14), 73% female, 95% White/European American	Cross-sectional	***NSSI*** Self-report: *ISAS:* assessing lifetime NSSI (yes/no) and number of methods; Response options: NSSI method severity: 0 methods, 1 method, 2+ methods.	***Alcohol*** Self-report: single item ("How often do you drink alcohol?"); 5-point scale (never to several times per week). *Comprehensive Effects of Alcohol Questionnaire:* validated scale assessing positive and negative alcohol expectancies.

9	**Doksat et al. (2017)**	2,518 Turkish child and adolescent inpatient and outpatients; M_{age} 16y, approx. 89% male, SEP: Family economic status; parental separation/divorce	Cross-sectional	***NSSI*** Clinician-administered: item on lifetime purposeful self-injury without suicide intent (cutting, burning, hitting, scratching, overdosing, hanging, self-strangulation) (yes/no)	***Alcohol; Cannabis; Cocaine; Heroin; Inhalants; Synthetic cannabinoids; Benzodiazepines; Polysubstance*** Clinician administered: *WHO Student Drug Use Questionnaire* (Turkish version): assessing lifetime/current use; frequency; age of onset; use of alcohol, cannabis, cocaine, heroin, inhalants, synthetic cannabinoids, benzodiazepines, and polysubstance use.
10	**Korhonen et al. (2018)**	1,330 Finnish twin adolescents from FinnTwin12 cohort, T1 M_{age} 14y, T2 M_{age} 22y, 52.9% female, SEP: Parental education; school achievement measured	Longitudinal twin cohort	***Intentional Self-Injury*** Self-report: item from *SSAGA*: "Have you ever intentionally injured yourself by cutting/burning?" (yes/no)	***Tobacco*** Self-report: item from *SSAGA*: assessing tobacco use (age of initiation, baseline smoking status, daily smoking) at age 14 and 22
11	**Li et al. (2020)**	32,362 Chinese high school pupils, 12-19y, 51.2% female, SEP: school type; district socioeconomic development level	Cross-sectional	***DSH*** Self-report: item adapted from *YRBSS*: "In the past 12 months, have you ever deliberately committed self-harm?", response options: never, once, two-three times, four+ times.	***Alcohol*** Self-report: item adapted from the *YRBSS*: measuring age at first drink; lifetime use; current use; binge drinking; Categorised into four drinking severity levels: no alcohol use; non-recent use; recent use (past 30 days); binge drinking (≥5 drinks per occasion in past 30 days)
12	**Sellers et al. (2021)**	71 US adolescent inpatients; M_{age} 15.79y (SD 1.00), 75% female, 66% White, 23% Hispanic	Retrospective longitudinal	***NSSI*** *TFBC:* Daily NSSI over 90 days prior to hospitalisation	***Alcohol; Cannabis*** *TFBC:* Daily alcohol and cannabis use over 90 days prior to hospitalisation
13	**Xie et al. (2021)**	152,527 Chinese school pupils; M_{age} 15.1y (SD 1.9), 52% female, SEP: parental education; household socioeconomic status	Cross-sectional	***NSSI*** Self-report: single item on past 12-month frequency: "During the past 12 months, how many times did you hurt yourself in a way that was deliberate, but without wanting to die?" 8 NSSI behaviours.	***Nonmedical Use of Prescription Drugs (Opiods/Sedatives)*** Self-report: single item on past 12-month frequency: misuse of opioids (e.g., codeine syrup, tramadol); misuse of sedatives (e.g., diazepam, barbiturates) (yes/no)

14	**Guo et al. (2023)**	1,329 Chinese high school pupils (subsample of 24 NSSI and 24 health controls for gene expression analysis), M_{age} 16.5y (SD 0.6), 61% female	Cross-sectional	***NSSI*** Self-report: *Youth Self-Harm Questionnaire:* assessing frequency of self-injury (0, 1, 2–5, ≥5 times) and severity of injury (none to very severe)	***Alcohol; Tobacco*** Self-report: items on alcohol frequency; responses: Never/Abstinent; <1x per week; 1–2x per weekly; daily; items on smoking frequency; responses: Never; Abstinent; <10 cigarettes per day; 11–20 per day; >20/day (Substance addiction inferred from higher use frequency)
15	**Oladunjoye et al. (2023)**	807,105 US adolescent inpatients from Nationwide Inpatient Sample database, 10-19y, 62.2% female, 54.9% White; 19.4% Black; 20.1% Hispanic; 5.6% Other, SEP: health insurance status	Cross-sectional	***Suicide attempt/Self-Harm*** Assessed via *ICD-10* codes for: Suicide attempts/self-harm	***Cannabis Use Disorder (CUD)*** Assessed via *ICD-10* codes for: CUD
16	**Steinhoff et al. (2024)** **Germany**	277 German adolescent inpatients; M_{age} 14.9y (SD 1.5) at baseline, 89.9% female, SEP: school type; parental relationship status	Prospective longitudinal cohort	***NSSI*** Self-report: *Self-Injurious Thoughts and Behaviours Interview* (German version) assessing past-year frequency of NSSI at all timepoints	***Alcohol; Illicit substances*** Self-report: items adapted from *YRBSS:* assessing past-year alcohol and illicit substance use at all timepoints, Responses: 7-point scale from never to daily.
17	**Arqueros et al. (2025)**	1,526 Spanish secondary school pupils, M_{age} 13.8y (SD 1.27), 54.3% female	Cross-sectional	***NSSI*** Self-report: *ISAS* (Spanish version); Responses: No NSSI, Single NSSI event, Repeated NSSI	***Alcohol; Cannabis*** Self-report: *AUDIT; CAST* (Spanish versions)
18	**Celik & Cakar (2025)**	15,430 Norwegian middle and high school pupils from Ungdata National Survey; 13-19y, 51.6% female, SEP: Subjective family economic status	Cross-sectional	***Physical Self-Harm*** Self-report: single item assessing physical self-harm (≥1 episode) in last 12 months. Responses: no, yes (once), yes (several times).	***Cannabis; Alcohol; Tobacco*** Self-report: cannabis use, binge drinking, smoking, and snus (smokeless tobacco) use in last 12 months. Responses given by frequency from 1 (never) to 5 (daily).

Note: *SEP: Socioeconomic Position; NSSI: Non-Suicidal Self-Injury; DSH: Deliberate Self-Harm; NSSH: Non-Suicidal Self-Harm; ISAS: Inventory of Statements About Self-Injury; YRBSS: Youth Risk Behaviour Surveillance System; AUDIT: Alcohol Use Disorders Identification Test; ; CAST: Cannabis Abuse Screening Test; RAI-MH: Resident Assessment Instrument–Mental Health; SSAGA: Semi-Structured Assessment for the Genetics of Alcoholism; TFBC: Timeline Follow-Back Calendar; ICD-10: International Classification of Diseases-10*

3.3 Quality assessment

Methodological quality was mainly low (9 studies) to medium (5 studies) with only 4 of 18 studies judged to be good quality. Consistent methodological weaknesses included insufficient justification for study sample size and limitations in measurement, including a reliance on single-item or non-validated self-report (studies 2, 5, 6, 11, 13, 14, and 18). One study combined self-harm with suicide attempts, limiting construct specificity and comparability across other studies (study 15). The four good quality studies were longitudinal in design, with large sample sizes, transparency in reporting and appropriate handling of missing data (studies 3, 7, 10, and 16). See Appendix 1.4 for full quality appraisal reporting.

3.4 Narrative Synthesis

3.4.1 NSSI/NSSH and Substance Use Relationship

Eleven studies investigated the relationship between NSSI/NSSH and substance use. Table 3 indicates whether there is an association between NSSI/NSSH and substance use and provides further details to help identify the nature of the relationship.

Table 3. Nature of relationship between NSSI/NSSH and substance use

Study Number *(n=11)*	Is self-harm & substance use associated ?	Population	Analysis & Confounding	Evidence for the nature of relationship between self-harm & substance use
1	✓	Australian secondary school pupils	Multinomial logistic regression (with follow-up binary logistic regressions) controlling for: - *age* - *gender* - *religiosity* - *psychological distress* - *coping styles* - *emotion regulation* - *social support* - *self-esteem*	***Alcohol & NSSI*** Positive (bivariate only); not significant after adjustment → shared vulnerability
3	✓	British adolescents from Avon Longitudinal Study of Parents and Children birth cohort	Four-wave longitudinal cohort using multivariable logistic regression controlling for: - *sex* - *SEP* - *prior depressive symptoms*	***Polysubstance & NSSH*** Positive, adjusted; longitudinal; NSSH → later substance use
5	✓	Canadian adolescent inpatients	Multivariable logistic regression controlling for: - *age* - *sex* - *psychiatric diagnoses* - *level of psychosocial functioning* - *history of trauma*	***Polysubstance & NSSI*** Positive, adjusted; stronger with polysubstance misuse
6	✓	US high school pupils	Cross-sectional MANOVA with no multivariable adjustment for demographic or psychosocial confounders beyond grouping by NSSI severity.	***Polysubstance & NSSI*** Positive, dose–response; unadjusted

8	✓	US college students	Multivariable logistic and multinomial logistic regression controlling for: - *drinking status (drinker vs. non-drinker) or drinking frequency (in analyses limited to drinkers)* - *positive alcohol expectancies* - *negative alcohol expectancies* - *negative NSSI-related alcohol expectancies*	***Alcohol & NSSI*** Indirect association via alcohol expectancies; not significant direct alcohol-NSSI effect
9	✓	Turkish child and adolescent inpatient and outpatients	Multivariable logistic regression controlling for: - *age* - *gender* - *selected clinical and substance-related variables*	***Polysubstance & NSSI*** Positive, adjusted; greater substance severity → higher NSSI odds
12	✓	US adolescent inpatients	Multilevel (mixed-effects) logistic regression controlling for: - *demographics (age, gender, race, ethnicity, sexual orientation)* - *suicidal ideation and planning* - *hospitalisation status*	***Polysubstance & NSSI*** No independent effect; positive only for co-use (alcohol and cannabis, same-day)
13	✓	Chinese school pupils	Weighted multivariable logistic regression controlling for: - *age* - *sex* - *grade* - *residence* - *family structure* - *parental education* - *other substance use (smoking and alcohol)*	***Non-medical Use of Prescription Drugs & NSSI*** Positive, adjusted; NMPDU associated with higher NSSI odds
14	✓	Chinese high school pupils	Correlation analyses and group comparisons (ANOVA/ANCOVA) controlling for: - *age* - *gender*	***Polysubstance & NSSI*** Positive, dose–response (frequency & severity)

16	✓	German adolescent inpatients	Three-wave latent growth curve and growth mixture modelling to identify trajectories accounting for within-person change over time controlling for: - *age* - *sex*	***Polysubstance & NSSI*** Positive co-developmental trajectories; NSSI → substance shift in high-risk group, indicating symptom shifting
17	✓	Spanish secondary school pupils	Latent profile analysis followed by multivariable logistic, ordinal, and gamma regression models controlling for: - *age* - *gender*	***Polysubstance & NSSI*** Positive, graded association across substance risk profiles

Note: *NSSSI: Non-Suicidal Self-Injury; DSH: Deliberate Self-Harm; NSSH: Non-Suicidal Self-Harm*; *MANOVA: Multivariate Analysis of Variance; ANOVA: Analysis of Variance; ANCOVA: Analysis of Covariance*

NSSI/NSSH and Polysubstance Use Relationship. Eight studies examined the relationship between polysubstance use and self-harm without suicidal intent, with seven focusing on NSSI (studies 5, 6, 9, 12, 14, 16 and 17) and one on NSSH (study 3). Across studies, polysubstance use was defined as the use of two or more substances, most commonly alcohol, cannabis, tobacco or nicotine, illicit drugs, and/or non-medical use of prescription medications.

Five studies had cross-sectional designs (studies 5, 6, 9, 14 and 17), with four of these examining school populations. All four school-based studies consistently demonstrated a positive association between polysubstance use and NSSI. Higher frequency of substance use and polysubstance profiles were associated with increased prevalence, frequency, and severity of NSSI compared with single-substance use or no use (studies 6, 9, 14, and 17). Similar patterns were observed in a clinical sample, where intentional misuse of prescription medication, particularly in the context of polysubstance use, was associated with greater likelihood of NSSI (study 5). While cross-sectional studies consistently demonstrated a positive association between

polysubstance use and NSSI, these findings should be interpreted with a degree of caution due to low quality assessment ratings.

Three longitudinal studies provided more robust insight into the temporal and developmental nature of this relationship (studies 3, 12, and 16). A population-based cohort study found that NSSH at age 16 was associated with increased likelihood of polysubstance use at age 18, indicating a temporal association between earlier self-harm and later polysubstance use rather than single-substance use alone (study 3). Using within-person daily analyses over a 90-day period prior to psychiatric hospitalisation, another study found the probability of NSSI was higher on days when alcohol and cannabis use co-occurred, with no significant association observed for alcohol or cannabis use alone (study 12). A growth mixture modelling study identified heterogeneous co-developing (joint) trajectories of NSSI and substance use, demonstrating that although NSSI declined across groups, patterns of substance use developed in parallel (study 16). In this study, most young people showed increasing substance use over time, while a smaller subgroup demonstrated sharp increases alongside reductions in NSSI, suggesting possible 'symptom shifting'.

Across study designs, a positive association between polysubstance use and NSSI/NSSH was observed. However, stronger evidence from longitudinal and trajectory-based studies suggests this relationship reflects co-developmental patterns over time, whereas evidence for dose–response effects is more frequently derived from cross-sectional and low-quality analyses.

NSSI and Alcohol Use Relationship. Two cross-sectional studies examined the association between alcohol use alone and non-suicidal self-injury (NSSI) (studies 1, and 8). Both studies reported positive bivariate associations between alcohol use and NSSI in young people. However, in both cases, the association was no longer statistically significant after controlling for relevant psychosocial and cognitive factors. Specifically, a school-based study found that controlling for depressive symptoms, anxiety, stress, and maladaptive coping reduced the alcohol and NSSI association (study 1), while a college-based study reported that alcohol-related expectancies and

coping motives demonstrated stronger associations with NSSI than alcohol use frequency itself (study 8).

Overall, these findings suggest the relationship between alcohol use alone and NSSI is indirect, with alcohol use appearing to operate through broader psychosocial vulnerabilities and cognitive and motivational factors rather than functioning as an independent risk factor for NSSI.

NSSI and Non-Medical Use of Prescription Drugs (NMUPD) Relationship. One study investigated the relationship between NMUPD only and NSSI with a cross-sectional design (study 13). A school-based study found that young people engaging in NMUPD had significantly higher odds of NSSI, with adjusted odds ratios indicating a two- to three-fold increase in likelihood compared with those who did not (study 13). A dose–response relationship was observed, with more frequent NMUPD use associated with progressively higher odds of NSSI. These associations remained significant after controlling for demographic characteristics and other substance use.

Overall, the findings indicate a positive, correlational, and dose–responsive relationship between NMUPD and NSSI. However, due to low quality appraisal of the study, results should be interpreted with caution.

3.4.2 Self-Harm (unclear suicidal intent) and Substance Use Relationship

Seven studies investigated the relationship between self-harm with unclear suicidal intent and substance use. Table 4 presents further information on the relationship between self-harm and substance use in these studies.

Table 4. Nature of the relationship between self-harm (with unknown intent) and substance use

Study Number *(n=7)*	Is self-harm & substance use associated ?	Population	Analysis and Confounding	Evidence for the nature of the relationship between self-harm & substance use
2	✓	Malaysian high school-leavers	Multivariable logistic regression controlling for: - *age* - *gender* - *ethnicity* - *residence (urban/rural)* - *history of sexual abuse*	***Polysubstance & DSH*** Positive, adjusted; stronger for illicit drugs than alcohol.
4	✓	Norwegian junior and high school pupils	Two-wave longitudinal cohort and first difference fixed-effects modelling controlling for: - *poor social network* - *depressive symptoms*	***Heavy Episodic Drinking & DSH*** Positive, longitudinal; HED → DSH (proximal risk effect).
7	✓	German school pupils	Two-wave longitudinal general growth mixture modelling controlling for: - *age* - *sex* - *study intervention condition*	***Polysubstance & Self-injurious behaviour*** Strong co-developmental clustering; high-risk trajectories overlap (80–90%).
10	✓	Finnish adolescent twins	Prospective logistic regression controlling for: - *age* - *sex* - *school achievement* - *baseline depression (DSM-IV)* - *impulsivity* - *alcohol dependence symptoms* - *parental education* - *additional within-family (discordant twin) analyses to account for shared genetic and familial confounding*	***Tobacco & Intentional self-injury*** Positive, longitudinal; tobacco → later self-injury

11	✓	Chinese high school pupils	Log-binomial regression controlling for: - *age* - *gender* - *urban vs. suburban residence* - *school type (Key school vs. non-Key school)*	***Alcohol & DSH*** Positive, dose–response; earlier initiation and binge drinking increase risk.
15	✓	US adolescent inpatients	Multivariable logistic regression controlling for: - *age* - *sex* - *race* - *insurance* - *illness severity* - *psychiatric comorbidities* - *other substance use disorders (alcohol, nicotine, cocaine, stimulants)*	***CUD & Suicide attempt/self-harm*** Positive, adjusted; CUD independently associated with self-harm.
18	✓	Norwegian middle and high school pupils	Multivariable logistic regression controlling for: - *gender* - *school level (age proxy)* - *socioeconomic status* - *religiosity* - *victimization* - *mental and physical health factors* - *risky behaviours* - *protective factors*	***Polysubstance & Physical self-harm*** Positive, adjusted; stronger for smoking/cannabis.

Note: *DSH: Deliberate Self-Harm; CUD: Cannabis Use Disorder*

Self-harm (unclear suicidal intent) and Polysubstance Use Relationship. Three studies investigated the relationship between polysubstance use and self-harm with unclear suicidal intent in school-based samples (studies 2, 7, and 18). Substances assessed in studies were alcohol, tobacco/nicotine, cannabis, illicit drugs (e.g. hallucinogens, inhalants, stimulants, opioids) and NMUPD.

Two of the three studies used cross-sectional designs (studies 2 and 18). Both reported positive associations between polysubstance use and self-harm. Study 2 found a higher prevalence of deliberate self-harm among adolescents engaging in polysubstance use, while study 18 demonstrated a dose–response relationship, with higher levels of polysubstance use linked to increased risk of physical self-harm.

One study had a longitudinal design, using trajectory modelling to investigate the association between polysubstance use and self-injurious behaviour over time (study 7). This study identified within-person co-developmental trajectories of polysubstance use and self-injurious behaviour, with higher-risk polysubstance use trajectories demonstrating more persistent self-injurious behaviour.

Overall, a positive relationship between polysubstance use and self-harm was observed. However, evidence from cross-sectional studies primarily supported dose–response associations, while the longitudinal study provided stronger evidence for co-developmental trajectories, indicating overlapping risk patterns rather than a direct causal effect.

Self-harm (unclear suicidal intent) and Alcohol Use Relationship. Two studies investigated the relationship between alcohol use only and self-harm with unclear suicidal intent in school-based samples (studies 11, and 4). A longitudinal cohort study found increases in heavy episodic drinking were associated with increased risk of deliberate self-harm, with significant associations remaining after controlling for depressive symptoms and social network factors (study 4). A cross-sectional study found increased odds of self-harm in those who reported more frequent or binge drinking (study 11). Overall, the nature of the relationship between alcohol use and self-harm was positive and dose–responsive. However, these results should be interpreted with caution due to both studies being cross-sectional and appraised as low quality.

Intentional Self-Injury and Tobacco Use Relationship. One longitudinal study examined the relationship between tobacco use and intentional self-injury using a twin cohort sample (study 10). Early initiation of smoking was associated with increased likelihood of later intentional self-injury. This association remained after controlling for sex and baseline psychiatric symptoms. Twin modelling indicated the association was partly attributed to shared genetic factors, with additional contribution from environmental influences. The findings suggest a positive temporal relationship whereby tobacco use precedes intentional self-injury, with the

relationship partly explained by shared genetic vulnerability rather than a direct causal link.

Suicide attempt/Self-harm and Cannabis Use Disorder (CUD) Relationship.

One cross-sectional study examined the relationship between Cannabis Use Disorder (CUD) and suicide attempt/self-harm without distinguishing between suicidal and non-suicidal intent (study 15). In this clinical sample, adolescents with CUD had higher odds of suicide attempt/self-harm compared with those without CUD. Risk was particularly elevated among individuals engaging in polysubstance use, suggesting the relationship may reflect broader substance use severity rather than cannabis use alone. However, due to its cross-sectional nature and low-quality rating, these results should be interpreted with caution.

4. Discussion

This systematic review synthesised and critically appraised research investigating the nature of the relationship between self-harm and substance use in young people. Overall, findings indicate a positive relationship between self-harm and substance use. Higher-quality longitudinal and genetically informed studies more consistently support a developmental co-occurrence of self-harm and substance use, underpinned by shared vulnerabilities. In contrast, evidence suggesting strong associations with polysubstance use is derived more frequently from studies with lower methodological quality and cross-sectional designs, limiting confidence in causal or dose–response interpretations. Consequently, the relationship between self-harm and substance use is best understood as complex and developmentally co-occurring, with stronger evidence for shared underlying mechanisms than for substance-specific or quantity-driven effects.

4.1 Polysubstance Use and Self-Harm Risk

Polysubstance use is most consistently associated with self-harm, across study designs and regardless of suicidal intent. The nature of the relationship can be dose–responsive, whereby increased range and amount of substance use is associated with increased self-harm frequency and severity (Arqueros et al., 2025; Brausch & Boone, 2015; Doksat et al., 2017; Stewart et al., 2014; Steinhoff et al., 2024; Chan et al., 2013; Nakar et al., 2016; Oladunjoye et al., 2023). However, it is important to interpret these findings with caution, as many of these studies were cross-sectional or appraised as lower methodological quality. Whilst longitudinal evidence demonstrated self-harm at a younger age increases risk of later polysubstance use (Mars et al., 2014), trajectory research, using data-driven analytical methods, found that polysubstance use and self-harm patterns tend to develop in parallel across time (Nakar et al., 2016; Steinhoff et al., 2024). This distinction indicates that polysubstance use may be better understood as part of a broader pattern of co-occurring risk behaviours, rather than solely increasing self-harm risk.

Previous reviews have similarly demonstrated that increased number of substances and chronic substance use were associated with greater risk of suicidal behaviours

(Esposito-Smythers & Spirito, 2004; Oliveira Gracini et al., 2024) and a bidirectional relationship between substance use disorders and suicidal behaviours (Rioux et al., 2021). The present review can extend these findings to include self-harm both with and without suicidal intent and indicate shared risk trajectories. The co-development of adolescent risk behaviours (self-harm and substance use) may represent an example of dual-systems theory, whereby an imbalance between heightened reward system activation and still-maturing prefrontal cognitive control systems increase impulsivity and vulnerability to maladaptive coping strategies (Steinberg, 2010).

4.2 Shared Vulnerabilities

Evidence from higher-quality and longitudinal studies suggests that the co-development of self-harm and substance use is best explained by shared underlying vulnerabilities. Acute risk appears elevated during combined alcohol and cannabis use, but not significant with either substance alone, suggesting shared mechanisms of heightened impulsivity and emotional dysregulation (Sellers et al., 2021). Similarly, findings for alcohol and NSSI were not significant after controlling for depressive symptoms, anxiety, and coping motives (Andrews et al., 2012; Jarvi & Swenson, 2016), whereas heavy episodic and binge drinking showed positive, dose–responsive associations with self-harm when suicidal intent was unclear (Li et al., 2020; Rossow & Norström, 2014). This distinction suggests intensity and pattern of both self-harm and substance use, rather than mere presence of use, may be central to risk due to shared vulnerabilities.

Genetically informed studies included in the present review contribute to our understanding that self-harm and substance use co-develop through shared genetic and familial vulnerabilities. Early tobacco use predicted later self-harm in population analyses but not in discordant twin comparisons, indicating shared familial or genetic liability (Korhonen et al., 2018). Overlapping addiction-related genes have also been identified in chronic alcohol use and self-harm in young people (Guo et al., 2023). This aligns with twin modelling research suggesting shared traits (e.g. stress reactivity, impulsivity and emotion dysregulation) underlie early alcohol use and self-harm (Few et al., 2015).

These findings align with emerging evidence that the relationship between self-harm and substance use can be underpinned by maladaptive coping behaviours. (Moller et al., 2013; Xie et al., 2021). A recent meta-analysis proposes emotion dysregulation as a shared underlying mechanism in the association between substance use and NSSI (Yu et al., 2025). Given that adolescence is characterised by heightened emotional intensity and ongoing regulatory development (Fombouchet et al., 2023), both self-harm and substance use may function as maladaptive emotional regulation strategies (Buckholdt et al., 2015). Importantly, the current review extends this framework by suggesting that increasing reliance on multiple substances may reflect increased attempts at emotional regulation, therefore explaining the dose–response and parallel developmental patterns. This perspective also helps explain evidence for "symptom shifting" in trajectory studies (Steinhoff et al., 2024), supporting co-occurring reinforcement processes.

4.3 Implications for Research, Clinical Practice and Policy

This review highlights important considerations for future research. Most included studies were cross-sectional (12 out of 18). This may limit understanding about developmental pathways, which is vital for research on young people. Therefore, more longitudinal research investigating co-developmental trajectories and shared mechanisms, such as emotional dysregulation, coping, genetic and personality traits, and social contexts, is needed to identify high-risk groups and critical timepoints for intervention. Additionally, all included studies were quantitative. Future qualitative research exploring young people's lived experience of co-occurring self-harm and substance use is needed.

Clinically, findings emphasise the importance of recognising self-harm and substance use as interlinked behaviours characterised by shared vulnerabilities, as well as potentially polysubstance use posing increased risk. Practitioners supporting young people should consider transdiagnostic approaches using integrated assessment and intervention, focusing on potential underlying mechanisms rather than separate risk behaviours.

At a policy level, integrated prevention frameworks for self-harm and substance use should be prioritised in young people across education, health and community contexts. Whilst Scottish substance use policies already emphasise early intervention and person-centred approaches, policies should also focus on routine screening for polysubstance use within self-harm prevention strategies (Scottish Government, 2018; PHS, 2023). Consideration of integrated service provision of substance use and mental health support for young people is vital given the findings of co-development and shared vulnerabilities in this review.

4.4 Strengths and Limitations

A key strength of this review is its broad search strategy and inclusion of self-harm regardless of intent, which is in-keeping with clinical guidelines (NICE: NG225, 2022), as well as a wide range of potential substances, including polysubstance use. It is important to note that a meta-analysis of the relationship between self-harm and substance use in young people has recently been published but focused more narrowly on NSSI and there is surprisingly little overlap with papers included in this review (Yu et al., 2025). Further investigation of the review protocol suggests the initial aim may have been to investigate substance addiction rather than substance use, potentially accounting for differences in the studies identified and included. Included studies in the present review reported limited socioeconomic information, samples were disproportionately female and, particularly in western studies, white ethnicity. Additionally, half of included studies were appraised as low quality, presenting a notable limitation and requiring cautious interpretation of their findings. Many studies also focused on school or university populations that may not reflect broader sociocultural contexts due to recruitment bias and may limit generalisability to general and clinical populations (Henrich et al., 2010). Results should be interpreted with caution because of this. While the review excluded studies not translated to English (n = 5), potentially introducing bias towards research carried out in English speaking high-income contexts (Jackson & Kuriyama, 2019), inclusion of studies from 11 countries strengthens global relevance of the findings.

5. Conclusion

The relationship between self-harm and substance use in young people is complex and dynamic. This review has highlighted that self-harm and substance use co-develop across time. Further, the relationship is underpinned by shared vulnerabilities, through potential genetic factors, impulsivity and maladaptive coping behaviours. A more limited body of cross-sectional evidence also suggests that rather that there is some increased risk with polysubstance use compared to single substance use. Future research should investigate these underlying processes and consider polysubstance use as a significant risk factor compared with single substance use. The review findings highlight the need for a transdiagnostic approach with a need for integrated assessment of risk behaviours and consideration of shared mechanisms during intervention rather than treatment of substance use and self-harm in isolation.

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Chapter 2

Alcohol Treatment Service Staff Perceptions and Experiences of Working with and Managing Suicide Risk

Prepared in accordance with the author requirements for Journal of Substance Use and Addiction

Journal Submission Guidance

Plain Language Summary

Background: Alcohol is a risk factor for death by suicide, with almost one in five suicide deaths linked to alcohol use (Isaacs et al., 2022; WHO, 2019). Suicide risk is higher for those who use alcohol heavily for long periods of time (Isaacs et al., 2022). Almost a quarter of those who access support for alcohol problems have tried to take their own lives (Rontziokos & Deane, 2019). Staff who work in alcohol treatment services have an important role to manage and prevent suicide risk. More research is needed to understand what this process is like for staff in the UK.

Aims: This study explores the views and experiences of staff working with and managing suicide risk in alcohol treatment services. There are two main research questions:

1. How do staff manage suicide risk in their role?

2. How do staff experience working with and managing suicide risk and how does this impact them?

Methods: This study used a qualitative design and Interpretative Phenomenological Analysis (IPA) approach. The study recruited participants from NHS Greater Glasgow and Clyde Alcohol and Drug Recovery Services and two third sector organisations supporting people with alcohol problems. Seven participants (three NHS and four third sector staff) took part in one-to-one interviews, lasting up to an hour. Interviews were recorded, transcribed, and interpreted using IPA. IPA explores how people make sense of their experiences and the process involves trying to understand what the experience means to them. By looking closely at participants' words and how they express their experiences, shared themes were then developed.

Main Findings and Conclusions: This study was the first to explore the views and experiences of working with and managing suicide risk in alcohol treatment services. It found that staff working in these settings frequently manage suicide risk. Staff must balance their responsibility to prevent suicide with knowing that it is often unpredictable. Being open and direct in a therapeutic relationship can help manage suicide risk. This has an emotional impact on staff, which is helped by shared

responsibility and support in their team. Staff find it difficult to manage suicide risk in a system that is fragmented, with separated care pathways. This creates barriers for people with alcohol problems and leads to staff feeling helpless. Staff found training and experience helps them to feel more confident but training is often difficult to access. These findings highlight the importance of accessing suicide risk training, good team support, and clearer support pathways to support staff managing suicide risk in their role.

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Abstract

Objectives: Staff working in alcohol treatment services play a key role in suicide management and prevention. However, research exploring how this is experienced in a UK context is limited. The aim of this research was to explore alcohol treatment staff's perspectives and experiences of working with and managing suicide risk in their role.

Method: Semi-structured interviews were conducted with seven staff working in NHS and third-sector alcohol treatment services in Scotland. Interviews were audio-recorded, transcribed verbatim, and analysed using Interpretative Phenomenological Analysis to generate an idiographic and interpretative account of participants' lived experiences.

Results: Three group experiential themes were developed: (1) Holding responsibility in the face of uncertainty: suicide risk was experienced as a constant but unpredictable presence, requiring staff to balance professional responsibility with limits of control and manage the emotional aftermath of 'auto-pilot' responses; (2) Experiencing suicide risk as a relational process: participants described 'being alongside', direct communication about suicide, and contextual meaning-making (including stigma, trauma, poverty, and loneliness) as central to creating safety; (3) Working within and against a fragmented system: staff described barriers to accessing mental health care for clients with alcohol problems, perceived gatekeeping and stigma, and compensatory practices to prevent clients 'falling through the cracks', with team support acting as a key source of containment and shared responsibility.

Conclusion: Managing suicide risk in alcohol treatment services has a significant emotional impact under conditions of uncertainty and systemic fragmentation. Findings emphasise the importance of team-based containment, reflective support, and access to targeted training, and indicate that more integrated care pathways are needed to strengthen suicide risk management to reduce burden on staff.

Key words: Suicide, Alcohol, Staff experiences, Interpretative Phenomenological Analysis

1. Introduction

1.1 Alcohol and Suicide Risk

Suicide is a global public health concern, with approximately 720,000 people dying each year and many more attempting to take their own life (WHO, 2025). While suicide risk is multifactorial, determined by a complex interplay of biological, socio-cultural, environmental and psychological factors (Turecki et al., 2019), almost one in five (18%) suicide deaths globally are attributable to alcohol use (WHO, 2018). Furthermore, in Scotland, alcohol problems are a contributing factor in an estimated 56% of suicide deaths (NCISH, 2021), substantially higher than the rest of the UK and global figures, highlighting a national public health concern (Walsh et al., 2021).

Meta-analyses have consistently found alcohol use to be a significant risk factor for death by suicide (Darvishi et al., 2015; Isaacs et al., 2022). Chronic use of alcohol over longer periods of time appears to be particularly harmful when compared to patterns of frequency or quantity of alcohol consumption alone (Isaacs et al., 2022; Ledden et al., 2022), suggesting that the lived experience of alcohol-related harm over time plays a significant role in suicide risk. However, there is a complex interplay of risk factors for suicide related to alcohol problems (Kõlves et al., 2022). Alcohol intoxication is involved in a third of alcohol-related suicide attempts (Conner, 2015), potentially mediated by impulsivity, greater tolerance of pain (Jakubczyk et al., 2021), and impaired problem solving and alcohol myopia (Giancola et al. 2010). At an individual level, trait impulsivity has been identified as a shared vulnerability underlying both alcohol problems and suicidal behaviours (Courtney et al., 2012; O'Connor & Kirtley, 2018), while alcohol use disorder also causally increases major psychiatric risk factors for suicide including depression (Boden & Fergusson, 2011). Early life stressors, such as adverse childhood experiences, are also associated with the development of future alcohol problems and suicide risk, with poor self-regulation and maladaptive coping as potential underlying mechanisms (Sebalo et al., 2023). At a societal level, population-level increases in alcohol consumption are associated with higher suicide rates, reflecting the influence of normalised drinking cultures (Norström & Rossow, 2016). Stigma also plays a key role in increasing risk, with both suicide and alcohol problems

highly stigmatised (Crozier et al., 2023; Wyllie et al., 2025). If prejudiced attitudes and discriminatory practices are internalised, this can reduce help-seeking and disclosure (Crozier et al., 2023; Shi et al., 2022). Stigma towards substance use and suicide can be found within contemporary healthcare systems, which may further increase lack of treatment-seeking and lead to increased suicide risk (Bratt, 2025; Saunders et al., 2012).

Polysubstance use is also common among individuals with alcohol problems and is associated with increased suicide risk, including greater psychiatric comorbidity, impulsivity, and lethality of attempts (Poorolajal et al., 2016). The combined effects of multiple substances may further impair cognitive and emotional regulation, exacerbating vulnerability to suicidal behaviour (Conner & Bagge, 2019). Therefore, suicide risk in the context of alcohol use should be understood within broader patterns of substance use, particularly in treatment-seeking populations where polysubstance use is prevalent.

1.2 Suicide Risk in Alcohol Treatment Services

Individuals seeking treatment for alcohol problems represent a particularly high-risk group for suicidal behaviour. Around one in four people who access alcohol treatment services have attempted suicide (Rontziokos & Deane, 2019), tenfold the rate in the general population (Nock et al., 2008). In Scotland, over one-third (38%) of individuals who died by suicide and had accessed mental health services in the past year had contact with services in the week before their death (NCISH, 2021). While suicide deaths among those accessing addictions services in Scotland are not reported, 8% of those who died by suicide in England and Wales had contact with alcohol and substance treatment services in the last 12 months (NCISH, 2024). Alcohol treatment services therefore represent a crucial opportunity to prevent suicide in a high risk and vulnerable group. Increasingly alcohol and substance treatment services are provided through statutory NHS and third sector services. While the NHS Alcohol and Drug Recovery Services (ADRS) provide specialist clinical management of substance use disorders through evidence-based medical and psychosocial interventions, third sector organisations are often focused on recovery and person-centred supports. A common

feature of third sector provision includes roles for staff with lived experience of substance use or mental health difficulties, to support recovery modelling and aiming to reduce power imbalance between professionals and service users (Gillard & Holley, 2014).

Despite the complexity and interrelated nature of alcohol use and suicide risk, service provision in the UK has separated pathways for mental health and alcohol and substance services rather than integrated care (Bratt, 2025). Qualitative research has offered insight into service users' experiences of navigating addiction and mental health services in the UK, finding systemic gaps in support for self-harm and addiction due to strict eligibility criteria, waiting lists, and fragmented pathways, which can lead to individuals feeling they are 'falling through the cracks' (Chandler & Taylor, 2021). Structural pressures such as underfunding and poor service integration have been shown to contribute to crisis-driven rather than preventative responses, increasing suicide risk through challenges in continuity of care and miscommunication between services (NCISH, 2019). Notwithstanding the major challenges experienced by service users, qualitative studies with practitioners highlight that fragmentation between mental health and substance use services increases emotional and moral strain, as well as feelings of frustration that they are unable to support their clients efficiently (Goldstone & Bjantes, 2017; Goldstone & Bjantes 2019). The impact on practitioners is significant, with feelings of hopelessness and helplessness surrounding suicide risk management as well as difficulties determining the seriousness of suicide risk (Goldstone & Bjantes, 2019). These emotional and practical challenges can lead to burnout, reducing the quality of care for service users which may further impact suicide prevention efforts (Goldstone & Bjantes, 2019). However, this is potentially preventable, with appropriate support and training enhancing confidence and fostering an increased sense of efficacy (Boukouvalas et al., 2020).

Although alcohol treatment services, including those provided by the NHS and third sector, have a key role to play in suicide prevention, research exploring experiences of staff working with and managing suicide risk specifically within UK alcohol treatment services is limited. This represents a significant gap in our understanding. Indeed, Scottish policy, including the 'No Wrong Door' approach (Mental Welfare Commission,

2022), aims to reduce service fragmentation and prevent individuals from “falling through the cracks” (Chandler & Taylor, 2021), while the current suicide prevention strategy seeks to work jointly across suicide and substance misuse (Scottish Government, 2022). However, to date, there is limited understanding of how suicide risk is experienced, understood, and managed by alcohol treatment staff within these policy and practice contexts. The aim of the present qualitative study is therefore to explore the lived experiences of alcohol treatment staff, including the impact of managing suicide risk within alcohol treatment settings. The study has two main research questions:

1. How do alcohol treatment service staff manage potential suicide risk (including historical and present self-harm and suicidal thoughts and behaviours) in their role?
2. How do alcohol treatment service staff experience working with and managing suicide risk among service users and how does this impact them?

2. Method

2.1 Design

This study used a qualitative interview design and Interpretative Phenomenological Analysis (IPA) to explore participants' lived experiences in depth, recognising the complexity and limited research in this area (Smith et al., 2022). Although participants share relatively homogeneous experiences of working in alcohol treatment services, differences in roles and contexts (e.g., third sector vs NHS; managerial vs frontline) likely shape how they experience managing suicide risk. An idiographic approach was therefore adopted to examine multiple perspectives and identify areas of convergence and divergence, rather than generalising findings to all alcohol treatment staff (Larkin et al., 2019).

IPA is grounded in phenomenology, which focuses on how individuals perceive and make sense of their lived experiences (Smith et al., 2022). Central to this is 'bracketing', where researchers attempt to set aside pre-existing assumptions to better understand participants' accounts (Larkin & Thompson, 2011). However, IPA also acknowledges the researcher's active interpretative role, often described as gaining an 'insider's perspective' (Conrad, 1987). Through a double hermeneutic process, participants make sense of their experiences, and the researcher interprets that meaning-making (Smith et al., 2022).

While IPA is typically used with small, relatively homogeneous samples, a degree of heterogeneity was expected in the present study across professional roles and organisational contexts. Nonetheless, all roles and organisational contexts shared a common focus on working with suicide risk within alcohol treatment services, providing a meaningful point of convergence across participants. Variation in roles (e.g., frontline vs managerial; NHS vs third sector; less vs more experienced) also enabled exploration of both shared and divergent experiences. Overall, then, IPA was considered a suitable approach as it allowed for in-depth exploration of lived experience, particularly recognising the lived experience often present in third sector recovery services, while retaining sensitivity to both convergence and divergence across cases. However, because heterogeneity may limit the depth of idiographic

analysis within any single subgroup, care should be taken during interpretation to avoid overgeneralisation.

2.2 Participants and Recruitment

IPA typically involves small, homogeneous samples to enable in-depth, case-level analysis. For professional doctorate research, 6–10 interviews are recommended to prioritise depth and quality when examining complex human experiences (Smith et al., 2022). Eligible participants were current staff working in services supporting individuals with alcohol problems, recognising that service users may also present with polysubstance use.

Seven participants completed semi-structured interviews. Three were recruited from two NHS Greater Glasgow and Clyde (GG&C) ADRS and four from two third sector alcohol treatment services within the same area. In ADRS teams, two psychologists circulated study information to staff without knowing who expressed interest or took part. Information sheets outlined the study aims, what participation involved, and contact details for the principal researcher (Appendix 2.1). Interested individuals were offered a telephone or video call to discuss the study before arranging an interview.

Participants ranged in age from 29–66 years, with professional experience ranging from three months to 25 years (including previous roles). NHS participants included two addictions nurses and one senior addictions nurse; third sector participants included three addictions practitioners and one service manager. The sample comprised five women and two men. Further demographic information was excluded to protect confidentiality.

2.3 Procedure and Interview

Ethical approval for this study was provided by The University of Glasgow MVLS College Ethics Committee (REF: 200240409) (See Appendix 2.2). Approval was also gained from NHS GG&C Health Board R&I to allow access to staff (REF: UGN25MH187) (See Appendix 2.3).

The semi-structured interview schedule was developed in line with IPA guidance, funnelling from broad to more focused questions (Smith, 2015) (See Appendix 2.4). Given the sensitive topic, the principal researcher consulted with two clinical psychologists from NHS GG&C ADRS when developing the schedule. Interviews centred on three main areas: how suicide risk is managed in participants' roles, examples of managing suicide risk, and the personal impact of this work. Follow-up prompts allowed flexibility and responsiveness to participants' accounts. Recognising that service users may also present with polysubstance use, participants were encouraged by the interviewer to focus on experiences where alcohol was the primary problem. However, examples which also included polysubstance use were not excluded.

Interviews were conducted between August–October 2025, lasting 43–60 minutes (mean = 47 minutes). In-person interviews took place in a single occupancy room at University of Glasgow or the participant's workplace. Online interviews took place on Microsoft Teams, with participants ensuring they were in a space where they could not be overheard or distracted by others. Participants provided written and verbal consent to take part prior to interviews (See Appendix 2.5). Audio recordings were captured on an encrypted Dictaphone, securely uploaded to the University of Glasgow OneDrive, and stored in accordance with GDPR.

Due to the sensitive nature of the topic, participants received written signposting information for internal (e.g., Occupational Health) and external supports (See Appendix 2.6). They were reminded of their right to pause or withdraw at any time. A follow-up email or telephone call was made 2–3 days after interview to check wellbeing and confirm consent for data use, with a further opportunity to withdraw.

Following data collection, interviews were transcribed and analysed manually in accordance with IPA methodology. Service locations and organisation names were omitted, identifiable details removed, and pseudonyms assigned. The study is reported in line with COREQ (Tong et al., 2007) (See Appendix 2.7).

2.4 Data Analysis

Following semi-structured interviews, analysis was conducted in line with the seven stages of IPA outlined by Smith and colleagues (2022). A detailed case-by-case analysis of each transcript was undertaken before moving to cross-case interpretation. This began with repeated reading to become immersed in the data, alongside exploratory noting, attending closely to participants' language, meanings, and contextual nuances. From these notes, experiential statements were developed to capture psychologically salient aspects of each participant's account (See Appendix 2.8).

Connections were then explored within each individual transcript, allowing personal experiential themes to be generated. These themes aimed to reflect the unique, idiographic account of each participant's lived experience, preserving both descriptive and interpretative elements. Themes were identified for each case before proceeding to the next transcript, ensuring that new accounts were considered individually and 'bracketed' from other transcripts.

Once all cases had been analysed individually, patterns across cases were explored. This involved careful focus on convergence and divergence in participants' accounts, identifying where experiences overlapped and where they differed in meaning or context. Through this process, personal experiential themes were clustered into group experiential themes, providing shared patterns while retaining sensitivity to individual variation (Appendix 2.9).

2.5 Reflexivity

The principal researcher is a white Scottish female trainee clinical psychologist with a personal interest in, and lived exposure to, alcohol problems within family and friendship contexts. She has not previously worked in alcohol treatment services. Participants were not known to the researcher prior to the study and were aware only of her professional role.

A reflexive journal was maintained throughout data collection and analysis to critically consider how assumptions and positionality may have shaped the interviews and interpretative process. This supported ongoing awareness of potential biases and their

influence on meaning-making. Reflexive practice informed data collection through awareness that participants, as staff, may have felt limited in speaking openly about challenging experiences due to the researcher's identity as a trainee clinical psychologist in NHS, potentially influencing how they discussed service-related issues. In attempt to mitigate this, the researcher explicitly clarified at the beginning of each interview that she was interviewing participants in a research capacity rather than a clinical role. During analysis, reflexivity involved actively questioning initial interpretations by returning to transcripts to check assumptions and ensuring that themes were grounded in participants' accounts rather than shaped by the researcher's prior experiences or expectations. See Appendix 2.10 for a sample of the reflexive journal.

3. Results

Interpretative Phenomenological Analysis of participant interviews led to three group experiential themes (GET) and three subthemes in each GET (see Table 1). The three GETs offer a multi-layered interpretation of managing suicide risk in alcohol services. The first focuses on intrapersonal psychological processes, exploring how participants psychologically process and emotionally manage suicide risk. The second moves to the interpersonal level, examining how risk is negotiated within practitioner-client relationships. The third situates these experiences within the wider organisational and systemic context. Together, the themes progress from internal, to relational, to systemic levels, demonstrating suicide risk management is a dynamic process shaped by interacting layers of experience while maintaining the complexity of participants' accounts.

Table 1. GETs and Subthemes

GET	Subtheme
1. Holding responsibility in the face of uncertainty	1.1 Suicide risk as a constant but unpredictable presence
	1.2 Balancing responsibility with a lack of control
	1.3 The emotional cost of managing suicide risk
2. Experiencing suicide risk as a relational process	2.1 'Being alongside' as the heart of intervention
	2.2 Creating safety through direct and open communication
	2.3 Making sense of suicide risk and alcohol problems
3. Working within and against a fragmented system	3.1 Navigating and filling service gaps
	3.2 The team as a container for anxiety, risk, and responsibility
	3.3 Learning to tolerate risk through training and experience

3.1. Holding responsibility in the face of uncertainty

This theme encapsulated participants' psychological and emotional process of managing suicide risk within alcohol treatment services. Suicide risk was experienced as both expected and unpredictable. Therefore, participants' experience and interpretation was one of having to balance the professional responsibility they have to keep people safe, while also recognising that they cannot control what happens beyond the limits of their role. All participants described making sense of managing suicide risk in the moment and the impact that this can have emotionally afterwards, requiring their own methods of coping.

3.1.1 Suicide risk as a constant but unpredictable presence

Participants shared the experience of routinely managing suicide risk in their role, sometimes as often as weekly. Three participants described it as 'part and parcel', suggesting suicide risk is integral to the role and normalised in the context of supporting people with alcohol problems. However, the experience was paradoxical in that whilst suicide risk is expected, there does not seem to be a predictable pattern to the process.

A challenge that participants often face as part of the unpredictability is determining the 'seriousness' of suicide risk, as clients often express distress related to alcohol problems:

> *"we have a lot of people come in and say "oh, I'm feeling very down... em I've got nothing else to live for [...] and it's just why I drink [...] so if we class that as they're feeling suicidal, it's [...] (sighs) 4 out of every 10"* (Gary, third sector)

Gary reflects here on how suicidal language is a frequent presence, with his sigh demonstrating the emotional heaviness involved when faced with the challenging task of interpreting. Similarly, some participants recognised that for some clients, suicide risk can often present as chronic and persistent, which can bring emotional challenges due to the need to take every disclosure seriously regardless of whether risk is imminent or not. This led to Lisa (NHS) wishing for "a crystal ball" when managing

suicide risk, conveying the challenges and stress that its unpredictability can produce in participants.

Some NHS participants reflected on experiencing increased unpredictability when lacking an established relationship with clients expressing suicidality, particularly during duty calls and cover for colleagues. Supporting unfamiliar clients involves uncertainty as to whether it is a pattern of communication or acute risk:

> *"a lot of our clients will say they're suicidal and that's just something they say, but if their worker's off [...] they're not able to weigh up the risk"* (Paul, NHS)

Even where clear patterns of communicating distress through suicidal language exist, Lisa described still holding fear that such patterns can change suddenly. For example, Lisa uses the "boy who cried wolf" metaphor:

> *"if they're phoning consistently and saying it and nothing's happening [...] you're just always very cautious of "what if that one time [...] they do follow through" [...] like the boy that cried wolf a wee bit"* (Lisa, NHS)

Lisa's 'what if' question reflects an ongoing process of sense-making, in which uncertainty is actively negotiated through anticipation of potential outcomes and an underlying fear of becoming desensitised to risk.

3.1.2 Balancing responsibility with a lack of control

Participants described holding responsibility for suicide risk as central to their role, while also maintaining boundaries in terms of limits to their control. Balancing this tension was described as essential to upholding care without taking on an excessive emotional burden:

> *"it's the person's responsibility [...] I'm not responsible <u>for</u> the person, I'm responsible <u>to</u> the person"* (Pamela, third sector)

Pamela reflects an ongoing internal dialogue about this nuance; committing to holding caring responsibility while recognising she does not hold responsibility over anyone else's life. Nevertheless, participants described the emotional difficulty of letting go of

control when the client leaves, forcing them to tolerate the uncertainty of what will happen next. Participants' language reflects this as they seem to have more questions than answers at that point, asking themselves: *"are they going to be okay?"* (Anna, third sector) and *"did I do the right thing sending them home?"* (Lisa, NHS).

Less experienced participants seemed to struggle more with the uncertainty and limits of their control, relying on supervision and management for support, suggesting that tolerance of risk may develop over time as part of a broader process of professional identity formation:

> *"my manager says to me 'you need to let it slide [...] you can lead the horse to the water, but you can't make them drink it'"* (Gary, third sector)

Gary reflects here on advice from his manager suggesting that he was becoming attached to the outcome of the support he was providing, recognising the emotional impact this may have over time. With experience, participants shift away from the 'rescuer' role by reframing it as minimising risk rather than having control over outcomes, while still experiencing grief in the impossibility of total prevention:

> *"try to accept that it's going to happen and you're not superman or superwoman [...] you're not going to be able to prevent it [...] you wish you could have"* (Pamela, third sector)

A notable difference between NHS (and Anna, in a managerial third-sector role) and third sector participants appeared to be the responsibility to manage suicide risk through formal procedure. Most third sector participants understood managing suicide risk in relational terms over procedural process. However, NHS participants (and Anna) described their experience of risk management as being embedded in procedural documentation of processes using consistent formal language: "safety plans", "suicide ideation", "emergency detention". This may act as a containment through formalised processes:

> *"we carry out what's called CRAFT risk assessments [...] we kinda rate them, whether it's red [...] high risk, amber, moderate, or green [...] low risk [...] that's kinda how we risk assess patients"* (Lisa, NHS)

Similarly, Paul (NHS) discussed the impact of a client being in 'red', meaning more extensive support is needed. While this can increase practical and emotional demands on practitioners, it may lead to a feeling of control through more frequent client contact. However, documenting risk processes can be experienced as defensive due to potential external scrutiny, having to prepare in case "*we then get a phone call from police being like, "could you tell me what you did for this person?"* (Anna, third sector), further increasing anticipatory stress.

3.1.3 The emotional cost of managing suicide risk

Some participants described emotional self-management as key to navigating suicide risk and maintaining an appropriate balance of responsibility in high-risk situations. Many reflected on going into "auto-pilot", enabling them to compartmentalise their emotions and make clear and effective decisions under pressure. While this can be an adaptive response, this seemed to involve a delayed impact of feeling disconnected and taking time to recover. Conversely, Susan described connecting with emotion in the moment, attempting to manage this through her professional identity. At the same time, she described an internal plea demonstrating her vulnerability during the process:

> *"I'm quite a soft person [...] I try to put on a hard persona… and meanwhile inside sometimes I'm saying "oh my God, please don't cry, please don't cry"* (Susan, NHS)

Gary, Tracy, and Anna related to clients experiencing suicidality due to their own personal experiences. Tracy described the ambivalence and complexity of experiencing alcohol problems and suicide risk when she said *"I didn't want to live, I didn't want to die… so I relate to <u>that</u>…"* (Tracy). Relating through lived experience can be a strength due to heightened empathy, but can also lead to distressing emotional experiences. Gary described a visceral reaction to taking a client who had overdosed to hospital, feeling *"as if a truck ran right into"* him, demonstrating embodied shock during the experience. Similarly, Anna described empathy as double-edged; blurring the line between her own and her clients' emotional experiences:

> *"empathy is always two sides of that coin (smiles)… vicarious trauma… the other person's feelings… can really affect you and dictate your emotions"* (Anna, third sector)

Participants described coping with the emotional cost of their role through having the ability to *"switch off",* supported by coping strategies including hobbies, social connection, and generally following the same advice they provide clients. However, this can be difficult to maintain in the presence of uncertainty. Lisa described the importance of not taking work home and simultaneously the challenges of anticipatory anxiety about returning, with physical presence at work offering a greater sense of control:

> *"you can't switch off... thinking about that person… are they with someone?... I can't wait to get back into the office… to make sure that they're alright"* (Lisa, NHS)

Lisa highlights here the tension between striving for emotional distance and feeling compelled to remain mentally connected in order to manage risk.

> *"I don't really take my work home with me because you go off your head but... I'm human as well..."* (Tracy)

Tracy reflects an effort to maintain emotional boundaries to prevent overwhelm, with here use of "you go off your head" demonstrating the intensity of the work. However, recognising the human element suggests a tension between professional detachment and inevitable emotional impact, highlighting the limits of fully compartmentalising experiences of managing risk.

3.2. Experiencing suicide risk as a relational process

This theme captured how participants experience suicide risk management in relation to their clients. By maintaining attunement and direct communication, they create an opportunity for clients to trust them and disclose their suicidal thoughts. Within both NHS and third sector roles, participants described that whilst suicide risk is

unpredictable, they try to make sense of their clients' lived experiences, which in turn alleviates distress and hopelessness for those they support.

3.2.1 'Being alongside' as the heart of intervention

Participants consistently described empathising as central in managing suicide risk. This was demonstrated by collaborative language use (e.g. "we" and "let's"), indicating the task becomes not only assessing risk but also reducing isolation:

> *"what can we do to help tip the balance? Just feeling heard… and feel listened to… that's massive* (Pamela, third sector)

Pamela reflected that risk is conceptualised as a balance and something that can shift through connection. The emphasis on being "heard" implies that suicidality is intertwined with invisibility and disconnection, with intervention serving as relational validation.

Gary demonstrated this shared process by saying: *"we've been here, we've climbed the mountains so many times"* (Gary, third sector). His mountain metaphor captures the extent of the problems faced by clients with alcohol problems, acknowledges the challenges, and demonstrates solidarity. For third-sector participants like Gary, who have lived experience, 'being alongside' seemed to be integral. Shared recognition can be protective while also having an emotional impact due to connecting with their past self.

Participants described the importance of the therapeutic relationship in order to detect subtle changes indicating increased risk:

> *"usually with the rapport and relationship that you've built up with your own clients, you know when something's off"* (Paul, NHS)

Here, Paul highlights that knowing someone well can counter the unpredictability of suicide risk, contrasting with earlier accounts of uncertainty when assessing risk in unfamiliar clients.

In crisis, participants maintain presence with clients, not only to keep them safe and manage uncertainty, but also to provide the message that they are not alone:

> *"I worked really closely with him [...] basically linking in with him every day [...] to make sure that he knows [...] there's somebody that is looking out for him and that <u>does</u> want to support him"* (Lisa, NHS)

However, Lisa's reflection suggests this sustained engagement requires practitioners to continually balance emotional attunement and empathy, with their own wellbeing.

3.2.2 Creating safety through direct and open communication

Participants described being open and direct in communicating about suicide risk as key to creating safety and reducing risk. Participants discussed the importance of naming suicide and keeping it at the forefront of conversations. As Susan (NHS) reflected, *"we're quite prompt and direct [...] any plans or any thoughts of self-harm or suicidal ideation"*. Participants recognised that there is danger in keeping suicide hidden, which can reinforce stigma. They use direct suicide language as part of intervention:

> *"you just <u>speak</u> to them about it [...] "right, so you're going to kill yourself?" [...] "have you made a plan?", and just ask them outright, you know, how instead everybody kinda dances about it"* (Tracy, third sector)

Tracy's contrast with 'dancing about it' suggests frustration with avoidance. She interprets directness not as harsh but as being authentic and challenging stigma.

Participants described the importance of openness and trust in the therapeutic relationship to build safety by humanising interactions, balancing humour with seriousness:

> *"not the whole session's about deep and meaningful, there's [...] light-hearted bits in there [...] just reinforce 'lift the phone, you can talk to me'"* (Pamela, third sector)

Pamela reflects on the importance of "light-hearted bits" to maintain relational equality and support emotional co-regulation during risk management, suggesting this provides reassurance to both client and practitioner.

3.2.3 Making sense of suicide risk and alcohol problems

Although recognising suicide risk is difficult to predict and uncertain, participants make sense of it as meaningful in the clients' individual context. Anna reflected that clients' history and triggers are unique, and part of the role managing risk is to help make sense of this and empathise with their difficulties:

> *"each person is an island [...] they've got their own stories, their own past, their own traumas [...] suicide ideation is not something that comes out of nowhere"* (Anna, third sector)

Each client's unique circumstances add to the overall complexity of participants' roles. At the same time, participants identified common underlying challenges including loneliness, relationship rupture, poverty, emotional dysregulation, and cumulative stress. Paul (NHS) reflected on the protective nature of taking time to make sense of suicide risk, reflecting "*sometimes there's just a <u>problem</u> that needs solved"*. Here he recognised that 'being alongside' clients by supporting management of practical or relational issues can reduce risk.

Participants described stigma as a known factor contributing to hopelessness in clients. They expressed frustration that clients with alcohol problems are often treated like "second-class citizens" (Anna, third sector) and "looked down on" (Lisa, NHS), which appeared to increase participants' sense of advocacy and empathy. Tracy's reflection on her own past self-stigma deepened this understanding:

> "I was very judgemental, even when I drank [...] 'I'm not nothing like that, no, I'm no an alky (laughs) [...] because that stigma [...] that whole shame of wanting to get help" (Tracy, third sector)

Her laughter suggested a sense of distance and discomfort. Making sense of suicide risk in the context of alcohol problems appears to involve reframing shame into

understanding. Through the relational process, participants therefore attempt to counteract both internalised and external stigma.

3.3. Working within and against a fragmented system

This theme captures how participants experience managing suicide risk within the systems they work in. Participants reflected on the challenges and barriers they encounter in the wider system, which they believe should work collaboratively but instead experience as fragmented. This has an emotional impact, including a sense of helplessness, which can lead to more uncertainty and compensating for system gaps. They rely on the team to contain their decision-making and anxiety and recognise that training and experience support their development of confidence and tolerance of uncertainty.

3.3.1 Navigating and filling service gaps

Participants described the importance of joined-up care to effectively manage suicide risk in people with alcohol problems. They recognised that different parts of the system should work together to hold clients safely. However, this does not tend to be evident in practice. Instead, they experience services as fragmented, with lack of resources and poor communication between services underpinning the problem:

> *"Pfff, it comes down to money, doesn't it? [...] the services are there, the waiting lists are <u>too long</u>, I don't think they're really linked up and talk to each other the way they're meant to"* (Pamela, third sector)

Pamela's scoff signals frustration. For her, the reason for fragmentation seems obvious, in that support is there but not prioritised.

Because of these issues, participants get the sense that some services are reluctant to take responsibility for their part in managing suicide risk, resulting in clients being passed between services before they get the right support:

> *"it was almost like <u>hot potato</u> [...] 'oh well he's not ours, he's not ours, he's not ours' and I thought that was scandalous to be honest"* (Gary, third sector)

Gary's reflection constitutes a strong emotional response. He experiences avoidance of responsibility as misaligning with his values of care. Participants described clients *"falling through the cracks"* (Pamela, third sector), often between mental health, crisis, and addiction services, with participants having to *"jump through hoops"* (Paul, NHS) to get them support.

Susan (NHS) described using professional hierarchy to advocate for clients' access to services, demonstrating this can depend on authority and relationships:

> *"if we have really grave concerns [...] our consultants here can see them [...] and possibly kind of contact the consultants em down at the community mental health team"* (Susan, NHS)

However, third sector participants who do not have the same connections within the system demonstrated distrust and hopelessness about crisis pathways. This is demonstrated by Pamela's (third sector) resignation that *"you can go and sit for hours in A&E and get an assessment by the psychiatrist there, who's basically going to tell you you're alright and send you home",* indicating frustration at the minimising of clients' needs.

As a result of system gaps, participants sometimes increase contact and flexibility with clients, particularly those on long waiting lists for mental health support. Tracy (third sector) reflected, *"you're no letting them walk out the door and say 'right, you'll hear from them in five, six months'"*, highlighting a tension between organisational constraints and a relational commitment to not abandon clients during periods of heightened vulnerability. However, Susan recognised the risk of overcompensating:

> *"that safety net of coming to see me [...] but [...] if they need community mental health team input, you're kinda doing them a disservice by keeping them"* (Susan, NHS)

Therefore, participants can experience a dilemma of filling systemic gaps while fearing that doing so may inadvertently delay appropriate care.

3.3.2 The team as a container for anxiety, risk, and responsibility

In contrast with systemic fragmentation and the unpredictability of suicide risk management, participants described the team as cohesive and containing. Suicide risk management was not experienced as an individual process. Instead, team solidarity enabled shared responsibility and collective decision-making, helping to contain anxiety:

> *"you've always got someone you can phone to say... 'can you come out here' [...] nine times out of 10 you've always got a second person so you're not alone in it"* (Paul, NHS)

Paul's reflection on 'not being alone' highlights how relational processes create a sense of safety that extends beyond the client-practitioner relationship to include the wider team.

Less experienced participants relied on senior colleagues to provide safety in decision-making around risk.

> *"I don't like to be the one that makes the decision if I think they're serious or not"* (Tracy)

Tracy reflects here on perceived fears of 'getting it wrong', which can be contained by the team, thus helping to alleviate uncertainty through shared responsibility, and reassurance that *"no question's a daft question"* (Lisa, NHS). Conversely, more experienced participants described containment as something they actively provide to the team by ensuring they are on hand to support during a risk situation and de-brief afterwards. Therefore, team containment is a continual process right from *"as soon as somebody says 'I'm going to jump into the Clyde', it's opening the door and shouting, 'get me a manager'"* (Anna, third sector), through to *"making sure everybody's okay"* (Paul, NHS) afterwards.

Participants described the sense of equality within teams regardless of their job role, recognising they are *"all in the same boat"* (Susan, NHS). The importance of balancing

lightness amongst the heaviness in the client-practitioner relationship was also described as extending to the team, with humour playing a key role:

> *"the old gallow's humour and all that, it's definitely not appropriate, but it is meant in the right way (laughs)"* (Pamela, third sector)

3.3.3 Learning to tolerate risk through training and experience

Participants described the importance of accessing training and building experience over time to help navigate and compensate for gaps in the system, as well as develop confidence and capacity to tolerate suicide risk. They described training as providing structure and reassurance within the relational process, helping to contain risk. Participants described roleplay in training as a central aspect to this, recognising it is both uncomfortable and valuable to receive feedback from others. This increases confidence when managing real-life crises:

> *"they actually film you doing that and you need to watch the video back so that obviously causes a lot of people a bit of anxiety, but [...] it's practicing what you would say and what you would actually do"* (Paul, NHS)

However, some participants described the challenges of accessing training, particularly that it does not come up often or can get cancelled at the last minute. This indicates there may be systemic barriers to developing competence in suicide risk management through training.

Less experienced participants who have not yet accessed formal training described relying on modelling and reassurance from more experienced colleagues:

> *"mental health nurses that have been doing this for <u>years</u> [...] it's a good feeling for them to say, d'you know, you've done a good job"* (Lisa, NHS)

Lisa reflected on the impact that praise from more experienced colleagues can have on building confidence and reducing self-doubt in the risk management process.

More experienced participants described a shift over time in how they approached managing suicide risk. Earlier in their careers, they recalled worrying about saying the

wrong thing or causing additional harm. With experience, their focus moved toward the relational process in the moment as a way of alleviating risk. They also described how familiarity with protocols and systems contributed to greater confidence. Over time, understanding how to navigate fragmented systems and recognise early warning signs enabled them to act more decisively and access appropriate support:

> "years ago [...] that feeling of like 'I don't want to say anything that's going to make anything worse' [...] but now it's 'keep calm, don't judge [...] allow them to talk" (Pamela, third sector)

> *"probably just knowing when to spot something's a bit more off [...] knowing what the protocols and the process is... right away [...] being aware of the pitfalls [...] but that's just been over the years"* (Paul, NHS)

Pamela and Paul's reflections suggest that learning to tolerate suicide risk involves accepting uncertainty while developing confidence in their professional identity.

4. Discussion

Alcohol treatment services play a key role in suicide prevention for individuals experiencing alcohol problems. This study advances understanding by providing an idiographic, phenomenological account of how suicide risk is experienced and interpreted by staff working in both NHS and third-sector contexts. Using IPA, the research moves beyond identifying risk factors or service gaps to demonstrate the psychological, relational, and systemic processes shaping practitioners' experiences and how they make sense of them.

Participants described suicide risk as both expected and unpredictable. While managing suicidality was seen as routine in alcohol treatment work (Ross et al., 2012), the current study findings highlight the paradox of this normalisation, with suicide risk being 'part and parcel' of their role, yet emotionally unpredictable. Practitioners described continuously negotiating the tension between professional responsibility and the limits of their control. This was experienced as a psychological balancing act rather than merely a procedural obligation.

A key challenge involved interpreting suicidal language. Participants frequently encountered expressions of hopelessness that functioned as communications of distress rather than imminent suicidal intent. Although suicide risk in the context of alcohol use is widely recognised as difficult to predict (Hufford, 2001), this study reveals the interpretative challenge of managing such ambiguity. Participants described the fear of both overreaction and desensitisation, captured in metaphors such as the 'boy who cried wolf'. Risk assessment therefore emerged as an ongoing hermeneutic process rather than a discrete clinical task. Moreover, participants framed intervention in terms of 'being alongside' clients rather than attempting to predict behaviour. Collaborative language reflected shared problem-solving and efforts to reduce isolation. This supports evidence that collaboratively addressing suicide risk within therapeutic relationships supports hope and engagement and is associated with reduced suicidal ideation (Huggett et al., 2024). It also supports critiques of actuarial approaches to suicide risk management, particularly that reliance on them may be harmful, create false reassurance, and have poor predictive value

(Hawton et al., 2022). This study extends the literature by demonstrating how relational presence operates as emotional containment for both client and practitioner. Established therapeutic relationships enabled detection of subtle changes beyond what structured assessment tools could capture, even where formal documentation processes were used.

Participants' accounts at times reflected the additional complexity of working with clients presenting with polysubstance use alongside alcohol problems. This appeared to further intensify the uncertainty inherent in managing suicide risk as practitioners were required to interpret distress within the context of multiple interacting substances, fluctuating mental states, and increased impulsivity. Polysubstance use may therefore compound the interpretative demands on the participants described in this study, increasing both perceived risk and uncertainty (Poorolajal et al., 2016). Additionally, participants with lived experience demonstrated increased emotional vulnerability in their role, suggesting that managing suicide risk in this context may carry an increased personal impact. This highlights the need to understand suicide risk in alcohol treatment settings as embedded within broader patterns of substance use and lived experience, rather than alcohol use in isolation.

Additionally, participants consistently contextualised suicide risk within broader psychosocial adversity, including trauma, poverty, loneliness, and relational rupture. Stigma emerged as a significant contributor to hopelessness, consistent with evidence that self-stigma negatively impacts treatment engagement and alcohol-related outcomes (Crozier et al., 2023). This study provides phenomenological depth by illustrating how practitioners actively counter stigma through non-judgemental engagement and reframing alcohol use as coping rather than moral failure.

Holding risk and responsibility whilst maintaining empathy to clients' circumstances was found to have a significant emotional impact for participants. Participants consistently described going on 'auto-pilot' as an adaptive emotional response during suicide risk management. While this allowed staff to function effectively in the moment, participants often reported emotional disconnection or delayed emotional processing afterwards. Given that suicide risk management could occur as frequently

as weekly, this raises significant concerns regarding emotional exhaustion and burnout, particularly for less experienced staff or those with lived experience. This finding is consistent with research identifying clinical burnout in approximately one-third of drug and alcohol workers (Volker et al., 2010) and a recent report highlighting the emotional impact of the role being a key risk factor for burnout in alcohol and substance treatment staff (Scottish Drugs Forum, 2022). Notably, workload was not foregrounded in participants' accounts. Instead, the emotional cost appeared to be rooted in responsibility, uncertainty, and investment in clients' safety.

Systemic fragmentation was experienced as both a practical barrier and a source of moral strain. Participants described difficulties accessing mental health services for clients with alcohol problems, as demonstrated in the wider evidence base (Chandler et al., 2021; Goldstone & Bjantes, 2019). Poorly integrated systems have been shown to produce exclusionary and crisis-driven care (Bratt, 2025), and participants' accounts revealed the emotional impact of witnessing clients being passed between services. Professional stigma within emergency psychiatric settings was perceived as reinforcing gatekeeping practices for individuals with co-occurring needs (Bratt, 2025). In response, practitioners often increased contact and advocacy efforts to prevent clients from 'falling through the cracks', though this risked overextension.

Within this fragmented system, team support emerged as a crucial protective factor providing emotional containment, shared responsibility, and opportunities for humour, thus helping staff tolerate uncertainty and anxiety. Teams were particularly important for less experienced staff when formal suicide risk training was unavailable. More experienced staff recognised their responsibility to support colleagues' wellbeing, reflecting the principle that sustainable clinical work requires a supported workforce (Berg et al., 2020). This informal support may contribute towards achieving current policy standards which emphasise the importance of training, supervision, reflective practice, and staff wellbeing (Scottish Government, 2021). But the study findings suggest standards could be better met through formalising specific roles within services to support staff in providing more integrated care.

Increased experience and targeted suicide risk training were associated with greater confidence in managing suicide risk. Wider research suggests that years of experience alone does not necessarily increase clinician confidence, emphasising the value of targeted suicide risk training over broad suicide awareness training and educational experience (Fruhbauerova & Comtois, 2019). In addition to demonstrating the importance of targeted training, the present study further highlights a significant potential gap between national policy and practice, as participants experienced barriers to accessing training (Scottish Government, 2022).

4.1 Implications for Research, Clinical Practice, and Policy

This study contributes novel insights into the emotional, relational, and systemic complexities experienced by alcohol treatment staff managing suicide risk. The findings provide detailed and nuanced accounts of the experiences, challenges and meanings attached to the management of suicide risk by alcohol treatment services. Future research would benefit from exploring perspectives of staff in wider services not represented in the present study who also work with and manage suicide risk in the context of alcohol use, such as mental health, crisis, and acute psychiatric services. Additionally, the experiences of clients accessing alcohol treatment services, including their experiences of suicide risk support, would offer a beneficial perspective.

Clinically, the study findings emphasised that staff in alcohol treatment services are emotionally impacted by managing suicide risk in their role. This highlights the need for formal reflective spaces, supervision, and team-based containment as a priority when expected to sustain psychological tolerance of uncertainty within emotionally demanding and under-resourced systems (Scottish Drugs Forum, 2022). Moreover, in terms of risk management, this study highlights the need to shift away from focus on actuarial methods of risk assessment and collaboratively assess risk as a relational process within the therapeutic relationship, wherever possible (Hawton et al., 2022).

At a policy level, this study highlighted a need for greater integration between mental health and addiction services, clearer care pathways, and improved access to targeted suicide prevention training (Scottish Government, 2022). Addressing these systemic

issues may reduce the need for compensatory practices and support safer, more sustainable care.

The findings have implications for the role of lived experience within alcohol treatment services. Participants with lived experience described increased empathy but also emotional vulnerability. This both highlights the need for peer-informed approaches which can strengthen the relational process, but also indicates that appropriate supervision, training, and reflective practice is essential to support sustainable practice. Incorporating peer perspectives more formally within service design and research, including peer researchers, may further enhance understanding of suicide risk in the context of alcohol and polysubstance use.

4.2 Strengths and Limitations

A key strength of this study is its focus on an under-researched professional group, providing rich, in-depth accounts of suicide risk management across NHS and third-sector contexts. Using an IPA approach enabled an in-depth exploration of how practitioners interpret, emotionally manage, and make sense of suicide risk within relational and systemically constrained alcohol treatment contexts, rather than reducing the phenomenon to measurable risk variables or service deficits. However, the findings should be interpreted cautiously due to the focus on professionals working in a limited number of alcohol treatment services, and generalisability to other geographical and service settings may be limited. Further, all NHS participants recruited were in nursing roles, which limits perspectives of the many other roles in alcohol and drug services, like social care staff. Researcher reflexivity is also important to consider, as the researcher's position as a trainee clinical psychologist within the NHS may have impacted the degree to which participants, particularly working in third sector, were open to describe negative experiences with NHS services. These considerations were actively reflected upon throughout the research process.

5. Conclusion

Managing suicide risk within alcohol treatment services is a complex and emotionally demanding aspect of clinical work. It requires staff to tolerate risk frequently and be prepared to navigate systemic fragmentation, which has an emotional cost. Staff must balance professional responsibility with acceptance of uncertainty, relying heavily on relational processes to mitigate risk. Whilst experience, team support, and targeted training can improve staff confidence and resilience, systemic improvements in service integration and access to training are essential to support staff and reduce the emotional impact of managing suicide risk within alcohol treatment services.

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Appendix 1.1. PRISMA (2020) checklist

Section and Topic	Item #	Checklist item	Location where item is reported
TITLE			
Title	1	Identify the report as a systematic review.	p.10
ABSTRACT			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	p.11
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	p.12-13
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	p.13
METHODS			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	p.14-15
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	p.15
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	p.85-89 (Appendix 1.2)
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	p.15
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	p.15
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	p.15
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	p.15
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	p.16
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	n/a
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	p.19-22
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	n/a
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	p.15
	13d	Describe any methods used to synthesize results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	p.16
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	n/a
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesized results.	n/a
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	n/a
Certainty	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	n/a

Section and Topic	Item #	Checklist item	Location where item is reported
assessment			
RESULTS			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	p.17
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	p.17
Study characteristics	17	Cite each included study and present its characteristics.	p.19-22
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	p.91-92 (Appendix 1.4)
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	n/a
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	p.23
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	n/a
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	n/a
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesized results.	n/a
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	p.91-92 (Appendix 1.4)
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	n/a
DISCUSSION			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	p.32-33
	23b	Discuss any limitations of the evidence included in the review.	p.34-35
	23c	Discuss any limitations of the review processes used.	p.34-35
	23d	Discuss implications of the results for practice, policy, and future research.	p.34
OTHER INFORMATION			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	p.14
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	p.14
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	n/a
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	n/a
Competing interests	26	Declare any competing interests of review authors.	n/a
Availability of data, code and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	n/a

Appendix 1.2. Systematic Review electronic search strategy and results

Database	Search Terms	Results
Embase (via OVID)	1. "alcohol*".ab,kw,ti. 2. ((substance or drug or alcohol or tobacco or nicotine or "e cigarette*" or "electronic cigarette*" or amphetamine* or cannabis or cocaine or "designer drug*" or heroin or methamphetamine* or narcotic* or "street drug*" or polydrug or hashish or mari#uana or LSD or methadone or MDMA or morphine or ecstasy or opiod or opiate or opium or "recreational drug*" or ketamine or hallucinogen*) adj2 (use* or misuse or abuse or addict* or "use disorder" or dependen* or problem)).ab,kw,ti. 3. ((problem or binge) adj2 drink*).ab,kw,ti. 4. exp drug abuse/ 5. exp "substance use"/ 6. exp drug dependence/ 7. exp alcohol abuse/ 8. exp alcoholism/ 9. underage drinking/ 10. adolescent smoking/ 11. 1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7 OR 8 OR 9 12. (child* or youth* or adolescen* or teen or juvenile* or student* or school*).ab,kw,ti. 13. (young adj2 (people or person*)).ab,kw,ti. 14. child behavior/ 15. adolescent behavior/ 16. 12 OR 13 OR 15 17. ("self harm" or "deliberate self harm" or DSH or "self injur*" or "self directed violence" or "auto mutliation" or automutilation or "self cutting" or selfcutting or "self inflicted" or "self immolation" or "self mutilation" or "self laceration" or "self burning" or "self poisoning" or "self defeating behavio* self destructive behavior*" or "non suicidal self injury" or NSSI or "non suicidal self harm").ab,kw,ti. 18. automutilation/ 19. 17 OR 18 20. 11 AND 16 AND 19 21. limit 20 to (english language and yr="2010 - 2025")	**2106**
Medline (via OVID)	1. "alcohol*".ab,kw,ti. 2. ((substance or drug or alcohol or tobacco or nicotine or "e cigarette*" or "electronic cigarette*" or amphetamine* or cannabis or cocaine or "designer drug*" or heroin or	**1657**

methamphetamine* or narcotic* or "street drug*" or polydrug or hashish or mari#uana or LSD or methadone or MDMA or morphine or ecstasy or opiod or opiate or opium or "recreational drug*" or ketamine or hallucinogen*) adj2 (use* or misuse or abuse or addict* or "use disorder" or dependen* or problem)).ab,kw,ti.

3. ((problem or binge) adj2 drink*).ab,kw,ti.
4. exp Substance-Related Disorders/
5. alcohol-induced disorders/ or alcoholic intoxication/ or alcoholism/ or binge drinking/
6. alcohol drinking/ or alcohol drinking in college/ or underage drinking/
7. substance-related disorders/ or alcohol-induced disorders/ or alcoholic intoxication/ or alcoholism/ or binge drinking/ or heroin dependence/ or morphine dependence/ or opium dependence/
8. 1 OR 2 OR 3 OR 4 OR 5 OR 6 OR 7
9. (child* or youth* or adolescen* or teen or juvenile* or student* or school*).ab,kw,ti.
10. (young adj2 (people or person*)).ab,kw,ti.
11. adolescent/ or young adult/ or child/
12. adolescent behavior/ or child behavior/
13. 9 OR 10 OR 11 OR 12
14. ("self harm" or "deliberate self harm" or DSH or "self injur*" or "self directed violence" or "auto mutliation" or automutilation or "self cutting" or selfcutting or "self inflicted" or "self immolation" or "self mutilation" or "self laceration" or "self burning" or "self poisoning" or "self defeating behavio* self destructive behavior*" or "non suicidal self injury" or NSSI or "non suicidal self harm").ab,kw,ti.
15. self-injurious behavior/ or self mutilation/
16. 14 OR 15
17. 8 AND 3 AND 16
18. limit 17 to (english language and yr="2010 - 2025")

CINAHL	S1. TI alcohol* OR AB alcohol*	**600**
	S2. TI ((substance OR drug OR alcohol OR tobacco OR nicotine OR “e cigarette*” OR “electronic cigarette*” OR amphetamine* OR cannabis OR cocaine OR “designer drug*” OR heroin OR methamphetamine* OR narcotic* OR “street drug*” OR polydrug OR hashish OR mari#uana OR LSD OR methadone OR MDMA OR morphine OR ecstasy OR opiod OR opiate OR opium OR “recreational drug*” OR ketamine OR hallucinogen*) N2 (use* OR misuse OR abuse OR addict* OR “use disorder” OR dependen* OR problem)) OR AB (	

(substance OR drug OR alcohol OR tobacco OR nicotine OR “e cigarette*” OR “electronic cigarette*” OR amphetamine* OR cannabis OR cocaine OR “designer drug*” OR heroin OR methamphetamine* OR narcotic* OR “street drug*” OR polydrug OR hashish OR mari#uana OR LSD OR methadone OR MDMA OR morphine OR ecstasy OR opiod OR opiate OR opium OR “recreational drug*” OR ketamine OR hallucinogen*) N2 (use* OR misuse OR abuse OR addict* OR “use disorder” OR dependen* OR problem))

S3. TI ((problem OR binge) N2 drink*) OR AB ((problem OR binge) N2 drink*)
S4. (MH "Substance Use Disorders+")
S5. (MH "Substance Dependence")
S6. (MH "Recreational Drug Use")
S7. (MH "Alcohol Drinking+")
S8. (MH "Alcoholism")
S9. S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8
S10. TI (child* OR youth* Or adolescen* OR teen OR juvenile* OR student* OR school*) OR AB (child* OR youth* Or adolescen* OR teen OR juvenile* OR student* OR school*)
S11. TI (young N2 (people OR person*)) OR AB (young N2 (people OR person*))
S12. (MH "Adolescent Behavior")
S13. (MH "Child Behavior")
S14. (MH "Adolescent Health")
S15. (MH "Child Health")
S16. S10 OR S11 OR S12 OR S13 OR S14 OR S15
S17. TI ("self harm" OR "deliberate self harm" OR DSH OR "self injur*" OR "self directed violence" OR "auto mutliation" OR automutilation OR "self cutting" OR selfcutting OR "self inflicted" OR "self immolation" OR "self mutilation" OR "self laceration" OR "self burning" OR "self poisoning" OR "self defeating behavio*" "self destructive behavior*" OR "non suicidal self injury" OR NSSI Or "non suicidal self harm") OR AB ("self harm" OR "deliberate self harm" OR DSH OR "self injur*" OR "self directed violence" OR "auto mutliation" OR automutilation OR "self cutting" OR selfcutting OR "self inflicted" OR "self immolation" OR "self mutilation" OR "self laceration" OR "self burning" OR "self poisoning" OR "self defeating behavio*" "self destructive behavior*" OR "non suicidal self injury" OR NSSI Or "non suicidal self harm")
S18. (MH "Self-Injurious Behavior")
S19. (MH "Injuries, Self-Inflicted")
S20. S17 OR S18 OR S19
S21. S9 AND S16 AND S20

Limiters - Publication Date: 20100101-20250821

Narrow by Language: - English

PsycINFO	S1. TI alcohol* OR AB alcohol* OR KW alcohol* S2. TI ((substance OR drug OR alcohol OR tobacco OR nicotine OR “e cigarette*” OR “electronic cigarette*” OR amphetamine* OR cannabis OR cocaine OR “designer drug*” OR heroin OR methamphetamine* OR narcotic* OR “street drug*” OR polydrug OR hashish OR mari#uana OR LSD OR methadone OR MDMA OR morphine OR ecstasy OR opiod OR opiate OR opium OR “recreational drug*” OR ketamine OR hallucinogen*) N2 (use* OR misuse OR abuse OR addict* OR “use disorder” OR dependen* OR problem)) OR AB ((substance OR drug OR alcohol OR tobacco OR nicotine OR “e cigarette*” OR “electronic cigarette*” OR amphetamine* OR cannabis OR cocaine OR “designer drug*” OR heroin OR methamphetamine* OR narcotic* OR “street drug*” OR polydrug OR hashish OR mari#uana OR LSD OR methadone OR MDMA OR morphine OR ecstasy OR opiod OR opiate OR opium OR “recreational drug*” OR ketamine OR hallucinogen*) N2 (use* OR misuse OR abuse OR addict* OR “use disorder” OR dependen* OR problem)) OR KW ((substance OR drug OR alcohol OR tobacco OR nicotine OR “e cigarette*” OR “electronic cigarette*” OR amphetamine* OR cannabis OR cocaine OR “designer drug*” OR heroin OR methamphetamine* OR narcotic* OR “street drug*” OR polydrug OR hashish OR mari#uana OR LSD OR methadone OR MDMA OR morphine OR ecstasy OR opiod OR opiate OR opium OR “recreational drug*” OR ketamine OR hallucinogen*) N2 (use* OR misuse OR abuse OR addict* OR “use disorder” OR dependen* OR problem)) S3. TI ((problem OR binge) N2 drink*) OR AB ((problem OR binge) N2 drink*) OR KW ((problem OR binge) N2 drink*) S4. (((((((DE "Substance Use Disorder" OR DE "Alcohol Use Disorder" OR DE "Cannabis Use Disorder" OR DE "Drug Abuse" OR DE "Drug Dependency" OR DE "Inhalant Abuse" OR DE "Opioid Use Disorder" OR DE "Tobacco Use Disorder") OR (DE "Drug Addiction" OR DE "Drug Withdrawal")) OR (DE "Designer Drugs")) OR (DE "Narcotic Drugs" OR DE "Narcotic Agonists" OR DE "Narcotic Antagonists" ORDE "Opiates" OR DE "Opioid Analgesics")) OR (DE "Amphetamines" OR DE "Dextroamphetamine" OR DE "Methamphetamine" OR DE "Methylenedioxymethamphetamine")) OR (DE "Cannabis Use")) OR (DE "Psychedelic Drugs" OR DE "Bufotenine" OR DE "Ketamine" OR DE "Lysergic Acid Diethylamide" OR DE "Mescaline" OR DE "Methylenedioxymethamphetamine" OR	**791**

DE "Peyote" OR DE "Phencyclidine" OR DE "Psilocybin")) OR (DE "Tobacco Smoking")) OR (DE "Electronic Cigarettes")

S5. S1 OR S2 OR S3 OR S4

S6. TI (child* OR youth* Or adolescen* OR teen OR juvenile* OR student* OR school*) OR AB (child* OR youth* Or adolescen* OR teen OR juvenile* OR student* OR school*) OR KW (child* OR youth* Or adolescen* OR teen OR juvenile* OR student* OR school*)

S7. TI (young N2 (people OR person*)) OR AB (young N2 (people OR person*)) OR KW (young N2 (people OR person*))

S8. ((((DE "Child Behavior") OR (DE "Child Health")) AND (DE "Adolescent Behavior" OR DE "Adolescent Health")) OR (DE "Early Adolescence"))

S9. S6 OR S7 OR S8

S10. DE "Self-Destructive Behavior" OR DE "Nonsuicidal Self-Injury" OR DE "Head Banging" OR DE "Self-Inflicted Wounds" OR (DE "Self-Defeating Behavior")

S11. TI ("self harm" OR "deliberate self harm" OR DSH OR "self injur*" OR "self directed violence" OR "auto mutliation" OR automutilation OR "self cutting" OR selfcutting OR "self inflicted" OR "self immolation" OR "self mutilation" OR "self laceration" OR "self burning" OR "self poisoning" OR "self defeating behavio*" "self destructive behavior*" OR "non suicidal self injury" OR NSSI Or "non suicidal self harm") OR AB ("self harm" OR "deliberate self harm" OR DSH OR "self injur*" OR "self directed violence" OR "auto mutliation" OR automutilation OR "self cutting" OR selfcutting OR "self inflicted" OR "self immolation" OR "self mutilation" OR "self laceration" OR "self burning" OR "self poisoning" OR "self defeating behavio*" "self destructive behavior*" OR "non suicidal self injury" OR NSSI Or "non suicidal self harm") OR KW ("self harm" OR "deliberate self harm" OR DSH OR "self injur*" OR "self directed violence" OR "auto mutliation" OR automutilation OR "self cutting" OR selfcutting OR "self inflicted" OR "self immolation" OR "self mutilation" OR "self laceration" OR "self burning" OR "self defeating behavio*" "self destructive behavior*" OR "non suicidal self injury" OR NSSI OR "non suicidal self harm"

S12. S10 or S11

S13. S5 AND S9 AND S12

Limiters - Publication Date: 20100101-20250821

Narrow by Language: - English

Appendix 1.3 Data Extraction table

Open Science Framework: Data Extraction Table

Appendix 1.4. Quality appraisal tool and study appraisal results

	Criteria/Rate	0	1	2
1.	**Design**	Cross-sectional	Case-control	Prospective, Randomised Controlled Trials.
2.	**Was the number of participants calculated in advance for statistical power?**	No	Yes	-
3.	**Statistical Power**	No mention of a power calculation	Power calculation reported, but sufficient power not achieved	Power achieved
4.	**Self-Harm Assessment**	Non-validated scale; Self-report; Single question.	Hospital admission for self-harm; items from validated diagnostic / rating scale	Clinical interview; full validated scale
5.	**Self-Harm Behaviour**	Mixed group self-harming participants	Homogenous groups of individuals	-
6.	**Substance Use Assessment**	Non-validated scale; Self-report; Single question	Validated scale/instrument	-
7.	**Appropriate Choice of Comparison Group**	No group free from self-harm. *E.g. includes self-harm ideators, those who have previously self-harmed or no comparison group.*	One case group with no personal history of self-harm, suicidal thoughts or behaviours etc.	-
8.	**Confounding Variables** (*Will require some judgement on behalf of the rater as studies will have done this to differing degrees)*	No attempt to control for confounding factors in recruitment or analyses.	Accounts for basic confounding variables either during recruitment or analysis. E.g. age, gender.	Accounts for basic and additional confounding variables either during recruitment or analysis. [e.g. medication use/ physical health, comorbid psychiatric conditions (depression, etc.)].
9.	**Can the results be generalized outside the study context?**	No	Yes	-

Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Total
Andrews et al. (2012)	0	0	0	1	0	1	0	1	1	**5 (medium)**
Chan et al. (2013)	0	0	0	0	0	0	1	1	1	**3 (low)**
Mars et al. (2014)	2	0	0	1	1	1	1	2	1	**9 (good)**
Rossow & Norström (2014)	2	0	0	0	0	0	2	2	1	**7 (medium)**
Stewart et al. (2014)	0	0	0	0	0	1	1	2	1	**4 (low)**
Brausch & Boone (2015)	0	0	0	0	0	1	1	0	1	**3 (low)**
Nakar et al. (2016)	2	0	0	1	1	1	2	2	1	**10 (good)**
Jarvi & Swenson (2016)	0	0	0	2	0	1	1	1	1	**5 (medium)**
Doksat et al. (2017)	0	0	0	2	0	1	1	2	0	**6 (medium)**
Korhonen et al. (2018)	2	0	0	1	0	1	1	2	1	**8 (good)**
Li et al. (2020)	0	0	0	0	0	0	1	1	1	**3 (low)**
Sellers et al. (2021)	2	0	0	0	0	1	0	1	0	**4 (low)**
Xie et al. (2021)	0	0	0	0	0	1	1	1	1	**4 (low)**
Guo et al. (2023)	0	0	0	0	0	0	1	1	1	**3 (low)**
Oladunjoye et al. (2023)	0	0	0	0	0	1	1	1	1	**4 (low)**
Steinhoff et al. (2024)	2	0	0	1	1	1	1	2	1	**9 (good)**
Arqueros et al. (2025)	0	0	0	1	0	1	1	1	1	**5 (medium)**
Celik & Cakar (2025)	0	0	0	0	0	0	1	2	1	**4 (low)**

Scoring: The tool uses a 9-item index with possible scores ranging from 0 to 13. A lower score indicates a higher probability of methodological bias, with classifications set as: 0–2 very low quality; 3–4 low quality, 5–7 reasonable/medium quality; 8–10 good quality; and 11–13 excellent/very good quality.

Adapted from: O'Connor, D. B., Ferguson, E., Green, J. A., O'Carroll, R. E., & O'Connor, R. C. (2016). Cortisol levels and suicidal behavior: A meta-analysis. Psychoneuroendocrinology, 63, 370–379. https://doi.org/10.1016/j.psyneuen.2015.10.011

Appendix 2.1 Participant Information Sheet

Open Science Framework: Participant Information Sheet

Appendix 2.2 MVLS Ethical Approval

Appendix 2.3 NHS GG&C Ethical Approval

Appendix 2.4 Interview Schedule

Open Science Framework: Interview Schedule

Appendix 2.5 Consent Form

Open Science Framework: Consent Form

Appendix 2.6 Wellbeing Support Sheet

Open Science Framework: Wellbeing Support Sheet

Appendix 2.7 CORE-Q Checklist

No. Item	Guide questions/description	Reported on Page No.
Domain 1: Research team and reflexivity		
Personal Characteristics		
1. Interviewer/facilitator	Which author/s conducted the interview or focus group?	Principal Researcher, p.54
2. Credentials	What were the researcher's credentials? E.g. PhD, MD	p.56
3. Occupation	What was their occupation at the time of the study?	p.56
4. Gender	Was the researcher male or female?	Female, p.56
5. Experience and training	What experience or training did the researcher have?	p.56
Relationship with participants		
6. Relationship established	Was a relationship established prior to study commencement?	No, p.56
7. Participant knowledge of the interviewer	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	Participant information sheet outlining researcher DClinPsy trainee as reason for study, p.54, Appendix 2.1 p.93
8. Interviewer characteristics	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	p.56, Appendix 2.13 p.108
Domain 2: study design		
Theoretical framework		
9. Methodological orientation and Theory	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	IPA, p.53

Participant selection		
10. Sampling	How were participants selected? e.g. purposive, convenience, consecutive, snowball	p.53-54
11. Method of approach	How were participants approached? e.g. face-to-face, telephone, mail, email	p.54
12. Sample size	How many participants were in the study?	7, p.53
13. Non-participation	How many people refused to participate or dropped out? Reasons?	None
Setting		
14. Setting of data collection	Where was the data collected? e.g. home, clinic, workplace	University of Glasgow, workplace, online, p.54
15. Presence of non-participants	Was anyone else present besides the participants and researchers?	No, p.54
16. Description of sample	What are the important characteristics of the sample? e.g. demographic data, date	p.54
Data collection		
17. Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	Yes - interview schedule, p.54, Appendix 2.4 p.97
18. Repeat interviews	Were repeat interviews carried out? If yes, how many?	No
19. Audio/visual recording	Did the research use audio or visual recording to collect the data?	Yes, p.54-55
20. Field notes	Were field notes made during and/or after the interview or focus group?	Yes, reflexive journal, p.56, Appendix 2.10 p.105
21. Duration	What was the duration of the interviews or focus group?	Mean 47 mins, p.54
22. Data saturation	Was data saturation discussed?	Yes, p.53

23. Transcripts returned	Were transcripts returned to participants for comment and/or correction?	No
Domain 3: analysis and findings		
Data analysis		
24. Number of data coders	How many data coders coded the data?	One, p.55
25. Description of the coding tree	Did authors provide a description of the coding tree?	N/a
26. Derivation of themes	Were themes identified in advance or derived from the data?	Derived from data, p.55-56
27. Software	What software, if applicable, was used to manage the data?	None
28. Participant checking	Did participants provide feedback on the findings?	No
Reporting		
29. Quotations presented	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	Yes, p.58-69
30. Data and findings consistent	Was there consistency between the data presented and the findings?	Yes, p.58-69
31. Clarity of major themes	Were major themes clearly presented in the findings?	Yes, p.57
32. Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	Yes, p.58-69

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. Int J Qual Health Care. 2007;19(6):349-357.

Appendix 2.8 Excerpt of initial noting and experiential statements

Appendix 2.9 Data analysis process (according to Smith et al., 2022)

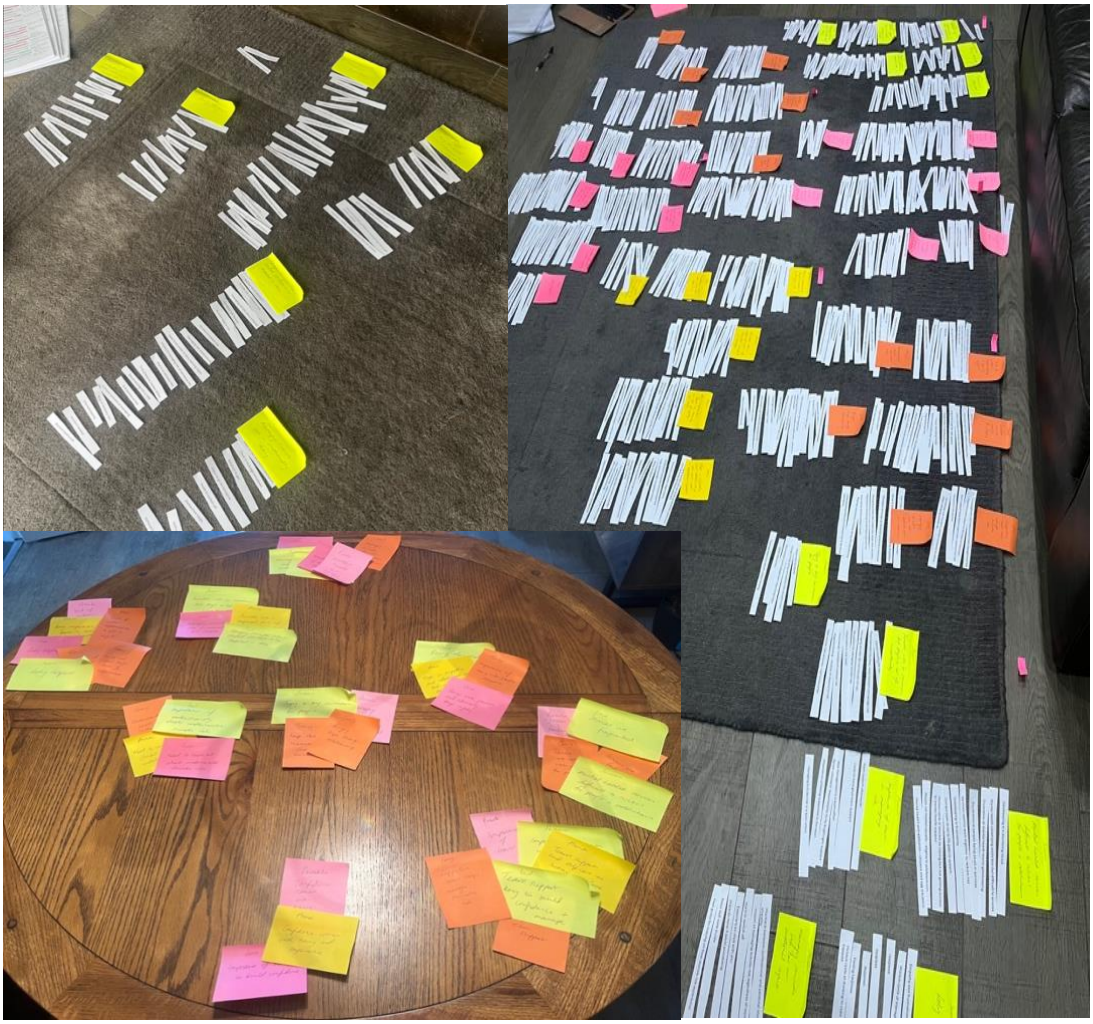
Step 1: Read and re-read: Immersed myself fully in the transcript by reading twice and re-listening to participants' audio recording of interviews.

Step 2: Initial noting: Made detailed descriptive, linguistic, and conceptual comments on each transcript.

Step 3: Developed experiential statements: Condensed notes into concise meaningful statements.

Step 4: Searched for connections: Clustered related experiential statements into personal experiential themes.

Step 5: Moved on to the next case: Repeated the first four steps, 'bracketing' for each participant.



Step 6: Looked for patterns across cases: identified convergences and divergences to create group experiential themes.

Step 7: Wrote up the analysis: Presented themes with interpretation and supporting quotes.

Appendix 2.10 Excerpt from reflexive journal

"I'm noticing that the more interviews I carry out, the more confident I'm getting at digging into the emotional experience. I think I was conscious at first about my role as a trainee psychologist, used to interviewing people in a therapeutic setting so maybe stuck more to processes. The interview I just had brought up a lot of reflection on the emotional process as they seemed to be recognising the duality of holding responsibility for others while, at the same time, absorbing the emotional impact of that responsibility. Going on autopilot seems to be a way of managing this. This seems to be a theme coming through with lots of participants that it's almost an inner battle of knowing that you have to be professional and responsible in the moment but that is never going to be easy and need to rely on supports to keep going with the role. Similar systemic gaps and issues also coming through, interestingly with third sector as well as NHS, that seem to impact the way they manage suicide risk."

Appendix 2.11 Data Analysis Plan

Open Science Framework: Data Analysis Plan

Appendix 2.12 MRP Proposal

Open Science Framework: MRP Proposal

Appendix 2.13 Data Availability Statement

Study data is not publicly available due to ethical and privacy considerations. It can be accessed upon reasonable request subject to appropriate institutional approvals.

Appendix 2.14 Reflexivity Statement

As a trainee clinical psychologist working in the NHS, I was aware of my dual role during the process of developing and carrying out the MRP. I am both someone who manages suicide risk in their role, as participants do, and also an external researcher. I incorporated my reflections made at the beginning of the process in my MRP proposal about my position of power and was mindful of any potential role confusion, particularly due to the sensitive topic area that could have led me to fall into the role of 'therapist'. I recognised that NHS staff and I share a professional culture shaped by structured risk management processes, which may have influenced both how they framed their responses and how I interpreted them. This may have also influenced their ease at providing information about their perceptions about risk processes. Conversely, I was aware that third sector staff understood that I work in statutory services, which could have resulted in them holding back their authentic views about how risk is managed in the NHS. I managed this during data collection by highlighting at the beginning of interviews that I am in a researcher role, that their data is anonymised so they are non-identifiable so they can speak freely without concern about repercussions.

Throughout data analysis process, I was aware of my own biases when interpreting the data. I was mindful of my own experience of alcohol problems within personal relationships and how I interpreted participants' accounts of their experiences. I maintained awareness about my biases by keeping a reflexive journal and using supervision. While I attempted to bracket these assumptions, I recognise that complete separation of my professional and personal perspectives is neither possible nor necessarily desirable. Instead, reflexivity involved ongoing negotiation between my interpretative lens and participants' meaning-making. Therefore, the interpretation process was created with an empathic grounding in participants' experiences and understanding about the system we all work in, while at the same time aiming to ensure that the participants' views and experiences were meaningfully represented.