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Beyond Bars: Examining Suicide Risk amongst people on probation.

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Thesis Abstract

Objective: The thesis broadly explores suicide risk in the probation population, with a predominant focus on risk factors, preventative intervention and risk assessment.
Methods: The thesis includes a systematic review regarding risk factors for suicide amongst individuals on probation (Chapter Two), empirical research paper discerning differences between individuals on probation who experience suicidal ideation, suicide attempt and no history of suicidal thoughts or behaviour (Chapter Three), a single case study of a male on probation who demonstrated a historical suicide attempt and experienced suicidal ideation at the time of intervention (Chapter Four), and critique of the Depression, Hopelessness and Suicide (DHS) Screening Form.
Results: Chapter Two presents 10 references that were systematically identified, of which highlights the scarcity of research regarding suicide risk factors for the probation population. Chapter Three attempts to expand on existing literature and presents sociodemographic, criminogenic and clinical differences between men on probation who have; attempted suicide, experienced solely suicidal ideation and have not experienced suicidal thoughts or behaviour. Findings also present a tool that is comprised of routinely assessed risk factors within the probation setting to identify vulnerabilities to suicidality and indicate individuals who may require a suicide assessment. Chapter Four proposes Cognitive Behavioural Therapy (CBT; Beck & Beck, 2020) and Dialectical Behavioural Therapy (DBT; Linehan, 2014) could be considered in reducing the presence of suicidal ideation amongst the probation population and findings add further validity to the tool developed from the primary research paper, of which identified vulnerabilities to suicidality. Chapter Five indicated psychometric properties of the DHS are satisfactory when utilised with forensic populations. Although, the DHS should be utilised with caution in light of outlined limitations that must be addressed in practice.
Conclusion: Clinical risk factors are critical when assessing and managing suicide risk in probation populations. However, additional risk factors that can mediate suicide risk outcomes should also be considered. However, probation do not have surplus

resources to manage these problems. Therefore, responsibility must be shared with probation, prison and community services to provide integrated, quality resettlement support and care for those on probation. The thesis supports the use of risk factors in identifying vulnerabilities for suicidality, and indicates that when risk factors are more prevalent ideation may transcend into attempt. However, as Chapter Three is retrospective in nature, the validity of the tool should be treated with caution and used in conjunction with clinical judgement when assessing suicide risk. Finally, each case should be formulated individually with support from psychology professionals to identify suitable intervention, and observational and collateral information should be utilised in addition to screening tools for risk assessment.

Chapter One: Introduction

Introduction

Suicide is a pertinent public health concern that has afforded increased consideration in international research community across the previous decade (Mackenzie, 2015). Consequently, worldwide initiatives have been established to reduce suicide deaths (World Health Organisation, 2014). The Department of Health holds responsibility for developing suicide prevention strategies in England, and in part of its recent strategy it outlines a goal to reduce suicide in high-risk groups (Department of Health & Social Care, 2023). People who have offended comprise one group of individuals at elevated risk of suicidal death (Fazel et al, 2005; Mackenzie, 2015). However, although research indicating probation suicides may exceed individuals in prison (Sattar, 2003), suicides in prison have afforded considerable attention from researchers, whilst individuals on probation have been somewhat neglected (Mackenzie, 2015). Suicide research in probation is pertinent in light of the Government's ambition to reduce the prison population through utilising community sentences (Ministry of Justice, 2010). In addition, the Offender Rehabilitation Act (2014) has increased the number of individuals supervised by probation (Mackenzie, 2015; Ministry of Justice, 2015). Given that 238,264 individuals are supervised on probation (Ministry of Justice, 2023a), it is imperative probation are supported with research and training to monitor suicide risk to follow the responsibility to prevent and reduce suicides (Bridges et al, 2008).

The chapter shall consider nuances regarding defining suicide, its prevalence with particular reference to forensic populations, and provide an overview of up-to-date understanding of suicide risk factors and theories regarding mechanisms that promote transition from suicidal ideation to suicide attempt; otherwise known as the ideation-action framework (Turecki et al, 2019). The chapter will conclude with the rationale and overview of the thesis as a whole.

Defining suicide

There is lack of a consistent definition regarding suicide and 'suicidal behaviours' (Mackenzie et al, 2015). Such lack of coherence can be partially understood as suicide is a complex phenomenon; hence its understanding and incorporation has been sometimes convoluted by numerous definitions utilised across suicide literature (Turecki et al, 2019). Caution should therefore be exercised in comparison of international research as suicide is recorded differently across jurisdictions (Mackenzie, 2015). In England and Wales, the decision regarding whether an individual has died by suicide is determined by a coroner, and will only be confirmed as such if deemed beyond reasonable doubt the individual intentionally ended their own life (World Health Organisation, 1974, cited in Mackenzie, 2015). Within populations of individuals who have offended, the National Offender Management Service (NOMS) utilises the term 'self-inflicted death' to encompass any individual who ends their life, whereby suicide usually features as a sub-category (Ministry of Justice, 2023b). Between 2011-2021 there were 2,693 self-inflicted deaths amongst offenders in the community (Office for National Statistics, 2023). Although 38% of these deaths were suicide, it is important to hold in mind that the majority of these deaths (49%) were defined as drug related deaths, excluding suicide (Office for National Statistics, 2023). Nevertheless, these statistics demonstrate the importance of the thesis topic.

Suicidal ideation has been conceptualised as thoughts related to suicide, of which may be passive; such as wishes to die, or active; a plan of how to end one's life (Turecki et al, 2019). However, risk of acting out suicidal ideation may intensify with the content, frequency and intent associated with thoughts. However, a suicide attempt denotes self-injurious behaviour that encompasses intention to die (Turecki et al, 2019). This differs from self-injurious behaviour that can exist without intent to end one's life (Halicka & Kiejna, 2015). This illustrates how suicidal thoughts or behaviours can be difficult to ascertain and define due uncertainty regarding the individual's intention when exhibiting suicidal thoughts or behaviour (De Leo et al, 2004; Mackenzie, 2015). However, some argue intent should not be a defining feature of suicidal ideation or behaviour (Hawton, 2002), as irrespective of intention,

research outlines that previous self-inflicted injury can increase vulnerability to eventual completed suicide (Hawton et al, 2014; Joiner, 2006; Mackenzie, 2015). Although detailed nomenclatures have been propositioned for suicide terminology (Turecki et al, 2019), many terms describe similar phenomena and are not widely adopted. Therefore, the thesis shall utilise terms most consistent with current suicide research (Box 1), with some adaptation due to the population of interest being individuals on probation.

Box 1: *Definitions used in research* (Turecki et al, 2019, p. 44)

Suicide: Death caused by injuring oneself with the intent to die.
.
Self-inflicted death: Any death of a person who has apparently taken their own life, irrespective of intent. This can include suicides, and cases where individuals unintentionally caused their own death, such as accidental drug overdoses

Suicidal behaviours: behaviours that could result in ending one's life, whether fatal or not

Suicidal ideation: any thoughts related to ending one's own life. Thoughts may be active, with a plan on how to complete suicide, or passive; inclusive of thoughts regarding desire to die

Self-harm: self-injurious behaviours without or with intention to die.

Non-suicidal self-injury: self-injurious behaviours without any intention to die.

Population of interest: Individuals supervised by probation. This incorporates anyone

It is of note the definition of self-inflicted death incorporates suicide when considering the population of interest. As the thesis studies individuals supervised by probation as the population of interest, data utilised throughout the thesis will therefore regularly incorporate self-inflicted deaths. Where possible, attempts have been made to disentangle data to discern differences in suicide and self-inflicted deaths. However, there are benefits of incorporating self-inflicted deaths. Firstly, it provides a broader understanding of risk, whereby including these statistics

incorporates a spectrum of risk-taking behaviours that can be targeted within probation supervision. Furthermore, many individuals on probation struggle with numerous risk factors, which can pose difficulties deducing intent behind their actions (Sirdfield et al, 2020). Excluding these ambiguous cases from suicide research risks underreporting the true scope of the problem. Therefore, inclusion of these cases provides a comprehensive picture of the risks individuals face and the potential for preventable deaths. However, where 'self-inflicted' death is cited throughout the thesis, caution should be exercised to hold in mind that this does not necessarily deem figures are reflective of intentionally taking one's life. Furthermore, it is important to hold in mind that that self-inflicted deaths amongst the population of interest are predominantly drug-related deaths (Office for National Statistics, 2023).

Prevalence of suicide

World Health Organisation (WHO) has reported at least 700,000 fatal suicides each year (WHO, 2023). WHO estimates for each suicide death, 20 individuals attempt suicide, however rates vary globally (Turecki et al, 2019; WHO, 2014). Suicidal ideation, however, demonstrates a higher prevalence than suicide attempts, although incidence rates differ dependent upon definitions utilised in research. Despite this, a World Mental Health Survey inclusive of 17 countries found 9.2% prevalence of suicidal ideation across the lifespan, whereby 3.1% encompassed suicidal plans (Nock et al, 2008). However, these figures are dependent upon an individual's inclination to disclose suicidal ideation and attempts, of which is further contingent on religious and cultural influences and possible social stigma (Tureki et al, 2019).

Suicide risk is increased for individuals with offending histories, whereby it is reported that men in prison have 3.9 times increased likelihood to die by suicide comparative to the general population (Office for National Statistics, 2023a). An analysis for the female population could not be obtained due to a small number of deaths (Office for National Statistics, 2023a). However, the risk of suicide has been reported at six times higher in individuals under community probation supervision

compared to the general population; with the risk for men being four times greater, and the risk for women being 11 times greater (Office for National Statistics, 2023b). A study in England and Wales reported that men under criminal justice community supervision were at least ten times more likely to die by suicide comparative to the general population (Sattar, 2003), and a latter study reported 13% of general population suicides were in a community justice pathway before death (King et al, 2015). The severity of suicide risk in probation can be demonstrated further by The Ministry of Justice's annual report that reported 1,267 recorded suicides for individuals supervised in the community, averaging at approximately 115 suicides per year and encompassing 38% of all self-inflicted deaths (Office for National Statistics, 2023b). Furthermore, 67% of suicides occurred amongst those serving a post-release sentence type (Office for National Statistics, 2023b). However, these studies do not provide an understanding of potential contributory factors associated with increased suicidal behaviour amongst those serving a community sentence (Mackenzie et al, 2017; Phillips et al, 2018).

Suicide risk factors

Public attention of suicide has advanced our comprehension of risk factors and promoted a more holistic and comprehensive understanding of suicidal behaviour. Suicide risk is understood to be influenced through the interplay of numerous psychological, clinical, biological, cultural, social and environmental factors (Turecki et al, 2019). Models and theories to conceptualise suicide have been proposed (Joiner, 2005; Klonksy & May, 2015; O'Connor & Kirtley, 2018) and are discussed latter within this chapter. Although many risk factors may be involved, these models focus on their relative relationship with suicide, of which can vary and be mediated by additional factors (McGirr et al, 2009). Although categorisation is helpful to understand the relationship between risk factors, it cannot be perfected, as some risk factors act simultaneously across different factors (Turecki et al, 2019). However, some researchers conceptualised risk factors for suicide in probation populations by three broad, yet separate categories; sociodemographic factors; clinical factors and

criminological factors (Cook & Borril, 2013), of which are summarised below and utilised throughout the thesis.

Sociodemographic factors

Men in prison are 3.9 times more likely to die by suicide than their non-prison counterparts (Office for National Statistics, 2023a), whereas females in prison have demonstrated twenty times increased likelihood to die by suicide comparative to same-aged females in the general population (Fazel & Benning, 2009). Similarly, suicide risk is four times greater in men supervised in the community comparative to the general population, and 11 times greater in females who have offended compared with the general population respectively (Office for National Statistics, 2023b). Female community offenders have been at higher chance of being identified as 'at risk' (Cook & Borril, 2013), possibly as a result of women being at increased likelihood to disclose risk of harm to self (Hawton, 2002). Despite limited research regarding community offenders, reported findings suggest rates across 30+ age group are particularly at risk (Phillips et al, 2018; Pratt et al, 2007), and prison data highlights individuals aged 50-59 had the highest number of self-inflicted death (Ministry of Justice, 2023). However, unfortunately this data does not disentangle what proportion of these self-inflicted deaths were suicide, as opposed to accidental drug overdose. Despite this, much research examining suicidality within custodial settings has demonstrated ambiguous findings in suicide rates based on sociodemographic factors (Fazel et al, 2011; Freuhwald et al, 2018; Overholser et al, 2011).

Fazel et al (2008) found individuals who were married, Caucasian or male were at higher risk of completed suicide amongst a cross-cultural custodial sample. However, recent studies have reported that ethnic minorities, immigrants and individuals experiencing socioeconomic deprivation are more likely to demonstrate suicidal behaviour comparative to the general population, of which has been demonstrated in custodial settings (O'Connor et al, 2011; Stoliker et al, 2020; Turecki et al, 2019).

Finally, it is apparent that individuals reporting gender-minority, or sexual orientation-minority status, are at higher risk of suicidal thoughts and behaviour. This trend has been reflected worldwide, however is often an overlooked variable in samples with offending histories (Figueiredo & Abreu, 2015).

Social isolation, which could exist as a result of bereavement, perceived loneliness or exclusion (Batty et al, 2018; Qin et al, 2003) has been determined as a suicide risk factor, and is arguably a characteristic demonstrated in forensic populations, particularly sex offenders (Van Den Berg et al, 2017). However, it is pertinent to remember that some sociodemographic factors may function alternatively in varying social contexts. For example, minority ethnic groups demonstrate increased suicide risk when residing in localities with a low proportion of others within the same minority ethnic group (Neelman & Wessely, 1999; Tureki et al, 2019). Furthermore, some risk factors may more quickly precipitate a suicide attempt, such as ending an intimate relationship (Qin et al, 2003).

Criminal justice outcomes

It has been proposed that uncertainty regarding criminal justice outcomes and times of transition is a contributory factor for suicide risk. For example, King et al (2015) reported an increased suicide risk when remanded on police bail as a suspect, and increased rates of suicide following custodial release has been well documented (Fox et al, 2019). Sattar (2001) analysed 1267 death certificates of individuals serving post-sentence probation supervision. The study reported 25% of deaths happened within the first month following release from custody and 51% of deaths within the first 4 months. Additional research indicates the initial two weeks post release demonstrate a particularly vulnerable period for self-inflicted death amongst men (Binswanger et al, 2011; Kariminia et al, 2007). Although Binswanger et al's (2011) data combined drug overdose and suicides, Kariminia et al (2007) conducted separate analyses for suicide, and found that suicide peaked for men during the first 2 weeks post release in Australia. Furthermore, Pratt et al (2006) found that 21%

(N=79) individuals released from custody across a two-year period completed suicide within 28 days of release, and this data excluded drug-related and accidental deaths. Although we know that 49% of self-inflicted deaths are drug related amongst offenders in the community (Office for National Statistics, 2023b), these findings underscore the importance of considering suicide independently. Furthermore, 67% of suicide in offenders in the community were serving a post-release sentence type (Office for National Statistics, 2023b). Given that Post Sentence Supervision is mandatory for offenders serving a standard determinate custodial sentence of less than 2 years (Offender Rehabilitation Act, 2014), there is increased suicide risk of thousands who transition from a custodial sentence to community supervision. Finally, it is reported that individuals who receive a suspended sentence or have been convicted of sexual, violent or substance-related offences are at increased suicide risk (Cook & Borrill, 2013; Pritchard & King, 2005; Phillips et al, 2018; Webb et al, 2012).

Clinical risk factors

There is persuasive evidence regarding heritability of suicide attempts, including evidence that indicates suicide and suicidal behaviour can be demonstrated independently of psychopathologies (McGirr et al, 2009; O'Neill et al, 2017; Turecki et al, 2019;). Twin studies indicate a heritability of 30-50%, however this estimate reduces by roughly 40% once comorbid psychiatric disorders are controlled for (Fu et al, 2002). Furthermore, there is a five-fold increased risk of suicide attempt amongst individuals whose parents died by suicide comparative to the general population, although only 5% of people who complete suicide had parents who also completed suicide (Burrell et al, 2018; Turecki et al, 2019). Although research indicates familial clustering of suicidal behaviour, no genes have been reported as responsible for suicidal ideation or behaviour (Lutz et al, 2017). Therefore, it is perhaps more likely suicidal behaviour could be a result of a gene-environment interaction, hence the study of epigenetics has taken stead in suicide research. For example, childhood abuse and neglect have demonstrated strong association with adult suicidal

behaviour (Brezo et al, 2009; Turecki, 2014), and associations with epigenetic changes such as DNS methylation and histone modifications (Tureki et al, 2014) have been evidenced. Physical illness also features as a contributing factor of suicide risk, such as sleep difficulties, chronic pain and inflammatory diseases (Bernert et al, 2015; Webb et al, 2012), and traumatic brain injury has been associated with suicidal ideation and attempt in a custodial samples (Gunter et al, 2013).

Psychiatric disorder is a key risk factor associated with suicide (Mackenzie et al, 2015; Sattar, 2001). This is particularly evident in North America, whereby 90% of individuals who completed suicide had a mental illness, however this can be as low as 7% in other countries (Mars et al, 2019). Psychiatric disorders are varied amongst forensic populations (Humphreys, 2000), and are more prevalent in individuals in prison who attempt suicide, comparative to prisoners without previous history of suicide attempts (Mackenzie, 2015; Marzano et al, 2010; Rivlin et al, 2010). Although there are gender differences regarding psychiatric diagnoses, depression is common to both genders and strongly associated to suicide (Sarchiapone et al, 2009). In addition, substance use disorders, schizophrenia and bipolar are frequent psychiatric diagnoses in individuals who complete suicide (Turecki et al, 2019). Comorbidity concerning suicide and mental illness transcends to individuals serving community sentences (Mackenzie, 2015), and psychiatric disorder is prevalent amongst individuals on probation who completed suicide (Haglund et al, 2014; Pritchard et al, 1997).

Risk factors can mediate more distal factors, for example; aggressive, impulsive and anxiety personality traits; often associated with attention deficit hyperactivity disorder (ADHD), and borderline personality disorder (BPD) and obsessive-compulsive disorder (OCD) (Brezo et al, 2008; Fergusson et al, 2000; Mann et al, 2009; McGirr et al, 2009). Epidemiological evidence has also supported disorders that increase distress, such as panic disorder, can increase likelihood of enacting suicidal ideation, especially in the context of mood disorders (Nock et al, 2008). Anxiety is often reported to mediate other factors, as when it is considered as an

independent variable there has only been a weak or insignificant association with suicidal behaviour (Bentley et al, 2016). In addition, negative affect and low self-esteem have also demonstrated association with suicide (Batty et al, 2018). Furthermore, adverse childhood experiences reportedly impact stress regulation pathways, and hence can perpetuate difficulties regulating emotions, impaired executive function and diminished problem-solving ability (Richard-Devantoy et al, 2014); all of which have demonstrated association with suicide, forensic populations, and can increase likelihood of suicidal ideation when exposed to stress (Fergusson et al, 2000; Meijers et al, 2015).

Although most probation suicide research reports on prevalence of suicide, there are some clinical risk factors identified from community samples, such as; drug misuse and former psychiatric inpatient admission (Sirdifield et al, 2019). This is pertinent, as research repeatedly reports that many individuals with offending histories have poor mental and are at increased likelihood to use illicit drugs (Brooker et al, 2012; Sirdfield et al, 2019). Extensive research has highlighted links between acute and chronic substance misuse and completed suicide (data included unnatural death with undetermined intent) in recently released prisoners (Haglund et al, 2014), and an association with suicidal ideation and attempts in a community corrections sample (Gunter et al, 2011) and suicide attempts in a custodial sample (Sarchiapone et al, 2009). The influence of drug misuse is further underscored by the fact that 49% of self-inflicted deaths of offenders in the community are drug related (Office for National Statistics, 2023b). Acute alcohol and substance misuse has been associated with increased impulsivity, aggression, distress, and a reduction in coping and problem skills; all of which have been associated with enacting suicidal ideation (Favril et al, 2020a; Giancola, 2002; Ramstedt, 2001; Yu & Sung, 2015b). Furthermore, risk factors determined from custodial samples elicit variables such as; self-harm and requiring community mental health services upon release (Favril et al, 2020a; Favril & O'Connor, 2019; Fazel et al, 2011; Pratt et al, 2010).

Nonfatal suicidal attempts have demonstrated a strong association with subsequent suicide attempts and completed suicide (Turecki et al, 2019). Indeed, 40% of people who die by suicide have historically attempted suicide (Cavanagh et al, 2003). However, most individuals who experience suicidal ideation or non-suicidal suicidal behaviour do not complete suicide (Turecki et al, 2019). Therefore, it is pertinent to consider differences between individuals who demonstrate suicidal thoughts compared to behaviour, and ascertain what factors may promote suicidal ideation to transcend into an attempt.

Ideation to action framework

Research suggests that suicide risk factors can be predictive of ideation, but less prevalent when predicting those at greatest risk of enacting on these ideations (Favril & O'Connor, 2019; Favril et al, 2020b). The ideation-to-action framework is a key developing body of literature that denotes the progression of suicidal ideation, and the development from suicidal ideation to attempts, are separate phenomena with distinct predictors and explanations (Klonksy et al, 2016). The distinction is paramount; as approximately 71% of adults who experience suicidal ideation, do not exhibit suicidal behaviour (Nock et al, 2008). This research has generated a spawn of 'ideation-to action' theories that aim to address why suicidal ideation may develop, and how this may progress to a suicide attempt. Whilst it is not possible to discuss all theoretical approaches herein, three well founded suicide theories will be described (Mackenzie, 2015).

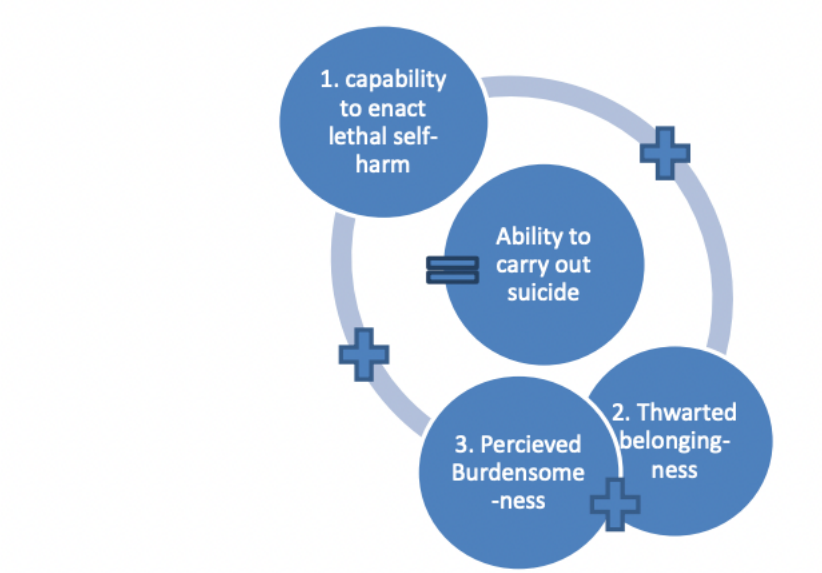
Interpersonal Theory of Suicide (Joiner, 2005)

Joiner's seminal Interpersonal Theory of Suicide (IPTS; 2006) indicates that thwarted belonginess and perceived burdensomeness can promote desire for suicide, however acquired capability can lead to a suicide attempt (Mackenzie, 2015; Van Orden et al, 2010). Perceived burdensomeness denotes an individual's own existence is so defective they are a burden to family and friends (Mackenzie, 2015; Van Orden et al, 2010). When one perceives they are a burden, they may also

believe that it would be better for friends and family if they were dead. Sense of thwarted belonginess refers to feeling lonely with a lack of sense of belonging. Although some people may be habituated to pain, they may not possess the desire for suicide (Mackenzie, 2015). Hence, outlining that desire alone is insufficient to attempt suicide, and rather one must overcome fear inherent with attempting a lethal suicide attempt often referred to as a capability for suicide (Joiner, 2005). People who have offended are identified by Joiner (2005) as possessing higher capability for suicide due to repeated exposure to provocative or dangerous events that may normalise, and hence reduce, fear and pain they may normally experience in these scenarios (Mackenzie, 2015). For example, such experiences could increase an individual's pain tolerance, of which does not necessarily have to be physical. Joiner's (2005) theory stipulates increased pain tolerance is imperative for acquired capability for a suicide attempt, and this deciphers between individuals who die, or do not die by suicide (Joiner et al., 2006).

Overall, Joiner proposes an individual is most likely to carry out suicidal behaviour when all three components interact. See Figure 1. The IPTS model (Joiner, 2005) has been utilised with people who have offended (Cramer et al, 2012; Ireland & York, 2012), and the pain tolerance component has been praised for providing possible explanations for increased rates of suicide amongst men comparative to women, and for particular 'at risk' populations (Joiner, 2006; Mackenzie, 2015).

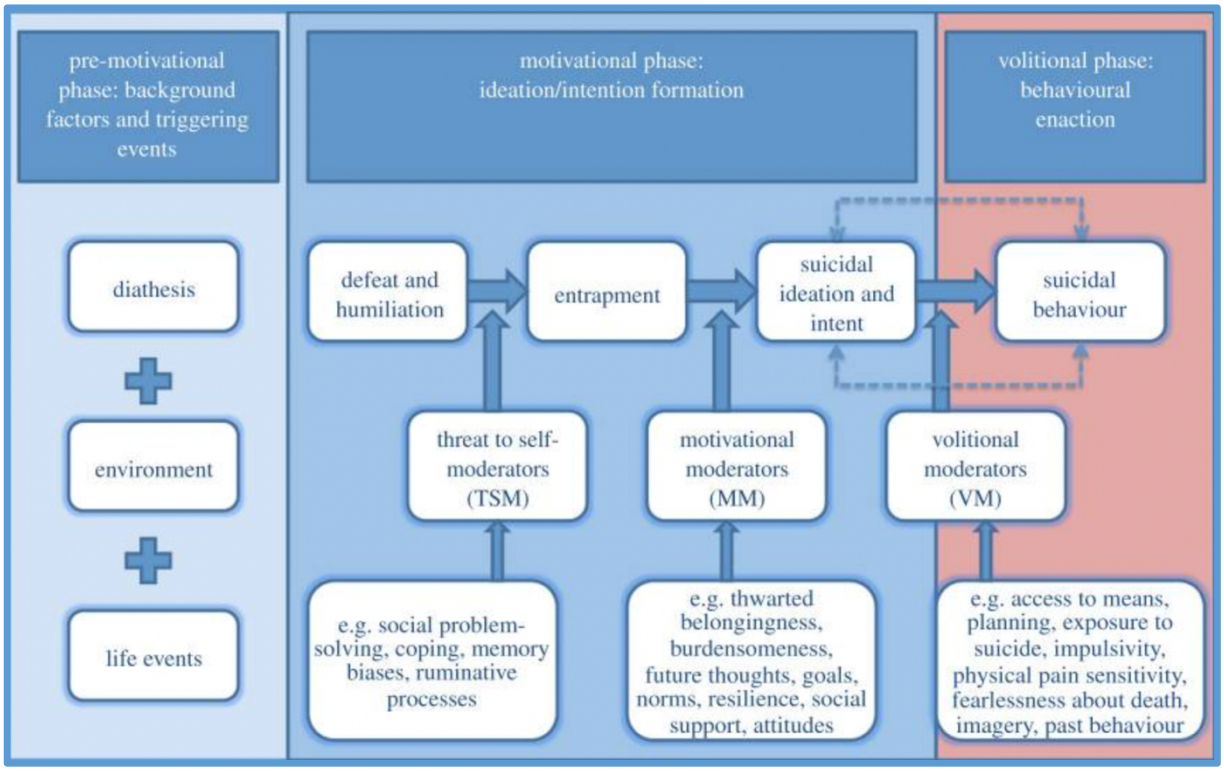
Figure 1: *Interpersonal Theory of Suicide (Joiner, 2005, as cited in Mackenzie, 2015, page 15)*



The Integrated Motivational-Volitional Model of Suicide (IMV; O'Connor et al, 2011)

The IMV (O'Connor et al, 2011) follows a similar process to the IPTS (Joiner, 2005) in that it endeavours to decipher between individuals who experience suicidal ideation from individuals engage in suicidal behaviour, or complete suicide. The motivational phase considers how suicidal ideation manifests. Specifically, the model proposes life stressors can result in feelings of humiliation and defeat, and when this interacts with specific moderators, such as difficulties coping or problem solving, can promote feelings of entrapment (Klonsky et al, 2018; O'Connor et al, 2018). As such, in the context of other moderators, such as; sense of burdensomeness, lack of belonging and pessimistic thoughts regarding the future, entrapment can present as a resolution to life stressors, hence exacerbating suicidal intent (Klonsky et al, 2018). Secondly, the volitional phase identifies motivators such as impulsivity, access to lethal means and increased capability, of which can transcend suicidal ideation into an attempt (Klonsky et al, 2018; O'Connor et al, 2018). Despite IMV's (O'Connor et al, 2011) similarities to IPTS (Joiner, 2005), it differentiates in that defeat and entrapment are identified as pathways to suicidal ideation as opposed to sense of burden and lack of belonging. Secondly, the volitional, or enacting stage, stretches beyond capability and incorporates additional motivators such as impulsivity and access to lethal means (Klonsky et al, 2018; Mackenzie, 2015).

Figure 2: *The Integrated Motivational-Volitional Model of Suicidal Behaviour (O'Connor, 2011 page 184).*



Three Step Theory (3ST; Klonsky et al, 2015)

The 3ST is the latest published ideation to action theory of suicide (Klonsky et al, 2015; Klonsky et al, 2018). Step 1 indicates the presence of psychological pain and hopelessness can precipitate suicidal ideation. The 3ST postulates when life is painful and aversive, an individual can gain a desire to avoid life, particularly if there is lack of hope the pain can be reduced and hence a sense of a more optimistic future (Klonsky et al, 2018). Step 2 indicates that ideation escalates when pain surpasses a sense of connectedness to others and purpose. In this instance, it is proposed suicidal ideation can transgress from passive (i.e. fleeting thoughts) to active (i.e. planning). Step 3 proposes that ideation transgresses to attempt when one has capacity. This includes higher pain threshold, lower fear of death and accessibility of

lethal means (Klonsky et al, 2015). This shares vital components with IPTS (Joiner, 2005) and IMV (O'Connor et al, 2011) models due to its emphasis on the function of connection with others precipitating suicidal ideation and acquired capability in the development from ideation to action (Klonsky et al, 2018).

Overall, each theory indicate suicide cannot be predicted by one factor alone. Alternatively, multiple risk factors appear to interact to form part of a suicidal process (Mackenzie, 2015), with each theory considering the complex nature of suicide and factors that could increase likelihood of a suicide. However, despite their utility these theories have not been developed specifically for forensic populations, nor do they identify risk factors that can be feasibly and routinely assessed and collated on a wide scale such as a probation setting. In light of lack of suicide research for the probation population, gaining greater insight into potential risk predictors for suicide amongst this population could encourage a more preventive approach (Mackenzie, 2015). Furthermore, it is crucial to distinguish factors that pose an individual at risk of attempting suicide, from those who experience solely ideation. This would be clinically relevant to improve risk assessment and tailor preventative intervention within the probation population (Favril et al, 2020b).

Rationale for thesis

There are two key rationales for dedicating this thesis to suicide risk in probation. Firstly, people on probation are a neglected population amongst the field of suicide research, despite their increased risk. Secondly, the thesis aims to help gain an understanding of risk factors that can influence suicide risk, of which can translate directly into practice. It is intended the results will improve clinicians' and probation practitioners' skills and confidence in identifying and managing suicide risk. Furthermore, it is pertinent to recognise gaps in the research field to inform further research, as outlined in the recommendations of the thesis. However, ultimately, the thesis hopes to contribute to understanding of suicide and support people on probation receiving the attention and support they require.

Thesis overview

The thesis is composed of six chapters that widely examine themes associated with suicide risk in probation. Each chapter demonstrates how knowledge of risk can strengthen our limited knowledge of suicide in probation, including how practitioners could assess risk in the probation setting and consideration regarding preventative intervention.

The thesis encompasses an introduction (Chapter One) and a concluding overall discussion (Chapter Six) that considers findings across each chapter. The four key chapters comprise of Chapter Two; a systematic review exploring up-to-date suicide risk factors amongst the probation population by systematically analysing 10 studies that met the review's inclusion criteria. To our knowledge, the review is the first of its kind to identify commonalities in individuals who may be at increased risk of suicide and demonstrates scarcity of research in the field.

Chapter Three is an empirical research project exploring risk factors for suicidal ideation and attempt distinctly. The study aimed to expand on prior research in the field, and identify differences between those individuals who experience suicidal ideation and a suicide attempt. To our knowledge, the study is the first of its kind to identify risk factors associated with the ideation-action framework in a probation population. The study also provides a tool that can identify vulnerabilities to suicidality and indicate individuals who may require a suicide assessment.
Chapter Four concerns a case study of a male on probation who has a history of a suicide attempt and the presence of suicidal ideation. The case study outlines assessment, formulation and intervention of the case to identify whether Cognitive Behavioural Therapy CBT; Beck & Beck, 2020) and Dialectical Behavioural Theory (DBT; Linehan, 2014) approach were effective in reducing the presence of ideation and overall suicide risk, and whether the tool developed from Chapter Three identified proposed vulnerabilities for suicidality.

Finally, Chapter Five is a critical appraisal of the Depression, Hopelessness and Suicide Screening Tool (Mills, 2004); a measure utilised in the assessment process discussed in Chapter Three. The tool has been widely utilised in forensic settings; however, a review does not exist that critiques its validity and reliability properties when utilised in forensic settings. The chapter aims to fulfil this knowledge gap through critiquing the DHS and considers practical implications, limitations and proposed further research for the field.

Chapter Two: Risk factors for suicide amongst the probation population: A Systematic Review

Abstract

Objectives: The review aims to produce an updated synthesis regarding the magnitude and range of risk factors associated with suicidal ideation, suicide attempt and death by suicide for people supervised by probation.

Methods: Seven bibliographic databases were systematically searched to identify existing evidence regarding risk factors for suicide amongst the probation population. Initial searches denoted 4,120 hits that were reduced to 10 full references following screening and quality assessment stages.

Results: The review highlighted numerous potentially modifiable risk factors that can be addressed in suicide prevention interventions. Risk factors are separated into sociodemographic, clinical, criminological and temporal variables. Sociodemographic variables consisted of female gender, age >30, lack of education qualification or status and residential instability. Clinical variables consisted of; depressive symptoms or disorder, anxiety symptoms or disorder, any other psychiatric disorder, psychiatric treatment, illicit substance misuse, psychological distress and previous victimisation. Violence perpetration was the only criminological variable to receive two hits or more, and recent release from custody was identified as a temporal risk factor.

Conclusions: Clinical risk factors appear critical in determining risk of suicide probation populations. However, alone they are insufficient to predict suicidal outcomes and additional risk factors that could mediate suicide risk should also be considered. In light of the wide pool of risk factors, it may be beneficial to identify key risk factors that could transcend suicidal ideation into an attempt. However, probation do not have surplus resources to manage these problems. Therefore, responsibility must be shared between probation, custodial and community services to provide integrated, quality resettlement support and care for those on probation.

Background

The Government suicide prevention strategy (Department for Health and Social Care, 2012; 2023) has identified individuals in the Criminal Justice System (CJS) as a priority for several years, and The National Probation Service Health and Social Care Strategy outlines its aim to improve understanding and awareness of suicide risk and prevention (National Probation Service, 2019). However, there is scant evidence regarding risk factors for suicidal ideation, suicide attempt or completed suicide when serving a probation order (Sirdfield et al, 2019). The British Psychological Society (2017) suggests suicide can be prevented by implementation of strategies that include early identification of risk factors to identify vulnerable individuals. This is demonstrated in an array of criminal justice settings, whereby risk management and assessment target modifiable risk factors (Department of Health, 2012; Gould et al, 2018; Lohner & Konrad, 2007; Mann et al, 2005). However, there is a need for evaluation and research to provide evidence for this ambition and support suicide prevention amongst the probation population; an arguably socially excluded, deprived, and vulnerable group (Sirdifield et al, 2019).

The review aims to produce an up-to-date synthesis of the magnitude and range of risk factors associated with suicidal ideation, suicide attempt and completed suicide for individuals supervised under probation. The review is the first of its kind and can clarify relevant risk factors where there may be uncertainty. It is intended that suicide risk assessment could consider factors outlined within the review and combine multiple risk factors with suitable weighting whilst being informed by clinical judgement. The review aims to improve ability to identify and reduce of suicide risk in the probation population, and it is hoped results can assist training of probation practitioners regarding knowledge of dynamic risk factors that impact risk of harm to self. Furthermore, results can assist preventive interventions that can target modifiable risk factors and increase probation practitioners' confidence and ability to safeguard (Mackenzie et al, 2017).

Appraisal of previous reviews

Preliminary searches identified three published systematic reviews of relevance (Jones & Maynard 2013; Skinner & Farringdon 2020; Sirdfield et al 2019). Skinner & Farringdon (2020) explored whether individuals who have offended and are supervised in the community were more likely to die by suicide compared with the general population. Although they found community offenders are significantly more likely to complete suicide comparative to the general population, the review could not compare risk factors between groups. Therefore, the review could not answer why community offenders are more likely to die by suicide (Skinner, 2021).
Jones & Maynard (2013) undertook a systematic review to investigate suicide risk in recently released prisoners. However, the review only considered community residing people post-custodial release, and not all studies included samples who were supervised. This is particularly pertinent, as Skinner & Farringdon (2020) reported that although ex-prisoners were four times more likely to die by suicide comparative to the general population, individuals who had not been incarcerated and were supervised in the community were eight times more at risk. In addition, the review was conducted ten years ago. Since this time, multiple studies have been completed and probation populations have increased in size. Therefore, it is likely individuals from different backgrounds are now being supervised in the community (Zhong et al, 2021).

One systematic review was identified in a grey literature search that explored suicide risk and probation (Sirdfield et al, 2019). However, the primary aim of the review was as follows: "to identify what the literature tells us about the most effective approaches to improving health outcomes for adults on probation" (Sirdfield et al, 2019, p.2). Therefore, the review focused on effective studies, and only one paper met their criteria. Although the 'background' literature provided a brief overview of possible predictors of suicide, key papers have been missed regarding possible predictors due to their strict search criteria. Furthermore, the review only searched papers only to 2017, and some of the included papers utilised samples that were not supervised by probation. Therefore, there is a need for a structured, directed and

comprehensive systematic review with the primary aim to identify risk factors associated with suicide in probation.

Aims and Objectives

The systematic review aims to synthesise existing evidence regarding risk factors for suicidal ideation, suicide attempt and completed suicide in individuals on probation. The Chapter provides the first systematic review regarding risk factors for suicide for individuals on probation and encompasses studies published over the past 20 years.

Method

A systematic widespread search regarding electronic bibliographic databases and gateways was facilitated to identify research studies appropriate for the current review. The search was conducted on 8th July 2022 – 4th August 2022 and the search was limited to references published from 1980 onwards as a result of limited resources in the searching stage. The following electronic bibliographic databases, electronic gateways and grey literature were utilised:

<u>Electronic bibliographic databases</u>

- MEDLINE (24th July 2022)
- PsychINFO (24th July 2022)
- Embase (24th July 2022)
- IBSS (29th July 2022)
- ASSIA (29th July 2022)
- Web of Science (1st August 2022)
- Scopus (1st August 2022)

<u>Other electronic gateways</u>

- The Campbell Collaboration was searched for existing reviews (8th July 2022)

- The Cochrane Library was searched for existing reviews on (8th July 2022)
- Reference lists of all identified studies were hand searched and examined based on the review's inclusion/exclusion criteria.

Grey literature

The Probation Journal and reference list of included papers were hand searched. Grey literature such as; reports, government documents, theses and conference abstracts were also utilised to reduce likelihood of repetition pre-publication using the following databases:

- Proquest global theses (3rd August 2022)
- Google Scholar (3rd August 2022)
- Open Grey (7th August 2022)
- National Offender Management Service (7th August 2022)
- The King's Fund (8th August 2022)

Search strategy

The study protocol outlined the predetermined search strategy composed during scoping exercises completed in March 2022. The search strategy was consistently followed and search syntax is outlined in Box 2. The syntax was applied to aforementioned electronic bibliographic databases and electronic gateways; however, adaptations of search strings was required in instances whereby simplistic search functions were required. All references identified were saved and processed in Endnote. Grey literature search results were reviewed as found, with studies that met the review's criteria being identified by hand.

Box 2: *Review search terms*

(probation*) OR (communit*) OR (offend*) OR (parole*) OR (licence) OR (community rehabilitation compan*) OR (national probation service*) OR (community order*) OR (mental health treatment requirement*) OR (sentence*) OR (order*) OR (rehabilitat*) -AND- (characteristic*) OR (risk factor*) OR (protective*) OR (demographic*) OR (predictor*) -AND- (suicid*) OR (self-inflicted death) OR (suicide attempt*) OR (lethal attempt*) OR (fatal attempt*) OR (ideatio*) OR (completed suicide*)

Study selection

All identified studies were reviewed against the review's inclusion and exclusion criteria, using a form developed at the time of the protocol (Appendix A). Studies were excluded if a separate analysis for probation sample was not conducted, or if the outcome was not related to suicide. Studies whereby the suicidal ideation, attempt or completed suicide did not occur whilst explicitly under community supervision were excluded. Specifically, as the review is concerned on assisting the management of individuals who are supervised in the community.

Initially, the titles and abstracts of retrieved studies were screened for topic relevance. Duplicate and irrelevant studies were excluded. The full text of remaining included studies were acquired, and their eligibility examined thoroughly against the PECO criteria (Appendix A), of which is surmised below. Studies that utilised duplicate data were excluded to avoid double-counting.

Inclusion/exclusion criteria

The PECO (Population, Exposure, Comparator, Outcome) framework was utilised to ascertain eligibility criteria, of which is outlined below

Inclusion criteria

Population : The sample includes adults supervised on probation or community order (Over 18 years old)

Exposure: Characteristics regarded as risk/protective factors present

Included studies report on a broad range of exposures including but not limited to the following:

a) Demographic factors: gender, ethnicity, relationship status, employment, accommodation.
b) Criminological factors: sentence length, offence type, previous offending history, length of imprisonment, length of order, order type .
c) Clinical factors: history of attempted suicide, recent suicidal ideation, being on psychotropic medication, psychiatric diagnosis, substance or alcohol misuse, contacts with healthcare providers.

Comparator: Any separate group as outlined within the inclusion population where possible, or no specified comparator and therefore characteristics regarded as present or absent.

Outcome: Suicidal ideation, suicide attempt and completed suicide using psychometric, self-report and recording systems

Study Design: Any comparative quantitative study design

Context: Criminal Justice supervision in a community setting

Exclusion criteria

- Qualitative and case studies
- Duplicates, books and Non-English language articles
- Unpublished studies, book chapters, commentaries, editorials, narrative, or alternative opinion papers.

Quality assessment

Following exclusion of publications that did not meet the review criteria, the potentially included studies were quality assessed using a pre-piloted checklist. Quality assessment checklists were developed specifically for each study type. The checklists for cohort studies, case control and cross-sectional studies can be found in Appendix B, of which were derived from the Critical Appraisal Skills Programme (CASP UK, 2018) toolkits. Checklists considered potential bias within included research, such as; sampling, selection, attrition and measurement biases. A scoring system accompanied the quality assessment criteria to certify greater quality studies obtained greater scoring. Each principle was scored as follows:

- U = Unknown
- 1 point for every high quality 'Yes' response
- 0.5 points for every 'Partial'
- 0 points for every inadequate/low quality 'No' response

Unknown (U) answers required further investigation when studies were possibly of adequately high quality to progress within the review. Further investigation was completed predominantly through contacting authors of studies via email. If a response was not received, scores were not adjusted. All scores for each criterion were summed to curate an overall score for study quality. The maximum possible score cohort studies was 14, 12 for case-control and 20 for cross-sectional studies. Furthermore, the number of 'unknown' items were summed to further determine clarity of reporting; whereby a high prevalence of 'unknown' criterion was indicative of low-quality reporting. The total sum of 'unknown' items was deducted from the quality score to establish an overall quality assessment score as follows:

- Quality Score – Nº of Unknown = Total Quality Score.
-

Quality assessment was conducted predominantly by the primary author, however another reviewer assessed 50% of included papers to assess and promote consistency in the assessment of quality. Variation within the quality ratings were agreed mutually through further discussion. An intra-class correlation (ICC) was utilised to determine inter-rater reliability regarding the degree of consistency across quality ratings. The ICC was 0.9, of excellent range, and therefore demonstrates minimal measurement error and high agreement between reviewer quality ratings (Hallgren, 2012). A cut-off point was agreed by both reviewers to determine whether studies would progress to data extraction. As the range of quality scores was 65-90% the cut-off point identified was 75%.

Overview of the quality assessment criteria (Summary of Appendix B)

Cohort studies

The cohort study checklist (CASP UK, 2018) assessed whether the study addressed a clearly defined issue, of which included people on probation as the sample and risk factors for suicidal outcomes as variables of interest. The tool assessed whether recruitment minimised selection bias, and whether exposure and outcomes were accurately measured to minimise measurement bias; using validated and consistent methods. In addition, the checklist considered whether confounding variables were identified and adjusted for, and assessed whether there was a follow-up period. Furthermore, it evaluated the results by examining the strength and precision of the association between exposure and outcomes. Finally, the checklist assessed the applicability of the findings to local populations, their consistency with other available evidence, and implications for practice.

Case control studies

The case control study checklist (CASP UK, 2018) assessed whether the research question was clearly focused and whether the case-control design was appropriate. It examined whether cases and controls were recruited in an acceptable manner to avoid selection bias, ensuring they represent a defined population. The checklist also considered if exposure was accurately measured to minimise bias and whether the groups were treated equally. It considered whether confounding factors were accounted for, with attention to how large and precise the treatment effect was, including consideration of p-values and confidence intervals. Finally, the checklist assessed whether the study results are reliable, based on their design and possible sources of bias. Section B focused on the applicability of the results to the local population and how they fit with existing evidence.

Cross-sectional studies

The cross-sectional study checklist (CASP UK, 2018) evaluated the clarity of the study's aims and the appropriateness of its design, ensuring that the sample size and population are well-defined and representative. The tool assessed whether the selection processes avoided bias, how non-responders were handled, and whether risk factors and outcomes were measured accurately. The checklist also considered clarity of statistical significance, the reproducibility of methods, and the potential for bias from non-response. Additionally, it examined whether the results were consistent, conclusions were justified, and if limitations, funding sources, conflicts of interest and ethnical approvals were addressed.

Data extraction

Data and relevant information were extracted from the studies that passed the quality assessment, and hence rendered them as included in the study, utilising a data extraction form that was composed prior to commencing the review (Appendix C, of which is surmised below). If information was unclear or sparse and a response was not received by the author, an answer was recorded as 'unknown'. The quality assessment score was documented on the data extraction form, alongside the

frequency of unknown or unclear questions for each study. Data extraction was conducted solely by the primary author, and the predetermined form promoted a consistent approach. The following study information was noted: inclusion/exclusion criteria, target population demographics, control group characteristics where possible, study methodology including analysis and results relevant to the review.

Summary of data extraction form (Appendix C).

The data extraction form collected essential information about research studies for quality assessment and analysis. It includes general information such as the study number, date of extraction, title, authors, publication details, country of origin, and quality assessment score along with the count of unclear responses. The form also verified study eligibility based on the PECO criteria, confirming whether the population, exposure, comparator, and outcome criteria are met. Study characteristics were detailed, covering; aims, design, inclusion and exclusion criteria, recruitment procedures, and study setting. Population data included target population specifics, source and age group, as well as total sample size. Additionally, where appropriate, it outlined information about the comparator or control group, including whether it was matched, the number of controls, and any relevant details. The methods section captured outcome and exposure measurement approaches, along with data analysis techniques. Finally, the outcomes section identifies and defines risk factors studied, measurement methods, validation of outcome tools, statistical methods used, and considerations for adjusting systematic and random errors in the analysis.

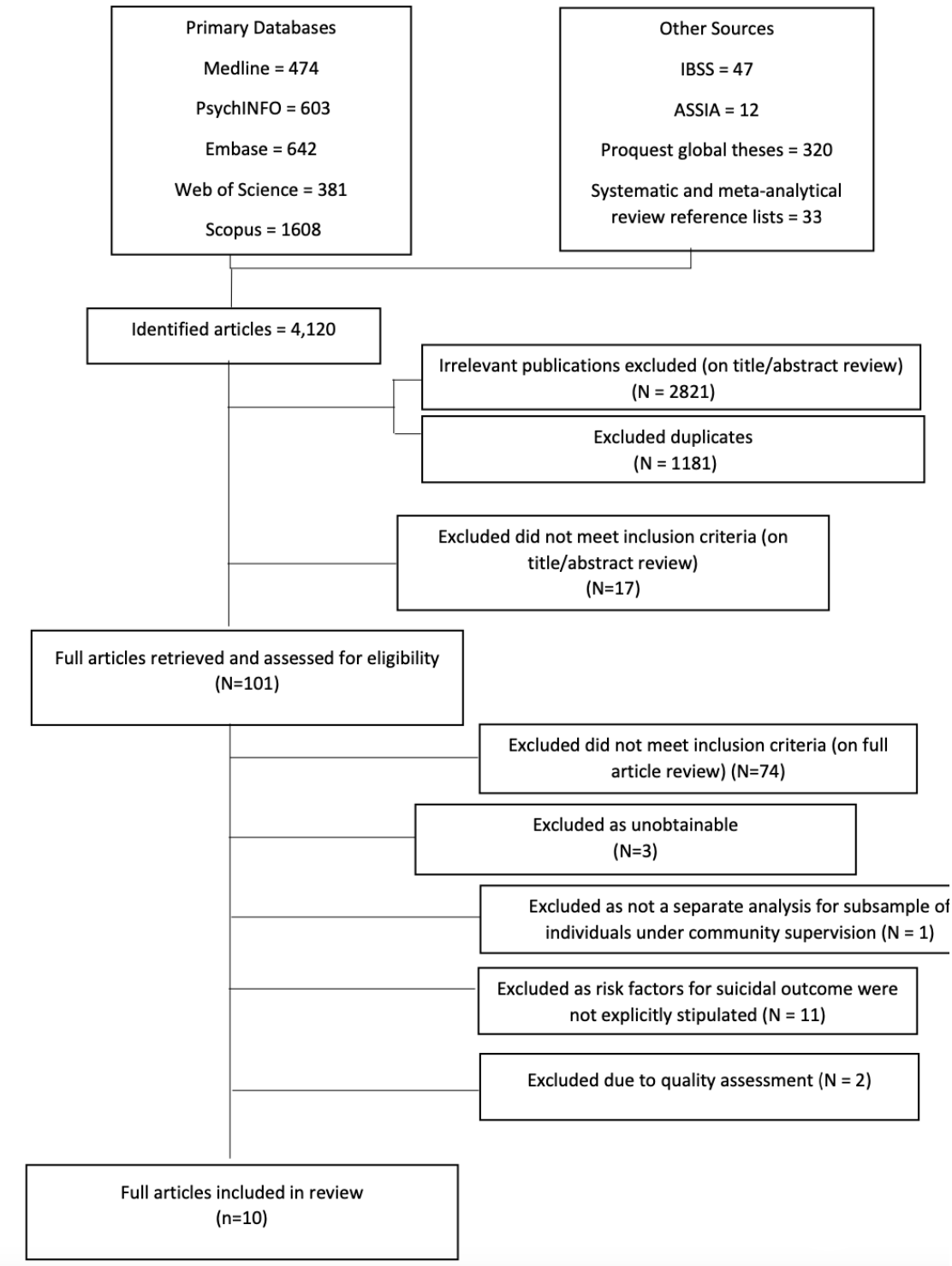
Results

Description of studies

The entire search process generated 4120 hits, and were mostly acquired through the following electronic bibliographic databases: Medline (474), Psychinfo (603), Embase (642), Web of Science (381) and Scopus (1608). Additional studies were obtained from Proquest global theses (320), IBSS (47) and ASSIA (12). Existing

systematic reviews and included studies reference lists were hand searched to yield 33 additional research papers, however nearly 30% of overall hits were duplicates. It's hypothesised the low number of hits reflects the scarcity of literature within the study field, and further demonstrates the need for further focus and attention within this research area. Figure 3 outlines the study selection process.

Figure 3: *Study selection*



Characteristics of included studies

Table 1 summarises characteristics of the 10 included studies in this review. All studies explicitly included adults receiving criminal justice supervision in a community setting such as probation, or an international equivalent. Eight studies concerned the probation setting (Brooker et al, 2021; Candarelli et al, 2014; Cook & Borrill, 2013; Haglund et al, 2014 Phillips et al, 2018; Pratt et al, 2006; Yu & Sung, 2015a;2015b) and two concerned community corrections (Gunter et al, 2011; McCullumsmith et al, 2013). The purpose of incorporating community corrections is they likely hold similar characteristics to those supervised by probation and can add value to the review.

Four studies were reported in the United Kingdom (Brooker et al, 2021; Cook & Borrill, 2013; Phillips et al, 2018; Pratt et al, 2006;), five in the United States (Yu & Sung, 2015a; 2015b; Candarelli et al, 2014; Gunter et al, 2011; McCullumsmith et al, 2013;) and one in Sweden (Haglund et al, 2014).

Three studies utilised completed suicide as a study outcome (Haglund et al, 2014; Phillips et al, 2018; Pratt et al, 2006). However, it is of note that Haglund et al (2014) included suicide and unnatural death with undetermined intent in their definition of suicide, Phillips et al (2018) included self-inflicted deaths in their definition of suicide, and Pratt et al (2006) included individuals who received an open verdict at the coroner's inquest. Although Pratt et al (2006) excluded accidental deaths, findings from these papers should be interpreted with caution, particularly as we know that accidental drug deaths comprise 49% of self-inflicted deaths (Office for National Statistics, 2023b). Therefore, findings may not directly correlate to suicide. Three concerned the presence of suicidal ideation or attempt (Brooker et al, 2021; McCullumsmith et al, 2013; Gunter et al, 2011), one used staff judgements of those 'at risk of suicide' by probation (Cook & Borril et al, 2013) and three concerned suicidal ideation alone (Yu & Sung, 2015a; 2015b; Candarelli et al, 2014). As the

pathway to suicidal ideation and action have been identified as separate pathways (Brooker et al, 2021), ideation outcome studies will be considered separately.

Sample sizes varied across the 10 studies, with larger studies often sampling entire cohorts, whereas smaller studies focussed on specific localities or collection of individuals observed over shorter time periods. The total number of participants in the systematic review was 427,561. Only 18,613 (4.4%) of these participants exhibited the outcome of interest, however two papers (Yu & Sung, 2015a; 2015b) did not specify the proportion of the sample that demonstrated suicidal ideation. The average sample size was 42,756 per study with a large range of 274 to 244,988 participants.

Five studies utilised the absence of suicidal ideation or attempt as control groups (Brooker et al, 2021; Candarelli et al, 2014; Gunter et al, 2011, McCullumsmith et al, 2013), two used the general population (Haglund et al, 2014; Pratt et al, 2006;), one used prison and general population (Phillips et al, 2018), one used non-parolees (Yu & Sung, 2015b) and one used staff judgements of individuals not 'at risk' of suicide (Cook & Borril, 2013). One study did not specify a control group, however concerned gender differences amongst parolees (Yu & Sung, 2015a). It is of note only five studies conducted gender differences analyses (Haglund et al, 2014; McCullumsmith et al, 2013; Phillips et al, 2018; Pratt et al, 2006).

Due to the level of heterogeneity across studies, statistical combination of data has not been attempted. Specifically including variation in measurements and analytic methods used, and in the predictor and outcome variables explored, as outlined in Table 1. Furthermore, meta-analyses can produce spurious results due to distortion of data across different research designs, of which can originate from uncontrolled confounds and selection biases (Egger et al, 1998). Instead, an overview of study characteristics, key findings and associated quality scores are presented in Table 1, followed by a comprehensive descriptive data synthesis.

Table 1: *Summary of included studies*

Author, year and setting	Aims of study	Study design	*Outcome measure* and study variables	Measures of suicidal outcome	Control group	Participants	Quality score	Main relevant findings
Pratt et al (2006) Probation, England and Wales	To investigate suicide rates in recently released prisoners in England and Wales supervised under probation	Retrospective population-based cohort study	*Completed suicide (of which included open verdict at coroner's inquest)* Time after release Age Sex	Verdict of suicide at coroner's inquest	General population	N = 244,988 (382 observed suicides)	12.5	21% of suicides occurred in first 28 days post release 51% occurred within first 4 months Highest rates of male suicide in those aged 40-49 years and 50 years or older Rate ratio of about 4 for men < 25 years increasing to beyond 15 in men aged 50>. Men 8 times and women 36 times more likely to complete suicide in first year of release from custody than would be anticipated in general population respective sex groups
Phillips et al (2018) Probation, England and Wales	To gain a better understanding of the rate of suicide amongst people under the supervision	Retrospective cohort study	*Completed suicide (of which included self-inflicted deaths)* Gender, age, ethnicity Sentence type	HMPPS data completed by probation providers when	Prison and general population	N = 1619 observed suicides	12	Suicide rate for men on probation 6 times higher than general population, and 29.2 times higher for women respectively. The rate ratio (28) between men aged 30-49 was the highest and age 30-39 for women.

	of probation providers		Time after sentence, day of the week	someone dies in accordance with Probation Instruction				Women on post release sentence identified as high risk White ethnicity at increased risk, irrespective of gender Risk of suicide high in first few weeks of release
Yu & Sung (2015b) Probation, USA	Examined the prevalence and correlates of suicidal ideation among parolees and among persons not on parole	Cohort	*Suicidal ideation* The National Survey on Drug Use and Health (NSDUH) provides up-to-date information on demographic, social, alcohol, and drug use, mental health and other health-related issues	A question in the NSDUH: "At any time in the past 12 months … including today, did you seriously think about trying to kill yourself?	Non-parolees	N =114,033 (1,249 parolees)	10.5	High school graduate was associated with increased suicidal ideation among parolees (OR = 1.62) Serious psychological distress, major depressive episode, illicit substance use, and inpatient stay were related to increased suicidal ideation. For parolees, these variables increased the odds of suicidal ideation by a factor of 2 to 5.
Yu & Sung (2015a) Probation, USA	To examine gender differences in suicidal ideation of probationers	Cohort	*Suicidal ideation* The National Survey on Drug Use and Health (NSDUH) provides up-to-date information on demographic, social, alcohol, and	A question in the NSDUH: "At any time in the past 12 months … including today, did you	Not specified – men vs women	N = 4320	11	Being black and female doubled the odds of having SI (OR = 2.014, 95% CI = 1.247 – 3.254). Illicit drug use was associated with increased SI for male probationers (OR = 1.668, 95% CI = 1.236 – 2.252). For both genders, having serious psychological distress increased

			drug use, mental health and other health-related issues	seriously think about trying to kill yourself?				the odds of SI: for men (OR = 5.22, 95% CI = 3.759 – 7.257) and women (OR=4.969, 95% CI = 3.130 – 7.888). Experiencing a major depressive episode (for males, OR = 5.125, 05% CI = 3.578 – 7.341; for females, OR = 3.080, 95% CI = 2.031 – 4.672) and receiving inpatient mental health treatment (for males, OR = 2.605, 95% CI = 1.470–4.616; for females, OR = 3.801, 95% CI = 1.951–7.407) were predictors of SI for both groups. Residential instability, operationalised by moving more than once within the previous 12 months, increased the odds of SI for female probationers only (OR=1.896, 95% CI = 1.290-2.787). Perpetration of violence them was related to increased SI for female probationers only (OR=1.691, 95% CI = 1.009-7.407)
Cook & Borrill (2013)	To identify risk factors that predicted staff judgements about previous	Cross-sectional	*Risk of suicide* The OASYS includes demographic data and areas related	OM view of risk of suicide on OASYS	Individuals 'Not at risk'	N = 38,910	15	Marginally higher proportion of females identified as at risk of suicide.

Probation, England	or current suicide risk in offenders under probation supervision in a metropolitan probation trust.	to offending behaviour such as relationships, substance misuse, thinking and behaviour, emotional well-being, and attitudes. The emotional well-being section includes questions about coping, psychological problems and depression, concerns about self-harm, previous suicide attempts and suicidal thoughts, social isolation, self-image, and psychiatric problems.	The youngest age group (18–25 years) had the lowest rates of at-risk judgements (8%, n = 874). Small statistically significant differences were observed between different ethnic groups ($\chi 2$ (6, N = 38,910) = 478.31, $p < .0001$, $\varphi = .11$). White British ethnic group received highest rates of assessed suicide risk (16%, n = 2,879) <u>Offending-related factors</u> Small, however statistically significant differences were reported regarding all offending variables; offence type, risk of serious harm to others, risk of general reoffending predictor, risk of violent reoffending predictor, and MAPPA status. Regarding offence type, incidence of risk of suicide ratings were highest in sexual offenders (20%, n = 254) and violent offenders (14%, n = 1,240). <u>Historical, clinical and current behavioural or situational risk factors</u> All factors demonstrated statistically significant differences at the $p < .0001$ level. Of these factors seven risk

								factors showed effect sizes (φ) of ≥.30 : previous history of self harm/attempt/ideation, low coping skills, psychiatric treatment/medication, poor attitude to self, childhood abuse, current psychological problems/depression, and problematic history of close relationship problems.
Candarelli (2014) Probation, USA	To assess the prevalence of mental health disorders in a community-dwelling probationer population and its association with suicide risk.	Cross-sectional	*Suicidal ideation* Demographic measures Adult ADHD self-report scale, GAIN short screener for MH: Substance use disorders, depression, anxiety, mood disorder and bipolar.	GAIN-SS question 'are you thinking about ending your life or completing suicide?'	Answered no to GAIN-SS	N = 2077	16	No differences in demographic variables. However greater proportions of women (21.8%, p < .001), positive screeners for substance abuse disorders (21.8%, p<.001), ADHD (51.2%, p <.001), anxiety disorder (42.4 %, p <.001), bipolar disorder (23.5%, p<.001), and depression (40.5%, p<.001) amongst individuals with high suicide risk. Following adjustment for possible confounding effects, females were approximately 2 times more likely to screen positive for suicide risk. Participants who screened positive for substance abuse disorders were over two times more likely to screen positive for suicide risk.

								Participants who screened positive for ADHD, anxiety disorder, bipolar disorder, and depression were approximately 2–8 times more likely to screen positive for suicide risk.
Brooker et al (2019) Probation, London England	To examine variables that might be associated with suicidality in probationers assessed as needing, and accepting, psychological intervention	Retrospective cohort	*Current and/or past suicidal ideation or action* Demographics: age, gender, ethnicity, post code Crime: order and offence type Psychometric measures: K6, GAD, PH-9, WSAS.	Suicidal ideation: One or more record of ideation in opinion of the clinician Suicide attempt: A recorded example of an attempt in which medical attention as required.	No history of ideation or attempt	N = 274	10.5	There was no statistical difference between the groups in gender, age, ethnicity, order type or local area deprivation score. There was no statistical difference between the attempt or ideation group. However, attempt and the ideation group were significantly more likely to have a higher score than the no history of suicide group regarding; psychological distress, generalised anxiety, depression, personality disorder and previous engagement with psychological services.
Haglund et al (2014)	To investigate rates and risk factors for suicide in people	Prospective cohort	*Completed suicide, of which included unnatural death and undetermined intent*	Suicide obtained from the Cause of Death	Non-convicted population	N= 26,953 releases	12	Most suicides were observed during the first year after release, with risk falling each year of study period. Incidence rate for suicide highest during first 28 days.

Probation, Sweden	previously imprisoned		Country of birth Previous prison sentences, offence type Psychiatric disorders; psychotic disorder, affective disorder, personality disorder, substance use disorder, any psychiatric disorder. Psychiatric hospitalisations Previous suicide attempt Time after release	Register, eld by the National Board of Health and Welfare.	controls matched on gender and year of birth	127 suicides (n=920, 14%)		Increased risk in released prisons with any previous psychiatric history (HR=3.5, 95% CI 2.3 – 5.3). However, when substance use disorder was excluded from this category, the increase disappeared (HR=1.1, -.5-2.1). Other factors related to increased suicide risk were previous suicide attempt (HR=3.6, 2.5-5.1), being released twice during the study period (HR=1.6, 1.0=2.4) and being born in Sweden compared with abroad (HR=2.7, 1.6 – 4.6). Specific diagnostic categories associated with increased suicide risk were psychotic disorder (HR 2.4, 1.5-3.8) and substance use disorder (HR=3.1, 2.1-4.6). No significant increase of risk by gender, age band, or in those with a history of violent crime
McCullum smith et al (2013)	To identify factors correlated with historical suicide attempts and	Cross-sectional	*Suicide attempt or suicidal ideation* Age, sex, race, marital status, education,	Responses to having 'seriously thought of suicide' and	No history of ideation	N = 18,753 Control (n=856; 37%)	18	Participants with historical suicide attempts were more likely to be younger, white, female, taking psychotropic medication, have a history of physical or sexual abuse,

Community corrections, USA	ideation among African-American men, African-American women, White men, and White women in a community corrections population.		accommodation, employment, insurance, psychiatric medication, physical or sexual abuse, alcohol and drug dependence	to having 'attempted suicide' in interview	or attempt	Ideation (n=2,314; 12.3%) Attempt (n=1,458; 7.7%)		and be dependent on alcohol and substances. Five variables were frequently associated with suicide attempts for all four race/gender groups: younger age, being on disability or retirement, taking psychotropic medication, history of sexual or physical abuse, and illicit substance dependence. Other demographic variables had race or gender specificities as risk factors for suicide attempts.
Gunter et al (2011) Community corrections, USA	To identify factors that separate the ideator and actor groups from the control group among community-supervised offenders	Cohort	*Suicide attempt or suicidal ideation* Gender, race, age, marital status, education, employment, childhood traumatic life experience, lifetime brain injury, anxiety disorder, depression symptom sum, depressive	The semi-structured Assessment for the Genetics of Alcoholism Revised (SSAGA-II) that includes questions regarding suicidal ideation	No history of ideation or attempt	N = 418 Control (n=235; 56%) Ideation (n=70; 17%) Attempt (n=125; 30%)	11.5	A model composed of five independent variables differentiated the ideation and action groups from the control group: Caucasian race, depressive symptom sum, brain injury, childhood trauma, and avoidant personality. These five factors, combined with the additional variables of PCL:SV Factor 2 (Psychopathy Checklist-Screening Version) score and lifetime anxiety disorder, differentiated the action group from the control group

disorder, avoidant personality, borderline personality, ASPD DSM criteria, substance use disorder, drug dependence, PCL:SV Factor 1 and 2 Number of convictions and current conviction	and suicide attempts.

Descriptive data synthesis

Sociodemographic, clinical, criminogenic and temporal variables associated with suicidal outcomes were identified across 10 papers. All papers explored sociodemographic variables (Brooker et al, 2014; Gunter et al, 2011; Haglund et al, 2014; McCullumsmith et al, 2013; Phillips et al, 2018; Pratt et al, 2006; Yu & Sung, 2015a; 2015b). All papers aside from two considered clinical variables (Phillips et al, 2018; Pratt et al, 2006), however these were the only studies to consider temporal variables. Finally, all but four studies explored criminogenic variables and their association to suicidal outcomes (Candarelli et al, 2014; McCullumsmith et al, 2013; Phillips et al, 2018). No two papers explored all of the same variables. Appendix D provides an overview of variables were explored within each paper and the proportion of hits identified for each variable. Only variables with 3 or more hits are discussed in detail herein, aside from criminogenic variables that comprise at least two hits due to sparsity of data. However, variables that received less than three hits are briefly surmised below. Please see Appendix E for a more in-depth descriptive data synthesis of variables with two hits.

Summary of descriptive data synthesis for variables with one hit

- Financial difficulties were explored in four papers (Cook & Borrill, 2013; Gunter et al, 2011; Yu & Sung 2015a), however were only identified as significantly associated with suicidal ideation in one paper (Cook & Borrill, 2013).
- Sentence type was used as a variable in four papers (Brooker et al, 2019; Cook & Borrill, 2013; Gunter et al, 2011; Phillips et al, 2018), however post-sentence supervision was only identified as associated with completed suicide in one paper (Phillips et al, 2018)
- Sexual offending, risk of serious harm to others and MAPPA status were identified as significantly associated with staff's judgements of suicide risk, however were only utilised in one paper (Cook & Borrill, 2013).

- Being recalled and released or having multiple convictions were utilised in two papers (Gunter et al, 2011; Haglund et al, 2014), but only were identified as associated with completed suicide in one paper (Haglund et al, 2014).
- Finally, conviction as an adolescent was only utilised in one paper (Gunter et al, 2011), whereby findings indicated association with ideation and attempt.

Summary of descriptive data synthesis for variables with two hits (Appendix E).

Sociodemographic variables

Relationships

- Relationship status was associated with suicide risk in two out of five studies that utilised it as a variable (Cook & Borrill, 2013; McCullumsmith et al, 2015).
- Key findings included the importance of problematic past relationships and social isolation (Cook & Borrill, 2013), and a correlation between divorce and suicide attempts among women (McCullumsmith et al, 2015).
- Other studies did not find significant associations between relationship status and suicidal outcomes (Gunter et al, 2011; Yu & Sung 2015a; Yu & Sung 2015b).

Physical Health

- Physical health was associated with suicide risk in two out of six studies that utilised it as a variable (Gunter et al, 2011; Cook & Borrill, 2013).
- Gunter reported brain injury as a risk factor for ideation and attempt, while Cook & Borrill linked poor health to staff assessments of suicide risk.
- Other studies did (2013) not find significant associations between physical health and suicidal outcomes (Brooker et al, 2019; McCullumsmith et al, 2013; Yu & Sung 2015a; Yu & Sung 2015b).

Employment Status

- Employment status was explored in five studies, with a significant association found with suicidal outcomes in two (Cook & Borrill, 2013; McCullumsmith et al, 2013). However, a significant association was not demonstrated with outstanding studies (Gunter et al, 2011; Yu & Sung 2015a; Yu & Sung 2015b)

Clinical variables

Alcohol misuse

- Alcohol misuse was less frequently cited compared to illicit substance misuse, with only two out of five studies reporting significant associations with suicidal outcomes (Cook & Borrill, 2013; McCullumsmith et al, 2013).

Attitude to self and problem-solving ability

- Problems with attitude to self and problem-solving ability were significantly associated with suicidal outcomes in both studies that examined it (Brooker et al, 2019; Cook & Borrill, 2013).

Previous suicidal tendencies

- Previous suicidal tendencies were identified as significantly associated with suicide risk in the only two studies that utilised it as a variable (Cook & Borrill, 2013; Haglund et al, 2014).
- Cook & Borrill (2013) emphasized the predictive nature of prior self-harm experiences, while Haglund et al (2014) reported a nearly four-fold increase in completed suicide likelihood among those with previous attempts.

Sociodemographic variables

<u>Gender</u>

Gender was explored as a variable associated with suicidal outcomes across all papers. Across seven studies, women were identified to be at increased risk of completed suicide (Haglund et al, 2014; Phillips et al, 2018; Pratt et al, 2006), suicide

attempt (McCullumsmith et al, 2013), suicidal ideation (Candarelli et al, 2014; Yu & Sung, 2015a) and increased staff's judgements of suicide risk (Cook & Borrill, 2013). The remaining three studies did not report gender differences regarding likelihood of suicidal ideation or attempt (Brooker et al, 2021; Gunter et al, 2011) or suicidal ideation (Yu & Sung, 2015b). It is proposed gender differences were not found in these studies due to smaller sample size comparative to other studies. However, Phillips et al (2018) reported men on probation were five times more likely to complete suicide than the general population, compared to the rate of 36 times for women.

Ethnicity

White race or ethnicity was identified as a risk factor associated with completed suicide (Phillips et al, 2018), suicidal ideation and attempt (Gunter et al, 2011; McCullumsmith et al, 2013) and staff's judgements regarding increased suicide risk (Cook & Borrill, 2013) across four papers. Conversely, Yu & Sung (2015a) reported black ethnicity or race doubled the risk of suicidal ideation amongst female probationers. Yu & Sung (2015a) and McCullumsmith et al (2013) were the only papers to explore gender differences regarding ethnicity and its association with suicidal ideation and attempts, however, McCullumsmith et al (2013) did not report significant differences. Three papers did not report ethnicity as associated with suicidal ideation (Yu & Sung, 2015b; Candarelli et al, 2014) or suicidal ideation and attempt (Brooker et al, 2021). This could be a result of analysis encompassing multiple categories of race or ethnicity, and hence a decreased sub-sample size reducing likelihood of meaningful analysis. The remaining two papers did not report an analysis of ethnicity as associated with completed suicide (Haglund et al, 2014; Pratt et al, 2006).

Age

Age was explored as a variable associated with suicidal outcomes across all papers. However, only four papers reported differences in age regarding likelihood of completed suicide (Phillips et al, 2018; Pratt et al, 2006), suicide attempt

(McCullumsmith et al, 2013) and staff's judgements regarding increased suicide risk (Cook & Borrill, 2013). Of these papers, three explored gender differences (McCullumsmith et al, 2013; Pratt et al, 2006; Phillips et al, 2018). For men, the highest rates were observed amongst individuals aged 30 years and above (Phillips et al, 2018; Pratt et al, 2006). Age-specific trends for could not be discerned due to sparse data (Pratt et al, 2006), however, Phillips et al (2018) reported a particularly high-rate ratio for women within the 30-39 age category. Cook & Borrill's (2013) reported individuals aged between 18-25 had the lowest rates of at-risk judgements (8%, n = 874) compared to older age categories. Although this difference only accounted for only .5% of variation in suicide judgements, the finding supports both Phillips et al (2018) and Pratt et al (2017) that risk of suicide in probation may increase with age.

Conversely, McCallumsmith et al (2013) reported 'younger age groups' were associated with suicide attempt, irrespective of race or gender. However, Pratt et al (2007) and Phillips et al (2018) outcome variable concerned completed suicide, whereas McCallumsmith et al (2013) outcome was history of suicide attempts. Furthermore, McCallumsmith et al (2013) reported suicidal ideation did not demonstrate significance with any specific age group, and this finding was reflected across all studies exploring suicidal ideation as an outcome (Brooker et al, 2021; Candarelli et al, 2014; Gunter at al, 2011; Yu & Sung 2015a; 2015b).

Education

Education qualifications or status were identified as a variable in six studies to explore its association with suicidal outcomes (Candarelli et al, 2014; Cook & Borrill, 2013; Gunter et al, 2011; McCullumsmith et al, 2013; Yu & Sung, 2015a; 2015b) and was found to be associated with suicide risk in half of these papers. Lack of formal qualifications was associated with suicidal ideation (Yu & Sung, 2015b), staff judgements of increased suicide risk (Cook & Borill, 2013), and suicide attempts amongst white women and men (McCallumsmith et al, 2013). In addition, formal qualifications were protective against suicidal ideation in the overall sample and

white men (McCallumsmith et al, 2013). However, the remaining three papers did not report associations with education and suicidal ideation (Candarelli et al, 2014; Yu & Sung, 2015a) and suicidal ideation or attempts (Gunter et al, 2011). It is likely reported significant associations may reflect the use of binary outcomes for variables and obtaining larger sample and sub-sample sizes, unlike Candarelli et al (2014) and Gunter et al (2011).

Accommodation

Variables related to accommodation and co-habiting circumstances were significantly associated with suicidal outcomes in all papers that utilised it as a variable (Cook & Borill, 2013; Yu & Sung, 2015a; McCullumsmith et al, 2013). Residential instability demonstrated significant association with suicidal ideation amongst women (Yu & Sung, 2015a), and unsuitable accommodation or being homeless was significantly associated with staff judgements of increased suicide risk (Cook & Borill, 2013). McCullumsmith et al (2013) found that overall participants and white women who disclosed a suicide attempt had a higher likelihood of living in a shelter. Whereas, living alone was significantly associated with suicidal ideation amongst African-American men. The remaining eight papers did not utilise residential variables for association with completed suicide (Haglund et al, 2014; Phillips et al, 2019; Pratt et al, 2006), suicidal ideation or attempt (Brooker et al, 2021; Candarelli et al, 2014; Gunter et al, 2011; Yu & Sung, 2015a; 2015b).

Clinical variables

Depressive symptoms or disorder

Depressive symptoms were significantly associated with suicidal outcomes in all six papers that utilised it as a variable (Brooker et al, 2021; Candarelli et al, 2014; Cook and Borril et al, 2015; Gunter et al, 2011; Yu & Sung, 2015a; 2015b). However, depressive symptoms were operationalised differently across papers. Gunter et al (2011) reported depressive disorder was associated with suicidal ideation or suicide attempt, and the number of depressive criteria during their most severe episode

significantly differentiated the ideation and action group from the control group. Cook & Borrill (2013) found that current psychiatric problems including depression was associated with staff judgements regarding risk to self, with an effect size of ≥.3 and was included in the final logistic regression model that significantly predicted suicide risk judgements. Brooker et al (2019) and Candarelli et al (2014) found that individuals who screened for depression were more likely to have experienced suicidal ideation or attempt. Finally, Yu & Sung (2015a;2015b) reported that experiencing a major depressive episode increased the odds of suicidal ideation five-fold for men, and three-fold for women.

Anxiety symptoms or disorder

Anxiety symptoms were identified as a risk factor for suicidal ideation and suicide attempt in all three papers that utilised it as a variable (Brooker et al, 2021; Candarelli et al, 2013; Gunter et al, 2011). Candarelli et al (2013) reported anxiety disorder doubled the odds of suicidal ideation for individuals on probation when controlled for confounding variables. Brooker et al (2019) reported a significantly lower generalised anxiety score amongst individuals without history of suicidal thoughts or behaviour, compared to the ideation and attempt group. Finally, Gunter et al (2011) reported anxiety disorder was associated with suicidal ideation and attempt, of which differentiated group membership from the control group. Furthermore, anxiety disorder doubled the odds of suicide attempt, however was not significant in the multinomial model for suicidal ideation relative to no suicidal ideation/action (Gunter et al, 2011).

Any other psychiatric disorder

Psychiatric disorder was a significant risk factor in the four studies that utilised this as a variable (Brooker et al, 2021; Candarelli et al, 2014; Gunter et al, 2011; Haglund et al, 2014). Two papers reported substance use disorder as associated with completed suicide amongst supervised released prisoners (Haglund et al, 2014) and ideation and attempt amongst community corrections sample (Gunter et al, 2011). Candarelli et al (2014) reported bipolar increased the odds of suicidal ideation by

two-fold and ADHD increased likelihood of suicidal ideation by nearly nine-fold, even when both variables were controlled for confounding variables. However, this result should be interpreted with caution as a result of wide confidence intervals, and the small proportion of participants who screened positive for ADHD (Candarelli et al, 2014). Furthermore, the instruments used only screened for the presence of ADHD symptoms over the previous 6 months, as opposed to diagnostic criteria in the Diagnostic and Statistical Manual of Mental Disorders (DSM IV) (American Psychiatric Association 2000; Candarelli et al, 2014; Kessler et al. 2005).

Gunter et al (2011) was the only other paper to utilise ADHD as a dependent or predictor variable, and they found ADHD was associated with suicidal ideation or attempt when compared with the control group. Although Gunter et al (2011) utilised DSM criteria, this could vary regarding how strictly diagnostic criteria were adhered to. Gunter et al (2013) also found increased number of DSM-IV criteria for antisocial personality disorder and related individual criteria of deception, impulsivity and irresponsibility as associated with suicidal ideation and attempt. Similarly, Brooker et al (2019) reported increased SAPAS scores, a screening tool for personality disorder, amongst attempt and ideation groups compared to participants with no history. It is of note Haglund et al (2014) did not identify affective disorder and personality disorder as risk factors (Haglund et al, 2014), however this could be a result of low prevalence of these diagnoses among supervised individuals who completed suicide.

Psychiatric treatment

Psychiatric treatment in the form of medication or inpatient treatment was identified as a risk factor for suicidal outcomes in all six papers that utilised it as a variable (Brooker et al, 2021; Cook & Borill, 2013; Haglund et al, 2014; McCullumsmith et al, 2013; Yu & Sung, 2015a; 2015b). Three papers identified inpatient treatment as a risk factor for suicidal ideation amongst men and women (Yu & Sung, 2015a; 2015b) and suicidal ideation or attempt (Gunter et al, 2011). Two papers reported psychiatric medication increased likelihood of staff judgements of

increased suicide risk (Cook & Borrill, 2013) and suicidal ideation and attempt for men and women (Gunter et al, 2011; McCullumsmith et al, 2013). However, in one study, risk was doubled for African-American men and women compared with White men and women respectively (McCullumsmith et al, 2013). Brooker et al (2019) found that previous engagement with psychological services was related to either suicidal ideation or attempt. Candarelli et al (2014) stated they collated data on inpatient treatment, however this was not reflected in analysis. Finally, all participants of Haglund et al (2014) received some form of inpatient treatment following suicide attempt, however previous inpatient stay was not discerned for its association with suicide risk.

Illicit substance misuse

Illicit substance misuse was identified as a risk factor for suicidal outcomes in all seven papers that utilised it as a variable (Candarelli et al, 2014; Cook & Borril, 2013; Haglund et al, 2013; Gunter et al, 2011; McCullumsmith et al, 2013; Yu & Sung, 2015a; 2015b). Three papers identified substance use disorder as increasing the odds of suicidal outcomes (Candarelli et al, 2014; Haglund et al, 2014; McCullumsmith et al, 2013). Candarelli et al (2014) reported substance use disorder increased the likelihood of suicidal ideation by four-fold even when controlled for confounding variables. McCullumsmith et al (2013) reported substance misuse dependence as significantly associated with suicidal ideation and attempt amongst men and women, irrespective of race, and Haglund et al (2014) reported that when substance use disorder was excluded from psychiatric history, the association with completed suicide disappeared; hence demonstrating the strength of this association.

Illicit substance misuse more generally was identified as a risk factor for suicidal outcomes in four additional papers (Cook & Borrill, 2013; Gunter et al, 2011; Yu & Sung, 2015; Yu & Sung, 2014). Cook & Borrill (2013) found historical and current drug misuse and current drug misuse was positively associated with staff's judgements of suicide risk for people on probation. Whereas, Yu & Sung (2015a) found that use of an illicit drug in the previous month was associated with suicidal ideation amongst

men on probation, although this was not significant for women. However, in their other paper regarding predictors of suicidal ideation, use of an illicit drug in the past month increased odds of suicidal ideation amongst all parolees by 2-fold (Yu & Sung, 2015b). Finally, Gunter et al (2011) found that increased number of substance use disorders and abuse of cocaine, stimulants and tobacco dependence were associated with the presence of suicidal ideation or attempt.

Psychological distress

Psychological distress was identified as significant for association with suicidal outcomes in all three papers that utilised distress as a variable, of which was measured with validated tools (Brooker et al, 2021; Yu & Sung, 2015a; 2015b). Yu & Sung (2015a) found serious psychological distress increased risk of suicidal ideation for men by 5-fold, and women 4-fold, and for all parolees within their other study (Yu & Sung, 2015b). Brooker et al (2019) found higher proportions of the attempt and ideation group had a severe psychological distress score, as measured by the K6, comparative to participants with no history; whereby the mean distress score was significantly lower. However, differences were not significant between ideation and action groups.

Previous victimisation

All three papers that utilised previous victimisation as a variable identified this as associated with suicidal outcomes (Cook & Borrill, 2013; Gunter et al, 2011; McCullumsmith et al, 2013). Cook & Borrill (2013) found that childhood abuse was associated with staff judgements regarding suicide risk, of which demonstrated an effect size of ≥.3 and was included in the final logistic regression model that significantly predicted suicide risk judgements. McCullumsmith et al (2013) reported that previous physical or sexual abuse increased odds of suicide attempt nearly seven-fold and ideation nearly four-fold of which remained significant across all race and sex groups, however the odds were higher for African-American men and women comparative to White men and women. Finally, Gunter et al (2011) identified traumatic life experience as significantly differentiating ideation and action

group from the control group, and the presence of childhood trauma remained significant within the multinomial model to predict the presence of suicidal ideation or previous attempt. Although the remaining seven papers did not measure previous victimisation, it is likely this would be prevalent amongst the samples.

Criminogenic variables

Criminogenic variables were explored in seven papers (Brooker et al, 2009; Cook & Borill, 2013; Gunter et al, 2011; Haglund et al, 2014; Phillips et al, 2018; Yu & Sung, 2015a; 2015b). However, sparse significant findings were found. Violence perpetration was the only variable to receive more than two hits across included papers, albeit operationalised differently (Cook & Borrill, 2013 and Yu & Sung, 2015a). Cook & Borrill (2013) found small but statistically significant differences amongst violent offenders increasing likelihood of staff judgements regarding increased suicide risk. However, this did not remain significant within the regression model; thus indicating its contribution was not significant once the contribution of sociodemographic and clinical variables were accounted for. Yu & Sung (2015a) found that women who perpetrated violence with intent to seriously harm them increased likelihood of suicidal ideation by nearly two-fold. However, offence type was not captured within this paper, and this finding was not significant in their other paper regarding predictors of suicidal ideation amongst parolees (Yu & Sung, 2015b). It is proposed significant hits were not found amongst criminogenic variables as in some instances offence related variables were collated, yet not included in analysis (Candarelli et al, 2014), or offence related variables were not considered whatsoever (Candarelli et al, 2014; McCullumsmith et al, 2013; Pratt et al, 2006). Insignificant findings related to offence type could be a result of multiple offence categories, hence reducing the likelihood of meaningful analysis (Brooker et al, 2021; Haglund et al, 2014). Furthermore, there was a small proportion of violent offenders in some samples (Brooker et al, 2021; Gunter et al, 2011). Moreover, order type perhaps did not receive multiple hits as all participants in Pratt et al (2007) and Haglund et al (2014) were under post-sentence supervision. Two papers did not report significant

associations between order type and suicidal outcomes (Brooker et al, 2009; Gunter et al, 2011), and although Cook & Borrill (2013) collected data on order type, this did not comprise data analysis. In addition, four papers did not refer to order type within their research, however notably these were all US participants and may reflect differences within international criminal justice settings (Candarelli et al, 2014; McCullumsmith et al, 2013; Yu & Sung, 2015; 2015b).

Temporal variables

Only three papers explored recent release from custody, and all concerned completed suicide as the outcome (Haglund et al, 2014; Phillips et al, 2018; Pratt et al, 2006). Pratt et al (2007) identified 21% (N=79) suicides took place in the first 28 days post release, and 51% (N=195) within the initial four months indicating that recent release from custody increases risk of suicide. Phillips et al (2018) also suggests an increased risk of suicide following custodial release, with the number of deaths per week decreasing gradually over a period of a year. Haglund et al (2014) reported the highest incidence rate for suicide during the first 28 days, of which the rate ratio was 58 comparative to general population controls. It is likely remaining papers did not consider temporal variables as the population group did not concern solely those released from custody whilst under community supervision.

Discussion

Table 2 summarises risk factors outlined in the review.

Table 2: *Summary of identified risk factors*

Variable category	Variable
Sociodemographic variables	Women
	Age (30+)
	Lack of education qualification or status
Clinical variables	Depressive symptoms or disorder
	Anxiety symptoms or disorder
	Any other psychiatric disorder
	Psychiatric treatment
	Illicit substance misuse
	Psychological distress
	Previous victimisation
Criminological variables	Violence perpetration
Temporal variables	Recent release from custody

The review yielded 10 studies, however studies varied regarding the range of sociodemographic, clinical, criminogenic and temporal risk factors they investigated for association with suicide risk. Research that explored risk factors associated with completed suicide produced little or no data regarding clinical risk factors (Phillips et al, 2018; Pratt et al, 2006; Haglund et al, 2014). Therefore, although the outcome variable increased quality rating of these studies, they did not yield as many results as other papers concerning the presence of suicidal ideation and attempt. However, it is proposed variables that received hits on all papers they were utilised should gain particular attention. This is particularly prevalent amongst clinical variables, whereby; depressive symptoms, anxiety symptoms, psychiatric disorder, psychiatric treatment, illicit substance misuse, psychological distress and previous victimisation were identified as risk factors amongst all papers that utilised these measures (Brooker et al, 2021; Candarelli et al, 2014; Cook & Borrill et al, 2013; Gunter et al, 2011; Haglund et al, 2014; McCullumsmith et al, 2013; Yu & Sung, 2015a; 2015b). However, previous victimisation and distress were only measured in three papers, and therefore are pertinent to consider for future research. Overall, clinical risk factors appear critical in identifying suicide risk in probation populations, however, they are insufficient on their own (Beautrais, 2004; Candarelli et al, 2014). However,

the review encompassed environmental and psychosocial factors that can influence suicide risk outcomes and should be kept in mind.

The most frequently identified sociodemographic variables were white ethnicity and female gender. Much work regarding risk assessment for suicide identifies Caucasian race as a risk factor for suicidal ideation and suicide-related behaviour in community samples (Gunter et al, 2011; Kessler et al, 1999). Furthermore, the findings support recent data that indicates female offenders in the community are significantly more at risk of suicide (11 times greater than general population) in the community compared to men who have offended (four times greater than general population) (Office of National Statistics, 2023b), of which contrasts findings of statistics in the general population where men are more at risk comparatively (Office of National Statistics, 2024). Despite this, three papers that concerned completed suicide identified women as more at risk (Haglund et al, 2014; Phillips et al, 2018; Pratt et al, 2006). However, it is important to hold in mind that despite completed suicide being the outcome, this also included open verdicts (Pratt et al, 2006), unnatural death with undetermined intent (Haglund et al, 2014) and self-inflicted deaths (Phillips et al, 2018), and although Pratt et al (2006) excluded accidental deaths, it is impossible to ascertain that data within these papers are not accidental or drug related deaths, of which we know is the leading cause of self-inflicted deaths for offenders in the community (Office for National Statistics, 2023b). Despite this, Yu & Sung (2015a) proposed that females on probation may experience more life stressors than men. This is illustrated by their findings that females on probation had a higher prevalence of residential instability, psychological distress or a major depressive episode; all of which were identified as risk factors in this review and provide modifiable risk factors that can be targeted within probation supervision (Yu & Sung, 2015a).

The results indicate that individuals aged 30+ on probation are more at risk of completed suicide. However, it is possible that older individuals who completed suicide may have attempted suicide historically, and therefore we should not overlook the risk of all age groups. Particularly, as the younger population of those

supervised on probation may demonstrate more aggressive and impulsive traits, of which have been identified as risk factors for suicide in forensic populations (Dumais et al, 2005). Although these traits may ameliorate with age, older individuals may be impacted by the difficulties of society reintegration following release from custody more acutely than their younger counterparts (Pratt et al, 2006). Furthermore, as previously outlined, we cannot ascertain with confidence that incidents of completed suicide were not accidental or drug-related.

The review demonstrates that during the first 12 months after release from custody there is an increased suicide risk. It has been proposed individuals who were incarcerated may have proportionally more risk factors for suicide, such as; substance misuse, mental illness, and socioeconomic deprivation (Bland et al, 1998; Fazel & Danesh, 2002; Joukamaa, 1995). Consequently, individuals who have been imprisoned already demonstrate high risk of suicide, and perhaps the interaction of these risk factors after transition into a community setting may further conflate risk to self. The initial stages following release can be overwhelming, and individuals may experience exclusion by their release community, as well as mutually re-enforcing barriers such as; lack of accommodation, lost contact with families, and lack of paid employment upon release (Fox et al, 2005; Pratt et al, 2006). Furthermore, increased levels of drug use, violence and low staffing levels in prisons have been reported (Ministry of Justice, 2017), of which may influence the risk of people dying by suicide on release. Finally, as completed suicide papers included self-inflicted deaths (Phillips et al, 2018), unnatural death with undetermined intent (Haglund et al, 2014) and an open verdict at coroner's inquest (Pratt et al, 2007), and we know that drug-related deaths comprise 49% of self-inflicted deaths in offenders in the community (Office of National Statistics, 2023b), it is likely that overdose will have contributed to deaths that have been classified as suicide, particularly as individuals are at higher risk of overdose following custody due to a reduction in tolerance (Bingswanger et al, 2012).

Psychiatric diagnoses, symptoms and medication or treatment were prevalent risk factors for suicide. The association of depression with suicidal ideation is well documented among forensic and general populations, and depression is identified as a strong predictor of suicide in prison populations (Baillargeon et al 2009; Gunter et al, 2011; Sattar, 2003; Joukamaa, 1998). Suicidal ideation and attempt comprise DSM IV criteria for major depressive disorder (American Psychiatric Association 2013; Kessler et al, 2005) and demonstrate association with major depression more than any other mental health disorder (Candarelli et al, 2014). This could account for the prevalence of depressive symptoms demonstrated in the review. In addition, anxiety, bipolar, ADHD and antisocial personality traits and substance use disorder were identified as specific psychiatric diagnoses that may increase suicide risk. Individuals under probation have increased mental health needs comparative to the general population (Brooker et al, 2014; Brooker & Ramsbotham, 2014; Gunter et al, 2011; HM Inspectorate of Probation, 2021; Kariminia et al, 2007; Pratt et al, 2010), and these findings further highlights the significance of sufficient mental health provision for this high-risk group.

Childhood and adulthood physical and sexual abuse were identified as risk factors associated with suicidal outcomes, as also demonstrated in general and forensic populations (Brodsky et al, 2001; Howard et al, 2003; Joiner et al, 2007, Swogger et al, 2010). Previous research has identified the presence of distress in offenders who experienced childhood abuse (Clements-Nolle, et al, 2009; Milligan & Andrews, 2005), another risk factor identified within this review. Biological theories hypothesise childhood abuse may encourage attenuated serotonergic activity, of which can impact impulsivity, hence resulting in a greater propensity to act on aggressive impulses towards one's self (Candarelli et al, 2014). Furthermore, females who have offended have demonstrated disproportionately higher levels of intimate partner violence and childhood abuse (Walsh et al, 2011), thus this may heighten their risk of suicidal tendencies (Patel et al., 2011).

Substance misuse was identified as prevalent risk factor in this review. Substance misuse may increase the likelihood of suicide attempts due to difficulty shifting attentions, reducing inhibitory control and hence increasing impulsivity (Morley et al, 2008). A high prevalence of substance has been documented amongst individuals on probation (Brooker et al, 2017), the association of substance dependence and suicide is well documented in the criminal justice system and general population (Borges et al, 2000; Cottler et al., 2005; Håkansson et al., 2010; McCullumsmith et al, 2013; Wilcox et al, 2004). Furthermore, as previously highlighted, drug related deaths are likely to account for a significant proportion of completed suicides in this review. This finding underscores the importance of specialist substance misuse partner agencies within probation.

Although the analysis regarding offence related variables was sparse, results were fairly consistent with prison-based research regarding violent offending and increased suicide risk (Cook & Borril, 2013; Fazel et al, 2008; Sarchiapone et al, 2009; Zhong et al, 2021) and research based on community offenders who were not supervised by probation (King et al, 2015; Pratt et al, 2006; Webb et al, 2012). This finding also compliments dual harm literature that purports individuals who harm themselves are at increased likelihood to harm others (Slade, 2019). However, much of the data did not allow analysis according to criminogenic variables due to lack of detail in the data set. This requires further research, as the heterogeneity of the sample could lead to a dilution of high-risk groups (Fazel et al, 2017). Although offence related variables are key areas for further exploration, they are dependent upon data being available (Fazel et al, 2017; Phillips et al, 2018). However, it is worth noting that an explanation for less prevalence of offence-related variables may be that suicide risk among people on probation is significantly reduced when clinical and sociodemographic risk factors were accounted for (Haglund et al, 2014).

Strengths and weaknesses of evidence included

Key weaknesses in the evidence incorporated in this review is that not all risk factors were investigated across all studies and predictor and outcome variables were all operationalised differently. For example, Cook & Borrill (2013) utilised staff judgement of suicide risk as the outcome group. Opinion could vary amongst probation practitioners, however research based on the precise setting of probation supervision in the UK was an important addition to the review and risk factors identified by probation practitioners were consistent with existing research. Some studies solely explored risks associated with suicidal ideation (Candarelli et al, 2014; Yu & Sung, 2015a; 2015b), however results were deemed appropriate as suicidal ideation is often the first step towards suicide. There was even variance in operationalisation of completed suicide (Haglund et al, 2014; Phillips et al, 2018; Pratt et al, 2006). Haglund et al (2014) explored suicides that led to an episode of inpatient care, Pratt et al (2007) measured suicide as confirmed by death certificate or coroner's inquest, Phillips et al (2018) used information probation records that were 'apparent on the basis of information received'. Furthermore, Haglund (2014) included unnatural deaths with undetermined intent, Phillips et al (2018) included self-inflicted deaths and Pratt et al (2007) included an open verdict at coroner's inquest. However, analysis was conducted based on the availability of evidence that was available.

Data collection varied across studies, with some research obtained retrospectively by patient self-report (Candarelli et al, 2014; McCullumsmith et al, 2013; Yu & Sung, 2015a; 2015b) or by mental health professionals (Brooker et al, 2021; Gunter et al, 2011). Data from surveys and self-report may suffer from underreporting due to social desirability bias, recall bias and inaccurate symptom recording and not all papers utilised structured measures to assess risk factors or suicide risk (Yu & Sung, 2015a; 2015b). In addition, some cross-sectional papers can only deduce correlational analyses, and prove difficult to establish temporal causal relationships (Candarelli et al, 2014; Cook & Borrill, 2013; McCullumsmith et al, 2013). Finally, some papers relied on volunteers to partake in the study. Reliance on volunteers

may have also resulted in advertent sampling of individuals who were resilient and healthy (Candarelli et al, 2014; Gunter et al, 2011; Yu & Sung, 2015a; 2015b).

Small sample sizes at times posed difficulties in further analyses, as lack of statistical power also meant some possibly key factors could not be considered (Candarelli et al, 2014; Haglund et al, 2014; Phillips et al, 2019; Pratt et al, 2006). It is important to note, however, that many studies did include sufficient sample sizes and incorporated validated instruments (Brooker et al, 2021; Candarelli et al, 2014; Cook & Borrill, 2013 Gunter et al, 2011; Haglund et al, 2014; Phillips et al, 2018; Pratt et al, 2006). Despite these limitations, the review provides an updated understanding of an explanation for risk factors for suicide amongst people on probation that provide some explanation into the level of suicide observed. Furthermore, this review is the first of its time to identify risk factors relevant to the assessment of suicide risk amongst supervised individuals in the community who have offended.

The systematic review had stringent inclusion and exclusion criteria to ensure studies included were relevant to the topic of research, in that samples included were adults supervised on probation. However, criticism of the systematic review could be posed in relation to its exclusion of qualitative research. The rationale to exclude qualitative research was due to difficulties synthesising data. Such heterogeneity in data collection and analysis can make it challenging to derive clear, consistent results, and qualitative research findings would typically only generate one hit from the paper they were derived from, and hence not be included in final analysis that encompassed risk factors with three hits or more. The rationale for including papers with three hits or more in analysis was to identify risk factors that were prevalent across research papers and hence could arguably hold most relevance for practitioners in the field. Risk factors that appear in multiple studies indicate more consistent evidence, of which strengthens the reliability of findings and indicates the association between the risk factor and outcome is not random or isolated (Henderson et al, 2010). Furthermore, qualitative research derives narrative data, therefore the researcher could not operationalise objective and measurable

outcomes from comparative data to determine whether a risk factor was present or absent. However, as a result of qualitative research exclusion, key risk factors pertinent to probation supervision (i.e. missed appointments and breaches; Borrill et al, 2017) were not incorporated into analysis.

A further criticism of the review is the inclusion of international studies derived from countries with varying probation service models, resources and legal frameworks that differentiate from context in the United Kingdom (UK). Hence, these studies may have reported varying risk factors due to differences in how probation systems operate, including; intensity of supervision, mental health provision and the availability of post release support (Hamai et al, 2005). These differences are likely to influence suicide rates and risk factors, of which complicate the ability to generalise findings to the UK context (Bolton et al, 2015). In addition, stigma regarding mental health, and risk assessment can vary significantly between countries (Esqueda, 2010; Schmidt et al, 2019). There is likely to be varying cultural norms regarding help-seeking behaviours and hence differences in societal support systems and healthcare access may also affect suicide risk (Reynders et al, 2015). Furthermore, it is likely that participants in international literature will experience different stressors or protective factors compared to individuals in the UK (Chu et al, 2010). Although some risk factors may be deemed universal, such as mental health difficulties (Chu et al, 2010), the relative importance of these may differ. International studies might highlight risk factors that are less relevant to UK, or conversely, overlook key risk factors pertinent to the population of interest. Despite these shortcomings, inclusion of international papers enabled findings to draw on a wider range of data, potentially improving the overall robustness of findings to identify common risk factors that are applicable across different contexts. However, it is important to maintain a critical lens when applying the results to the UK context. Generalising findings without careful consideration of contextual differences could lead to inappropriate policy recommendations or interventions. Although applying findings from countries with different cultural attitudes toward mental health and suicide could obscure the unique factors influencing suicide risk in UK probation

populations, inclusion of these studies was deemed appropriate due to scant research in the field.

Another criticism of the systematic review could be that there were various sub-groups included in findings (i.e. men, women, individuals serving community sentences and recently released individuals). Combining men and women in the systematic review may obscure important gender-specific risk factors (Thompson & Light, 2010). In addition, recently released individuals experience unique stressors, such as; unstable housing and difficulties with transition from custody, of which is likely to contribute to increased risk (Pratt et al, 2010), however may vary comparative to individuals who remained in the community. Overall, the inclusion of diverse sub-groups may have obscured key differences in suicide risk factors and make it difficult to delineate which factors are most relevant for specific populations. This could dilute the strength of evidence related to any one sub-group, leading to overgeneralisation of findings, where the unique needs of one group may be overshadowed by the larger group's trends. However, inclusion of sub-groups was deemed appropriate due to scant research in the field.

Although a criterion of the review was to exclude self-inflicted deaths that were not documented as suicide, this proved difficult due to paucity of research in the field. It is of note the only three papers that considered completed suicide were not strictly suicide only outcome groups. Although Phillips (2018) used the term 'suicide' as their outcome, they acknowledged how self-inflicted deaths were included in the data. However, as acknowledged throughout the thesis, data regarding suicide deaths is incorporated within self-inflicted deaths, and at times difficult to disentangle. Despite this, the findings do not discern what proportion of these deaths were suicide or an accidental drug death. However, Phillips (2018) was included due to its relevance to the population of interest, scarcity of research in the field and because suicide was identified as the outcome. In addition, Pratt (2006) included cases with an 'open verdict', although cite this is most conventionally defined as suicide (Pratt, 2006). Although the paper excluded 'accidental deaths', this still poses difficulties, as

there is insufficient evidence to conclude how the death came about. Furthermore, Haglund et al (2014) included certain suicide and unnatural death with undetermined intent in their definition of suicide. However, it is pertinent to hold in mind that only 38% of self-inflicted deaths amongst offenders in the community accounted for suicide (Office of National Statistics, 2023b), and therefore these findings should be interpreted with caution regarding their applicability to suicide specifically. Furthermore, we know that the majority of self-inflicted deaths amongst individuals being supervised in the community are a result of drug overdose deaths at 49% (Office of National Statistics, 2023b), and therefore targeted intervention regarding substance misuse and harm reduction could significantly help to safeguard this population.

Consideration of findings in the wider context of their relationship to practice, theory and the population of interest

Individuals on probation demonstrate a higher risk of suicide compared to the general population (Sirdfield et al, 2020). The review highlights the significance of various risk factors, indicating that individuals on probation do not experience suicide risk in isolation, but as part of a complex interaction of personal and environmental factors that should be monitored over time. For younger people on probation, while suicide attempts may be more frequent, completed suicides tend to occur more in older age groups. This suggests the need for age-specific strategies: for younger probationers, addressing impulsivity and emotional dysregulation may reduce attempts (Mai et al, 2021), while older probationers may need more support in coping with chronic stressors such as substance misuse or long-term psychological distress (Courtney & Maschi, 2012).

The findings provide critical information for practitioners working with people on probation. The identification of specific sociodemographic, clinical and criminogenic variables linked to suicide risk can help practitioners hold in mind vulnerabilities for suicidality across an individual's probation supervision, and also key areas for

intervention. The findings highlight how support with education, employment and addressing accommodation issues are equally vital to support people on probation in building their life in the community and may act as a protective factor against risk of suicide (Mclean, 2020). However, this will likely to require liaison with third party sectors. Moreover, the high prevalence of associated clinical variables demonstrates how mental health services need to be integrated into probation supervision. Probation officers may require training to identify signs of mental health deterioration, and have clear referral pathways so individuals can access appropriate care. Within these services, regular screening for depression, anxiety and other psychiatric disorders could support development of appropriate intervention pathways (Bolton et al, 2015). The findings also underscore the necessity of integrating substance use intervention within probation services, and furthermore, given that a history of victimisation, particularly childhood abuse, was associated with suicide risk, it is important probation officers have an awareness of trauma informed care and appropriate intervention pathways (McAnallen & McGinnis, 2021). Finally, criminogenic variables such as offense type did not demonstrate significance, but temporal factors like recent release from custody were strongly associated with suicide risk, particularly within the first few months post-release. This finding emphasizes the critical need for targeted post-release support, including mental health services and reintegration programs. Early intervention immediately after release and through the gate services could significantly reduce suicide risk during this vulnerable period (MacInnes et al, 2020).

Theory

Interpersonal Theory of Suicide (ITS; Joiner, 2005)

According to the ITS (Joiner, 2005), suicidal behaviour arises from the following: perceived burdensomeness and thwarted belonging, coupled with an acquired capability for suicide. The elevated risk for women in probation settings could indicate perhaps they experience higher levels of thwarted belongingness in these environments, whereby perhaps they feel they are not meeting societal expectations

of which could lead to feelings of exclusion or social disconnection (Mendoza, 2023). A sense of thwarted belonginess could be further demonstrated by the association with suicidal outcomes and accommodation instability; of which could perpetuate social isolation or displacement (Calati et al, 2018). Furthermore, criminogenic variables such as release from custody may heighten the risk of suicide due to difficulties with disconnection and social reintegration, hence possibly perpetuating thwarted belongness (Nazem, 2013). Finally, perceived burdensomeness has been found as a significant mediator of victimisation and suicidal ideation (Leslie et al, 2024).

The Integrated Motivational-Volitional model (IMV Model; O'Connor et al, 2011)

The Integrated Motivational-Volitional model (IMV Model; O'Connor et al, 2011) outlines a pathway from suicidal thoughts (motivational phase) to suicidal behaviour (volitional phase), highlighting the role of defeat, humiliation, entrapment and access to means in suicide progression. The robust association between depressive symptoms, anxiety and suicidal behaviour could correspond to the motivational phase; whereby emotional distress and feelings of entrapment may accompany depression and anxiety, as demonstrated in previous research (Siddaway et al, 2015). Depression and anxiety could also exacerbate perceptions of defeat or entrapment within a probation system (Phillips et al, 2019). In addition, substance use disorder and psychiatric treatment were consistently found to increase suicide risk. In the IMV model, these variables might increase volitional factors, for example; access to means and impulsivity (O'Connor et al, 2011). Criminogenic variables, such as violent history, while not consistently associated with suicide risk, could still function as volitional factors by contributing to physical pain sensitivity and fearlessness about death (O'Connor et al, 2011).

The Three-Step Theory (3ST; Klonsky et al, 2015)

The Three-Step Theory (Klonsky & May, 2015) posits that suicidal ideation results from escalating pain and hopelessness, with progression to suicidal behaviour depending on connectedness and capability. Psychological distress and previous

victimisation were identified as strong correlates of suicidal ideation, of which have both been associated with feelings of pain and hopelessness (Ballard et al, 2022; Coker et al, 2002). Furthermore, victimisation and could contribute to an acquired capability for suicide by desensitising individuals to pain and reducing the fear of death (Coker et al, 2002). This aligns with 3ST's assertion that an individual's capacity to attempt suicide must increase for suicidal ideation to translate into action.

Implications

Each year probation practitioners are faced with thousands of individuals who have offended and are at increased risk of suicide across the country (Yu & Sung, 2015a). Therefore, its critical for probation practitioners to be effective gatekeepers, and be trained to recognise people on probation with risk factors for suicide with appropriate interventions for non-clinical professionals (Yu & Sung, 2015a). Training for probation practitioners could increase understanding of risk factors, provide information regarding referrals to substance misuse and mental health professionals and through-the-gate resettlement services. However, responsibility should not lie on probation practitioners alone. The National Probation Service should encourage mental health partnership for assessment, intervention and consultation. Furthermore, at-risk probationers could be identified through a case management system to promote increased availability to resources and services (Guydish, 2011; Yu & Sung, 2015a).

Healthcare is fundamental regarding suicide prevention. It is well documented that individuals on probation have increased physical and mental health needs comparative to the general population (Brooker et al, 2012). However, it is reported that engagement with health services for people who have offended is incommensurate in relation to their likely level of need. Inadequate healthcare provision for people on probation could be a contributing factor to increased suicide risk amongst this population (Brooker et al, 2012; Phillips et al, 2018). It is proposed that beyond mental health partnership, primary care services can also play an

integral role (Candarelli et al, 2014). Primary care professionals can support psychiatric treatment and provide clinical intervention to reduce suicide risk (Candarelli et al, 2014; Cunningham, 2009; James et al 2004). Furthermore, current or previous probation status could indicate a need for additional mental health or consideration of assessment for risk of harm to self (Candarelli et al, 2014). However, in light of people on probation can often facing barriers in accessing healthcare (Brooker et al, 2012; 2017), they may require further support.

Probation supervision requirements illicit an effective mechanism for screening and early intervention (McCullumsmith et al, 2013). However, there is need for clarification and further discussion regarding the roles and responsibility of probation practitioners regarding the limits of duty of care and assessing and managing non-criminogenic needs like suicide risk (Cook & Borill, 2013). Although probation supervision is often focused on monitoring risk and violations of license or order conditions (Seiter & West, 2003; Solomon et al, 2008), probation is paramount to help people adhere to these conditions so they can desist from offending behaviour (Candarelli et al, 2014). Threats of homelessness, lack of employment and being socially isolated are significant life stressors that seemingly impact not only reoffending, but suicide risk (Yu & Sung, 2015a), and are amenable to change through stabilisation support within supervision.

Although the majority of individuals who experience suicidal ideation will not attempt or complete suicide, addressing suicidal ideation is a clear initiative to prevent suicidal outcomes (Yu & Sung, 2015a). If individuals with specific mental disorders, such as; depression, anxiety, substance use disorders and ADHD are identified and referred for psychiatric treatment, this could help reduce suicide risk. The results in this review highlight risk factors that should be held in mind when assessing suicide risk in probation settings, however alone it is not enough. It is paramount that follow-up is completed with those who have expressed suicidal ideation or disclosed a suicide attempt (Sabbatine, 2007; Sorenson & Vittes, 2008; Yu & Sung, 2015a). Probation practitioners require support to feel confident to monitor,

enquire and discuss concerns around suicide risk, and may benefit from efficient preventative screening tools of which have been validated among forensic populations (Perry et al, 2010).

Gaps in research identified from results of the review

The review outlines various gaps in research. Firstly, there are risk factors that demonstrated association with a suicide outcome in all papers they were utilised, however the majority of papers did not utilise the risk factor as a variable. Regarding sociodemographic variables, residential instability received hits in all papers whereby the risk factor was utilised (Cook & Borrill, 2013; McCullumsith et al, 2013; Yu & Sung, 2015a), however the risk factor was not used as a variable in 70% of papers. The same proportions apply to the following clinical variables; anxiety (Brooker et al, 2019; Candarelli, 2014; Gunter et al, 2011), psychological distress (Brooker et al, 2019; Yu & Sung, 2015b; Yu & Sung, 2015a) and previous victimisation (Cook & Borrill, 2013; Gunter et al, 2011; McCullumsmith et al, 2013). Any other psychiatric disorder received hits in all papers that utilised it as a variable (Brooker et al, 2019; Candarelli, 2014; Gunter et al, 2011; Haglund et al, 2014), however was not utilised in 60% of papers. This highlights gaps in research whereby key risk factors have been arguably overlooked. Given their relevance, more research on these variables is warranted to understand their potential roles in suicide risk. More notably, self-harm only featured in two studies (Cook & Borrill, 2013; Haglund et al, 2014), despite its repeated association with suicidal outcomes (Knipe et al, 2022) and theory that denotes self-harm can habituate fear and pain regarding self-inflicted violence (Klonsky et al, 2015). Finally, it is proposed there are distinct differences between those experience suicidal ideation and individuals who act on these thoughts and attempt suicide. This has been demonstrated in research regarding custodial settings and are applicable to probation settings (Brooker et al, 2021; Favril & O'Connor, 2019; Favril et al., 2020a; Favril et al., 2020b), however the vast majority of studies in the review did not conduct separate analysis for ideation and attempt.

While depressive symptoms, anxiety, psychiatric disorders, and substance misuse were consistently identified as significant risk factors, studies that investigated completed suicides lacked detailed data on clinical variables (Phillips et al, 2018; Pratt et al, 2006; Haglund et al, 2014), therefore more in-depth research on clinical factors in completed suicides is needed to draw more robust conclusions. Furthermore, the review highlights that the first 12 months after release from custody present heightened suicide risk (Haglund et al, 2014; Pratt et al, 2007; Phillips et al, 2018). It is likely factors such as substance misuse and mental illness play critical roles (Bland et al, 1998; Fox et al, 2005), however, further research could be beneficial to explore how these factors interact post-release and exacerbate suicide risk. While substance misuse is a well-established risk factor, the specific mechanisms through which it influences suicide risk, particularly in the probation population, are less explored. Finally, there is sparse analysis regarding offence-related variables, despite consistent findings from prison-based research indicating that violent offending is associated with higher suicide risk (Cook & borrill, 2013; Fazel et al, 2008; Slade, 2019). Further research would be beneficial to understand how criminogenic factors interact with clinical and sociodemographic risk factors in probation populations.

Recommendations for future research

The paucity of research regarding suicide risk in probation highlights the need for further research to establish suicide rates and related risk factors in probation populations and could incorporate comparison with alterative relevant vulnerable groups such as the prison population or community psychiatric population (Cook & Borrill, 2013). Although it is important to not underestimate suicide risk, it would be of benefit for future studies to look solely at completed suicide as opposed to also incorporating self-inflicted deaths. This would enable the relationship between suicide and associated risk factors to be more rigorously established. Attention should also be further paid to unique characteristics and risk features of individuals who die by drug-related deaths, so appropriate support can be obtained to reduce risk of death (Slade et al, 2024).

Research could also examine points of access to healthcare and consider how probation practitioners can assist in addressing the mental healthcare of people on probation (Candarelli et al, 2014). In addition, research to identify effective interventions in suicide prevention among people on probation could be of benefit, alongside the role of psychiatric treatment, risk assessment and initiatives that support transition and reintegration into the community following prison release (Haglund et al, 2014). Furthermore, offence related variables were often not captured and outcome variables were all operationalised differently, which poses difficulties directly comparing findings from studies. However, given the severity of the research topic, perhaps government agreed guidelines need to be considered for what constitutes suicidal outcomes in research.

Research exploring the perspectives of people on probation and contributing factors for suicidal tendencies could be beneficial to inform suicide prevention. Specifically, to consider independent variables influencing the progression from suicidal ideation to suicide attempt. Given the wide pool of risk factors, this could differentiate individuals most likely to engage in a suicide attempt and could delineate individuals most in need of suicide prevention resources. It is proposed there are distinct differences between those experience suicidal ideation and individuals who act on these thoughts and attempt suicide. This has been demonstrated in research regarding custodial settings and are applicable to probation settings (Brooker et al, 2021; Favril & O'Connor, 2019; Favril et al., 2020a; Favril et al., 2020b), however the vast majority of studies in the review did not conduct separate analysis for ideation and attempt. A study that utilised the ideation-action model would be of benefit in identifying those at highest risk for intervention in probation service and could encompass relevant risk factors identified in this review.

Conclusion

The review has provided an up-to-date synthesis on research of risk factors associated with suicidal outcomes amongst individuals under community supervision

and has encompassed a comprehensive characterisation of associated sociodemographic, clinical and criminogenic variables. The findings of the review have potential to update good practice and promote staffs' knowledge and confidence regarding risk factors relevant to the assessment of suicide risk and provide indication of need for empirically supported individualised suicide prevention programmes (Cook & Borill, 2013; McCullumsmith et al, 2013). However, probation do not have surplus resources to manage these problems. Therefore, responsibility should be shared amongst probation, prison and community services to facilitate integrated, quality resettlement support and care for those on probation (Pratt et al, 2006).

The review indicates that effective and efficient ways to assess suicidality is needed for individuals on probation. Supervision requirements provide an opportunity to identify, signpost and facilitate interventions to this vulnerable group who are evidently at increased risk of suicide. Probation practitioners require training to manage and effectively communicate suicide risk concerns; of which could significantly reduce suicide rates amongst the probation population. Finally, future research regarding suicide risk in probation should be prioritised to ensure individuals on probation receive the attention they desperately need and deserve. Therefore, policies can be implemented that aim to reduce suicide rates amongst the probation populations, and ambitions set out by the National Probation Service and Ministry of Justice can be met (Department of Health and Social Care, 2012; National Probation Service, 2019; Phillips et al, 2018).

Chapter Three: Risk factors for suicidal ideation and suicide attempt amongst men on probation

Abstract

Objective: To explore sociodemographic, criminological and clinical differences between men on probation who have; attempted suicide, experienced solely suicidal ideation and have not experienced suicidal thoughts or behaviour, and to develop a tool that could identify risk-based vulnerabilities for suicide and indicate individuals who may require a suicide assessment.

Methods: A 39-item Offender Assessment System (OASys) collated data on 314 men who had received a mental health assessment whilst under probation supervision. The mental health assessment determined outcome groups of suicidal ideation, suicide attempt and no history of suicidal thoughts or behaviour and OASys provided sociodemographic, clinical and criminogenic independent variables.

Results: There were significant differences regarding binge drinking or excessive alcohol use, illicit substance misuse, mental health conditions, adverse experience of childhood and increased distress scores associated with suicide attempt and ideation when compared to controls. White ethnicity and risk of self-harm were also significantly associated with suicide attempt when compared to controls. Risk of self-harm and a community order were the only variables significantly associated with suicide attempt compared to suicidal ideation. Results indicated that a 6-factor tool, with a cut-off score of 3 or more, could identify a suicide attempt in 82% of cases. Independent variables within the tool included binge drinking or excessive alcohol use, adverse experience of childhood, mental health conditions, illicit substance misuse, risk of self-harm and significant levels of distress. A simple summation tool was developed to inform probation risk assessment and identify vulnerabilities for suicide.

Conclusions: This study supports the use of risk factors in identifying men on probation who may be at increased risk of a suicide attempt. However, as the study is retrospective in nature, the validity of the regression tool should be treated with caution. The regression tool should be utilised to identify risk-based vulnerabilities to suicidality and indicate individuals who may require a suicide assessment. The tool can be used at the beginning of the care pathway to permit consideration of multiple vulnerabilities on an individual's potential risk of suicide over time.

Background

Individuals under community probation supervision demonstrate a suicide rate approximately two times of those serving custodial sentence, and 8.7 times that of the general population (HM Inspectorate of Probation, 2021). The severity of suicide risk in probation can be demonstrated further by The Ministry of Justice's annual report, that reported an increase of self-inflicted deaths by 18% from 2020-2021, accounting for 38% of all deaths of individuals who have offended and are supervised in the community (Ministry of Justice, 2021). Furthermore, Webb et al (2012) reported that 20 percent of suicides completed over a 12-month period by individuals under the Criminal Justice System were under probation supervision, and a latter study reported that 13% of suicides within the general population were serving a community sentence (King et al, 2015). However, suicide risk amongst individuals on probation remains greatly under researched, and arguably neglected (Mackenzie et al, 2017; Phillips et al, 2018; Skinner & Farrington, 2020).

The systematic review provided an overview of a wide pool of risk factors for suicide amongst the probation population within a scarce pool of literature, and demonstrated the need for further research within the field. Chapter Two also elicited how suicide attempt and ideation are often not explored within one study, of which promotes difficulties comparing findings and identifying individuals most at risk of a suicide attempt. Not all individuals who experience suicidal ideation will go onto attempt suicide; so how can we identify those most at risk?

Ideation to action framework

Research suggests that suicide risk factors are often associated with ideation, however less prevalent when identifying those at greatest risk of enacting on these ideations (Favril & O'Connor, 2019; Favril et al, 2020c). The ideation-to-action framework is a key development in a growing body of literature which denotes the progression of suicidal ideation, and the development from ideation to suicide

attempts, are separate phenomena with distinct associations and explanations (Klonksy et al, 2016). The distinction is paramount; as approximately 71% of adults who experience suicidal ideation do not progress to a suicide attempt (Nock et al, 2008). This curates a common challenge to ascertain who is at highest risk of a suicide attempt, as ideation prevalence rates are high within the offending population, particularly those with mental health difficulties (Favril & O'Connor, 2019; Jenkins et al, 2005). Therefore, it is crucial to distinguish factors that pose an individual at risk of attempting suicide compared to solely suicidal ideation. This would be clinically relevant to improve risk assessment, identify individuals who may require a suicide assessment and tailor preventative intervention within this vulnerable population (Favril et al, 2020c).

There has been growing recognition of factors associated with ideation and enaction distinctly within the general population and recently custodial samples (Favril et al, 2020b), however research is limited within the offender population and to our knowledge this would be the first study of its kind to distinguish these differences within a probation sample. Findings can inform best practice regarding risk factors of relevance to assessing risk of suicide for individuals under community supervision, help identify individuals who may have vulnerabilities for suicidality, and supports the National Probation Service strategy (2019-2022) to improve the understanding and awareness of suicide risk (National Probation Service, 2019).

The current study

The aim of the study is to identify sociodemographic, criminogenic and clinical differences between men on probation who have; attempted suicide, experienced solely suicidal ideation and have not experienced suicidal thoughts or behaviour to identify individuals most at risk of a suicide attempt. The rationale to compare all groups is to account for the shared variance between suicide attempt and suicidal ideation (Favril et al, 2020c). Suicidal ideation is often the first stage of a subsequent suicide attempt, and therefore paramount to consider within risk assessment.

However, suicide attempts rarely occur without suicidal ideation, and variables associated with ideation can often masquerade as being associated with attempts (Favril et al, 2019; Klonksy et al, 2016). In conducting separate analysis, the independent contribution of suicide attempt risk factors can be more thoroughly established (Favril & O'Connor, 2019).

The second aim of the study was to develop a regression tool of risk factors identified as associated with a suicide attempt to improve the ability to identify risk-based vulnerabilities for suicide. It is proposed the tool can be used at the beginning of the care pathway to permit consideration of the compound effect of multiple vulnerabilities on an individual's potential risk of suicide.

Methodology

The sample consisted of 344 men supervised by London Community Rehabilitation Company (CRC); a privatised probation provider that worked with the National Probation Service. All participants were referred by their probation practitioner to mental health partnership worker St Andrew's Healthcare. People with mental health needs have been identified at increased risk of suicide within the probation population, and therefore the sample was deemed appropriate to identify individuals most at risk. All of the sample completed a mental health assessment with either a qualified, trainee or assistant psychologist, whereby suicide risk was assessed, and an Offender Assessment System (OASys) assessment completed by their probation practitioner that comprised independent variables. All assessments completed within 12 months prior to study commencement were analysed to identify participants.

To promote the rigour of results and their utility within the probation setting, participants were excluded from the study if their experience of suicidal ideation or attempt and occurred five years prior to data collection. Participants were also excluded from the study if they reported experiencing recent suicidal ideation (i.e.

within five years), however reported a historical suicide attempt (i.e. post five years). This was to ensure groups were mutually exclusive and promote validity of risk factors relevant for risk assessment. Participants were excluded from the study if there was not consent for their data to be utilised for research purposes, and if the suicide assessment had not been completed.

Ethics

Ethical approval was granted from St Andrew's Healthcare, MTC Novo (Probation Provider) and the University of Nottingham (Appendix F). All participants had provided consent for their data to be utilised for research purposes, and ethical approval was granted with the proviso that all data is anonymised so that all participants were not identifiable.

Measures

Outcome variable

The outcome variables are; suicidal ideation, suicide attempt; both occurring within five years prior to data collection, and no history of suicidal ideation or behaviour. Previous ideation-to-action research with general and custodial populations have considered lifetime history of suicidal ideation and attempts, however this design limits understanding regarding the temporal nature of these relationships (Favril & O'Connor, 2019). However, consistent with recent ideation-to-action publications in general and custodial populations (Favril et al, 2019; Wetherall et al, 2021), outcome groups were allocated based on questions similar to the British National Psychiatric Morbidity Survey (Jenkins et al, 2005), as routinely assessed and documented within St Andrew's Healthcare mental health assessment.

The British National Psychiatric Morbidity Survey consists of the following question; 'Have you ever thought of taking your own life, even though you would not actually do it?' and regardless to the answer, participants are also asked 'Have you ever made an attempt to take your life?'. Although these questions were not explicitly

stipulated within the assessment, all participants were asked whether they had experienced suicidal ideation or a suicide attempt. Both questions were coded yes/no, and categorised participants in three mutually exclusive groups; participants without any suicidal history (i.e. control group), participants who have experienced suicidal ideation but never attempted suicide (i.e. ideation group) and participants who have acted on suicidal ideation and attempted suicide (i.e. attempt group). Follow-up questions clarify when ideation or attempt occurred.

Independent variables

OASys is a case management system used by probation to assess risk of harm and offence-related needs. It is completed on all offenders under probation supervision, other than individuals sentenced only with a community payback order (Cook & Borrill, 2013). OASys includes sociodemographic (i.e. age and ethnicity) and offending data (i.e. offence type and order type). In addition, probation probationers score individuals on specific questions, often inputted as a binary outcome of yes or no (i.e. 'are drugs currently used?), or scored between 0; no problems, 1; some problems, or 2; significant problems (i.e. experience of childhood). The tool obtains data regarding a range of variables, for example; mental health, relationships and substance misuse, and probation practitioners provide detailed evidence to support the rating score of each item. As per themes outlined in the systematic review, independent variables are grouped into sociodemographic (i.e. age), criminogenic (i.e. offence type), and clinical variables (i.e. the presence of mental health conditions).

Analysis

The analytical sample comprised of 314 men on probation with complete data on suicidal outcomes. Although data is not available to identify how many men are on probation supervision in London, as of March 2024 there were 145,377 men being supervised by probation in the community in England and Wales (Ministry of Justice

and HMPPS, 2024). Therefore, this sample is only representative of less than 1% of this wider population, hence findings should be interpreted with caution. 8 individuals (2%) were excluded from the study as responses on suicidal outcomes were missing, 21 participants (6%) were excluded as the reported experience of suicidal ideation or attempt did not occur within five years before data collection, and 1 participant (0.2%) was removed due to a missing OASys report. However, statistically significant differences were not noted between excluded and included participants. There was complete OASys data for all participants included in analysis.

Bivariate analyses compared 1. controls (N = 101) with individuals who experience suicidal ideation (N = 102), 2. controls (N = 101) with individuals who attempted suicide (N=111) and 3. individuals who experienced suicidal ideation (N=102) with those who experienced a suicide attempt (N=111). As some variables may be protective in nature, two-tail statistics were applied using non-parametric statistics for nominal data for each group. Therefore, a chi-squared analysis was conducted that utilised cross-tabulations to identify positive associations between variables and the high-risk group of either ideation or attempt. Continuous variables (i.e. age, multiple deprivation score, Kessler-6 distress score and alcohol audit score) did not demonstrate a normal distribution, and therefore a Mann Whitney-U test analysis was utilised. Continuous variables were also analysed as dichotomous variables, whereby a cut-off point was determined through assessment of distribution via a histogram. The rationale for additional analysis is to increase the applicability of the regression tool to be utilised as a means of identifying vulnerabilities to suicidality, and hence identify individuals who may require a suicide assessment. It is envisioned this would be utilised at the beginning of the care pathway to allow consideration of the compound effect of multiple vulnerabilities on an individual's potential risk of suicide.

A full OASys assessment was provided for each participant, of which consisted of 39 variables. Due to multiple testing and the number of chi-squared test carried out, a Bonferroni correction was utilised to adjust probability values due to the increased

likelihood of a type 1 error when conducting multiple statistical tests (Sedgwick, 2012). Therefore, only those associations reaching 99.9% confidence limit ($p<0.001$, two tailed) were noted and selected to be utilised in a binary logistic regression as independent variables. However, when bivariate analyses had fewer associations at $p<.001$, discretion was utilised to consider whether association had occurred by chance. For example, if a risk factor only demonstrated $p<0.05$ significance within control vs ideation analyses, however demonstrated $p<0.001$ significance within control vs attempt analysis, the variable was considered for secondary analysis. A missing values analysis indicated variables had less than 2% missing values for at least one item. Therefore, listwise deletion was utilised to manage missing cases for all variables and analyses (Favril et al, 2020c).

Regression tool development

Binary logistic regression is a multivariate statistical method whereby the expected values of the outcome variable; suicide attempt (1) or control (0), are identified based on values derived from independent variables, otherwise known as risk factors. The regression provides measures of strength of associations between the outcome and independent variables, and the enter method was utilised whereby all variables that demonstrated significance at <.001 level were entered into the tool (Frank & Harrell, 2015). A simple summation score was calculated on the sum of risk factors present for each individual and a cut-off score was established for the tool which provided the best separation of the two groups (i.e. individuals who did not experience suicidal ideation or attempt, and those who did attempt suicide).
The efficacy of utilising a tool of independent variables to a population sample of men on probation to decipher between two groups within the sample (i.e. control and attempt group) can be determined through comparison of the actual observed outcome to the predicted categorisation of the same population based on the number, or score, of independent variables present in each case that are associated with the outcome variable (attempt or control). This can be presented with a

classification table (see Table 3) and contains measures that can describe the performance of the regression tool.

Table 3: *Contingency classification table for predictive studies (amended from Leventhal, 1988)*

Observed Incidences	**Predicted Incidences**		
	Control (Low risk)	Attempt (High risk)	Actual Total Observed
Control (Low risk)	(A)	(C)	(A + C)
Attempt (High risk)	(B)	(D)	(B + D)
Predicted total	(A + B)	(C + D)	Total N

Leventhal (1988) proposed calculating performance characteristics of the regression tool as follows:

- Incidence of suicide attempt = (B + D)/N
- High Risk for suicide attempt = (C + D)/N
- Positive accuracy of tool = D/(C+D)
- Negative accuracy tool = A/(A+B)
- Risk Ratio (RR) = D/ (C + D) / B/ (B + A)
- Sensitivity = D/ (B+D)
- Specificity = A/ (A+C)

Results

Of the 314 participants whose data were included in the analysis, just over half of participants were of White ethnicity (56.2%). Participants age ranged from 19-69 (x̄36, IQR=28, 46), and index of multiple deprivation scores generated from postcodes ranged from 1-10 (x̄4, IQR= 2, 5), with lower scores indicating higher deprivation levels. Therefore, the majority of participants resided in more deprived areas (65.5%) and were aged between 19-39 (57.6%). Just over half participants were convicted of a non-violent index offence (56.4%), serving post-sentence supervision or a suspended sentence order (56.1%) as opposed to solely a community order, and 79.9% were identified at medium risk of harm instead of low.

The prevalence of suicidal ideation and attempt was 32.5% (N=102) (95% CI 24.7-29.5) and 35.4% (N=111) (95% CI 36.1-46.7) respectively. Of the 314 included participants, 32.2% (95% CI 24.5 – 29.2) were controls and therefore had no history of suicidal ideation or attempt. Further details on respondents' characteristics are presented in Table 4, stratified by outcome group (controls, ideation and attempt)

Table 4: *Demographic variables stratified by outcome group**

		Control group N (%)	Ideation group N (%)	Attempt group N (%)	Full Sample
		101 (32.2%)	102 (32.5%)	111 (35.4%)	314 (100%)
Age	19-39	63 (34.8%)	50 (27.6%)	68 (37.6%)	181 (57.6%)
	40 and above	38 (28.6%)	52 (39.1%)	43 (32.3%)	133 (42.4%)
	Average age	34 (18.3)	38 (18.5)	35 (13.8)	36 (28, 46)
Ethnicity	White ethnicity	45 (25.6%)	57 (32.4%)	74 (42%)	176 (56.2%)
	Other than white ethnicity	55 (40.1%)	45 (32.8%)	37 (27%)	137 (43.8%)
Deprivation	Least deprived	39 (36.4%)	32 (29.9%)	36 (33.6%)	107 (34.5%)
	Most deprived	61 (30%)	69 (34%)	73 (36%)	203 (65.5%)
	Average score	4 (3)	4 (3)	3.5 (3)	4 (2, 5)
Offence Category	Non-Violence	60 (33.7%)	54 (30.3%)	64 (36%)	178 (56.7%)
	Violence	41 (30.1%)	48 (35.3%)	47 (34.6%)	136 (43.4%)
Order Type	Suspended Sentence or Post Sentence Supervision	59 (33.7%)	65 (37.1%)	51 (29.1%)	175 (55.7%)
	Community Order	42 (30.2%)	37 (26.6%)	60 (43.2%)	139 (44.3%)
Risk Of Harm	Low	18 (28.6%)	25 (39.7%)	20 (31.7%)	63 (20.1%)
	Medium	83 (33.1%)	77 (30.7%)	91 (36.3%)	251 (79.9%)

**Values listed as N (%) for categorical variables and Median (IQR) for continuous variables*

Bivariate analyses

Control vs Ideation

Table 5 outlines bivariate analyses of variables and their association with suicidal ideation compared to the control group.

Sociodemographic variables

There were not significant differences regarding any sociodemographic variables between participants who reported suicidal ideation (n = 102, 50.2%) with those who reported no history of suicidal ideation or attempt (n = 101, 49.75%). 42% of individuals aged 40 and above were in the control group, and 58% of individuals within the ideation group respectively X^2 (1, N = 203) = 3.231, p = .055). A higher proportion of individuals with white ethnicity were in the ideation group (56%) compared to the control group (44%).

No significant differences were found in deprivation scores, with 53% of those habiting 'Most deprived' areas within the ideation group compared to 47% of the control group. 58% of individuals with no fixed address/unsuitable accommodation were in the ideation group compared to 42% within the control group X^2 (1, N = 203) = 3.231, p = .072).

Education level was not associated with suicidal ideation, with 57% of individuals with no educational or vocational qualifications beyond GCSE level in the ideation group, and 43% in the control group respectively. Similarly, there was not a significant relationship between source of income and problematic relationships with close family members or partner.

Criminogenic variables

There was not a significant relationship between control and ideation groups regarding any criminogenic variables. 54% of individuals that committed a violent offence were in the ideation group, compared to 46% of the control group. 47% of

participants on a community order were in the ideation group compared to 53% of the control group. Finally, a higher proportion of participants were identified at medium risk within the control group (52%), however, individuals who demonstrated pro criminal attitudes were mostly in the ideation group (54%).

Clinical variables

Participants within the ideation group were significantly more likely to have a mental health condition compared to controls X^2 (1, N = 203) = 12.92, p = <.001), and this was the only variable to meet the Bonferroni correction. A Mann Whitney-U test revealed controls had significantly lower distress scores (Z=-2.954, p=.003) and alcohol audit scores (Z=-2.70, p=.005) compared to the ideation group.

Three variables met significance at the .05 level in comparing differences between the control and ideation group. Participants who had experienced suicidal ideation were significantly more likely to have demonstrated binge drinking or excessive alcohol in the previous six months X^2 (1, N = 203) = 4.36, p = .037), use illicit substances (1, N = 203) = 5.28, p = .022), and have adverse childhood experiences X^2 (1, N = 203) = 5.36, p = .021).

60% of individuals with a physical condition were in the ideation group compared to 40% of the control group X^2 (1, N = 203) = 3.23, p = .072). Similarly, 60% of participants identified at risk of self-harm comprised the ideation group compared to 39% within the control group. Finally, there was not a significant relationship between control and ideation groups regarding current/pending psychiatric treatment.

Table 5: *Bivariate analyses results comparing suicidal ideation with controls*

Variable	Category	Control (N = 101)		Ideation (N=102)		Total N	Chi Square Statistic Value / Z score	Probability
		N	%	N	%			
Age	19-39	63	56	50	44	113	3.67	.055
	40 and above	38	42	52	58	90		
	Mean rank	96		107		203	-1.23	.219
Ethnicity (White ethnicity)	No	55	55	45	45	100	2.39	.122
	Yes	45	44	57	56	102		
Deprivation	Least deprived	39	54	32	45	71	1.18	.278
	Most deprived	61	47	69	53	130		
	Mean rank	105		94		199	-1.49	.137
No Fixed Address or unsuitable accommodation	No	66	55	54	45	120	3.23	.072
	Yes	35	42	48	58	83		
Has educational or vocational qualifications above GCSE level	No	30	43	40	57	70	2.03	.154
	Yes	71	53	62	46	133		
Source of income (Employed/self-employed)	No	81	50	81	50	162	.019	.889
	Yes	20	49	21	51	41		
Problematic relationship with close family members	No	57	52	52	53	109	.607	.436
	Yes	44	47	50	53	94		
Problematic relationship with partner	No	75	47	84	52	159	1.96	.162
	Yes	26	59	18	40	44		
Offence Category (Violence)	No	60	53	54	47	114	.861	.353
	Yes	41	46	48	54	89		
Pro criminal attitudes	No	54	54	46	46	100	1.42	.233

	Yes	47	46	56	54	103		
Order Type (Community order)	No	59	48	65	52	124	.602	.438
	Yes	42	53	37	47	79		
Risk of Harm (Medium)	No	18	42	25	58	43	1.36	.244
	Yes	83	52	77	48	160		
Binge drinking or excessive use of alcohol in last six months*	No	77	55	64	45	141	4.36	.037
	Yes	24	39	38	61	62		
Alcohol audit score**	No	77	56	60	44	137	6.04	.014
(Harmful use/possible dependency)*	Yes	21	37	36	63	57		
	Mean rank		86		108	194	-2.79	.005
Drugs used currently*	No	80	55	66	45	146	5.29	.022
	Yes	21	37	36	63	57		
Any mental health conditions***	No	47	67	23	33	70	12.92	<.001
	Yes	54	40	79	59	133		
Current/pending psychiatric treatment	No	81	50	82	50	163	.001	.972
	Yes	20	50	20	50	40		
Kessler-6 distress score**	No	52	53	47	48	99	.594	.441
(Significant distress)	Yes	49	47	47	52	104		
	Mean rank		89		114	203	-2.954	.003
Adverse experience of childhood*	No	58	58	42	42	100	5.36	.021
	Yes	43	42	60	58	102		
Risk of serious self-harm	No	90	51	85	47	175	1.42	.233
	Yes	11	39	17	60	28		
Any physical conditions	No	77	54	66	46	143	3.23	.072
	Yes	24	40	36	60	60		

+ **Key**: P = <.001***, P=<.01**, P = <.05 *

Controls vs Attempt

Table 6 outlines bivariate analyses of variables and their association with suicide attempt compared to the control group.

Sociodemographic variables

There was not a significant difference regarding the majority of sociodemographic variables between participants who reported a suicide attempt (N=111, 52.4%) with those who reported no history of suicide attempt, or suicidal ideation (N = 101, 47.6%). However, there were significantly more individuals with white ethnicity in the attempt group compared to the control group X^2 (1, N = 212) = 10.04, p = .002), although this did not meet the Bonferroni correction.

There were no significant differences regarding deprivation scores, despite 55% of those habiting 'Most deprived' areas belonging to the attempt group compared to 46% within the control group. 59% of individuals with no fixed address/unsuitable accommodation were in the attempt group compared to 41% of the control group.

Education level was not associated with the control group with 58% of individuals with no educational or vocational qualifications above GCSE level within the attempt group, compared to 42% within the control group. 61% of individuals who were employed/self-employed were within the control group, and 39% within the attempt group. Finally, there was not a significant relationship between control and attempt group regarding problematic relationships partner, however problematic relationships with close family members met significance at the .05 level X^2 (1, N = 212) = 4.76, p = .029).

Criminogenic variables

There was not a significant relationship between control and attempt groups regarding criminogenic variables of violent offending or risk of harm. 59% of participants serving a community order were in the attempt group compared to 41%

within the control group X^2 (1, N = 212) = 3.29, p = .070). Finally, 59% of participants who demonstrated pro criminal attitudes were within the attempt group compared to 41% within the ideation group, however this was only significant at the .05 level X^2 (1, N = 212) = 4.07, p = .044).

Clinical variables

Six out of nine clinical variables met significance within the Bonferroni correction. Participants in the attempt group were significantly more likely than controls to demonstrate binge drinking or excessive alcohol use X^2 (1, N = 212) = 11.38 p = <.001), use illicit substances X^2 (1, N = 212) = 13.04 p = <.001), have mental health conditions X^2 (1, N = 212) = 27.86 p = <.001), pose risk of serious harm to themselves X^2 (1, N = 212) = 42.71 p = <.001) and have an adverse experience of childhood X^2 (1, N = 212) = 10.58 p = <.001). A Mann Whitney-U test demonstrated controls had significantly lower distress scores (Z=-3.62, p <.001), and alcohol audit scores (Z=2.67, p<.007) compared to the attempt group.

One clinical variable met significance at the .05 level in comparing differences between the control and attempt group. Individuals in the attempt group were more likely to have current/pending psychiatric treatment compared to controls X^2 (1, N = 212) = 5.54, p = .019). The only clinical variable to not demonstrate any significance was physical conditions, with 55% of individuals with a physical condition in the attempt group compared to 44% of the control group.

Table 6: *Bivariate analyses results comparing suicide attempt with controls*

Variable	Category	Control (N = 101)		Attempt (N = 111)		Total N	Chi Square Statistic Value/Z-Score	Probability
		N	%	N	%			
Age	19-39	63	48	68	51	131	.028	.867
	40 and above	38	47	43	53	81		
	Mean rank	106		106		212	-.053	.958
Ethnicity (White ethnicity)**	No	55	60	37	40	92	10.04	.002
	Yes	45	38	74	62	119		
Deprivation	Least deprived	39	52	36	48	75	.809	.369
	Most deprived	61	46	73	55	134		
	Mean rank	113		98		209	-1.889	.059
No Fixed Address or unsuitable accommodation	No	66	52	61	48	127	2.38	.123
	Yes	35	41	50	59	85		
Has educational or vocational qualifications above GCSE level	No	30	42	31	58	71	1.24	.265
	Yes	71	50	70	50	141		
Source of income (Employed/self-employed)	No	81	45	98	55	179	2.63	.105
	Yes	20	61	13	39	33		
Problematic relationship with close family members	No	57	55	46	45	103	4.76	.029
	Yes	44	40	65	60	109		
Problematic relationship with partner	No	75	50	76	50	151	.865	.352
	Yes	26	43	35	57	61		
Offence Category (Violence)	No	60	48	54	52	124	.067	.796

	Yes	41	47	47	53	88		
Pro criminal attitudes*	No	54	55	44	45	98	4.07	.044
	Yes	47	41	67	59	114		
Order Type (Community	No	59	54	51	46	110	3.29	.070
Order)	Yes	42	41	60	59	102		
Risk of Harm	Low	18	47	20	53	38	.001	.970
	Medium	83	48	91	52	174		
Binge drinking or excessive	No	77	56	60	44	137	11.38	<.001
use of alcohol in last six months***	Yes	24	32	51	68	75		
Alcohol audit score **	No	77	54	66	46	143	6.46	.011
(Hazardous use/possible	Yes	21	34	40	66	61		
dependency)*	Mean rank	91		113		204	-2.674	.007
Drugs used currently***	No	80	56	62	44	142	13.03	<.001
	Yes	21	30	49	70	70		
Any mental health	No	47	76	15	24	62	27.86	<.001
conditions***	Yes	54	36	96	64	150		
Current/pending psychiatric	No	81	52	73	47	154	5.54	.019
treatment*	Yes	20	34	38	66	58		
Kessler-6 distress score***	No	52	58	38	42	90	6.44	.011
(Significant distress)*	Yes	49	40	73	60	122		
	Mean rank	91		121		212	-3.623	<.001
Adverse experience of	No	58	60	39	40	97	10.59	<.001
childhood***	Yes	43	37	72	63	115		
Risk of serious self-harm**	No	90	63	52	37	142	42.70	<.001
	Yes	11	33	59	84	70		
Any physical conditions	No	77	49	80	51	157	.478	.490

Yes	24	44	31	56	55

+ **Key**: P = <.001***, P=<.01**, P = <.05*

Ideation vs Attempt

Table 7 outlines bivariate analyses of variables and their association with suicidal ideation compared to the attempt group.

Sociodemographic variables

There was not a significant difference regarding sociodemographic variables between participants who reported suicidal ideation only (N=102, 47.8%) with those who reported a suicide attempt (N = 111, 52.1%). 55% of individuals aged 40 and above were within the ideation group, and 45% within the attempt group respectively X^2 (1, N = 212) = 3.22, p = .073). Likewise, a higher proportion of individuals with 'White ethnicity' were in the attempt group (57%), compared to the ideation group (44%).

There were no significant differences in deprivation scores, with 49% of those habiting 'Most deprived' areas within the ideation group compared to 53% of the attempt group. 49% of individuals with no fixed address/unsuitable accommodation were in the ideation group compared to 51% of the attempt group.

Education level was not associated with the ideation group with 49% of individuals with no educational or vocational qualifications beyond GCSE level in the ideation group, and 53% in the attempt group respectively. 62 % of individuals in the ideation group were employed/self-employed, compared to 38% within the attempt group X^2 (1, N = 212) = 3.12, p = .077). Finally, there was not a significant difference between control and ideation group regarding problematic relationships with close family members, however participants in the attempt group were more likely to have a problematic relationship with their partner compared to the ideation group at the .05 significance level X^2 (1, N = 212) = 5.48, p = .019).

Criminogenic variables

There was not a significant difference between ideation and attempt groups regarding criminogenic variables of violent offending or pro criminal attitudes. 54 % of medium risk participants were in the attempt group, compared to 46% within the ideation group. However, 62% of participants serving a community order were in the attempt group compared to 38% within the ideation group, of which demonstrated significance at the 0.01 level (1, N = 212) = 6.76, p = .009).

Clinical variables

Risk of serious harm to self was the only variable to demonstrate a significant difference between the ideation and attempt group X^2 (1, N = 213) = 30.83 p = <.001) that met the Bonferroni correction. Current/pending psychiatric treatment differed between ideation and attempt groups at the 0.05 level X^2 (1, N = 213) = 5.74 p = .017). Although 57% of participants with significant distress were in the attempt group, compared to 43% in the ideation group, this association did not meet significance X^2 (1, N = 213) = 3.11 p = .078). Similarly, although 55% of participants with mental health conditions comprised the attempt group compared to 45% of the ideation group, this did not meet significance X^2 (1, N = 213) = 2.96 p = .085). Therefore, there was not a statistically significant relationship between ideation and attempt groups regarding additional clinical variables of binge drinking or excessive alcohol use, use of illicit drugs, physical health conditions and adverse experience of childhood.

Table 7: *Bivariate analyses results comparing suicidal ideation with suicide attempt.*

Variable	Category	Ideation (N=102)		Attempt (N=111)		Total N	Chi Square Statistic Value/Z-Score	Probability
		N	%	N	%			
Age	19-39	63	56	68	58	118	3.22	.073
	40 and above	52	55	43	45	95		
	Mean rank		113		100	209	-1.58	.115
Ethnicity (White ethnicity)	No	45	55	37	45	82	2.61	.106
	Yes	57	44	74	57	131		
Deprivation	Least deprived	32	47	36	53	68	.043	.835
	Most deprived	69	49	73	51	142		
	Mean rank		106		103	208	-.343	.732
No Fixed Address or unsuitable accommodation	No	54	47	61	53	115	.087	.768
	Yes	48	49	50	51	98		
Has educational or vocational qualifications above GCSE level	No	40	49	41	51	81	.117	.732
	Yes	62	47	70	53	132		
Source of income (Employed/self-employed)	No	81	45	98	55	179	3.122	.077
	Yes	21	62	13	38	34		
Problematic relationship with close family members	No	52	53	46	47	98	1.95	.163
	Yes	50	44	65	57	115		
Problematic relationship with partner*	No	84	53	76	48	160	5.48	.019
	Yes	18	34	35	66	53		
Offence Category (Violence)	No	54	46	64	54	118	.479	.489

	Yes	48	50	47	50	95		
Pro criminal attitudes	No	46	51	44	49	90	.649	.420
	Yes	56	46	67	55	123		
Order Type (Community Order)**	No	65	56	51	44	116	6.78	.009
	Yes	37	38	60	62	97		
Risk of Harm (Medium)	No	25	56	20	44	45	1.34	.246
	Yes	77	46	91	54	168		
Binge drinking or excessive use of alcohol in last six months	No	64	52	60	48	124	1.65	.199
	Yes	38	43	41	57	80		
Alcohol audit score (Hazardous/possible dependency)	No	60	48	66	52	126	.001	.972
	Yes	36	47	40	53	76		
	Mean rank	101		101		202	-.093	.926
Drugs used currently	No	66	52	62	48	128	1.74	.188
	Yes	36	42	49	58	85		
Any mental health conditions	No	23	60	15	40	38	2.96	.085
	Yes	79	45	96	55	175		
Current/pending psychiatric treatment*	No	82	53	73	47	155	5.74	.017
	Yes	20	34	38	66	58		
Kessler-6 distress score (Significant distress)	No	47	55	38	45	85	3.11	.078
	Yes	55	43	73	57	128		
	Mean rank		104		109	213	-.640	.522
Adverse experience of childhood	No	42	52	39	48	132	.823	.364
	Yes	60	45	72	55	132		
Risk of serious self-harm***	No	85	62	52	38	137	30.83	<.001
	Yes	17	22	59	78	76		
Any physical conditions	No	66	45	80	55	146	1.34	.247

Yes	36	54	31	46	67

+ Key: P = <.001***, P=<.01**, P = <.05*

Multivariate analyses

Control v ideation

Bivariate analysis demonstrated one association significant with suicidal ideation at the <.001 level (presence of mental health condition), and two associations significant at the <.01 level (alcohol audit score and Kessler-6 distress score). However, variables identified as significant at the .05 level (i.e. binge drinking or excessive use of alcohol, illicit substance misuse, adverse experience of childhood) were significant within the control vs attempt bivariate analysis at the <.001 significance level. Therefore, we can deduce with increased confidence that significance did not occur by chance, and including variables significant at the .05 level increased the overall strength of the regression by 4%. Hence, these six significant variables remained in the binary logistic regression analysis via SPSS. Variables did not demonstrate collinearity and therefore were all included in the regression.

The six variables included were binge drinking or excessive use of alcohol in the last 6 months, alcohol audit score, experience of childhood, mental health conditions, illicit substance misuse and Kessler-6 distress score. The results of the logistic regression on the six independent variables are outlined in Table 8. Including alcohol audit score reduced the total sample size for the regression by 9 participants due to missing data. However, 194 participants exceeds the recommended minimum number of 50 subjects for a regression, and further strengthened the overall classification of the model by 3%.

Table 8: *Results of logistic regression on six independent variables comparing controls with ideation*

Binary logistic regression (N= 194): Variables in the Equation – Step 1.

Risk Factor Variable	B	S.E.	Wald	df	Sig.	Exp (B)	Lower	Upper
Binge drinking or excessive use of alcohol in the last six months	.209	.395	.278	1	.598	1.232	.568	2.674
Adverse experience of childhood	.546	.322	2.881	1	.090	1.762	.919	3.243
Mental health conditions	.852	.338	6.371	1	.014	1.072	1.210	4.543
Illicit substance misuse	.563	.352	2.553	1	.110	1.756	.880	3.503
Kessler-6 distress score	.070	.028	6.054	1	.014	1.072	1.014	1.134
Alcohol audit score	.036	.024	2.299	1	.129	1.037	.989	1.087

Binary logistic regression indicates that mental health conditions (Wald = 6.371, p=.014) and Kessler-6 distress score (Wald = 6.054, p=.014) are significant independent variables of suicidal ideation at the .05 level. The odds ratio (OR) for mental health conditions is 1.072 (95% CI) and 1.072 (95% CI) for Kessler 6 distress score. The additional four independent variables of binge drinking or excessive alcohol use, adverse experience of childhood, illicit substance misuse and alcohol audit score did not remain significant.

The six-factor model correctly classified the outcome in 68% of cases (see Table 9). More specifically, the model correctly specified 64 of the 96 (66.7% specificity) who experienced suicidal ideation and was sensitive to 68 of the 98 (69.4%) who did not experience suicidal ideation. However, one in three (33.3%) of participants within the ideation group were classified incorrectly, resulting in 32 false positives. Similarly, 30 participants in the control group were incorrectly classified (30.6%), resulting in 30 false negatives.

Table 9: *Accuracy of logistic regression 6-factor model in classifying individuals who experienced suicidal ideation (N=194)**

	Predicted incidences		
Observed incidences	Control (Low Risk)	Ideation (High Risk)	Actual total
Control	68 (69.4%)	30 (30.6%)	98
Ideation	32 (33.3%)	64 (66.7%)	96
Predicted total	100	94	194

**68% correct classification*

Control v attempt

Table 10 illustrates variables that demonstrated significant associations (p<.001) with the attempt group compared to the control group, and hence were entered for binary logistic regression analysis via SPSS. All variables met the Bonferroni correction in bivariate analysis and did not demonstrate collinearity within the regression model.

The six variables included were binge drinking or excessive use of alcohol in the last 6 months, experience of childhood, mental health conditions, illicit substance misuse, risk of self-harm and Kessler-6 distress score. The Kessler-6 distress score was categorised as low and significant distress to increase the applicability of the model being utilised as a model in probation practice to possibly identify individuals at risk

of a suicide attempt. The results of the logistic regression on the six independent variables are outlined in Table 10.

Table 10: *Results of logistic regression on six independent variables comparing controls with attempt*

Binary logistic regression (N= 212): Variables in the Equation – Step 1.

Risk Factor Variable	B	S.E.	Wald	df	Sig.	Exp (B)	95% CI for Exp(B)	
							Lower	Upper
Binge drinking or excessive use of alcohol in the last six months	.761	.359	4.506	1	.034	2.141	1.060	4.323
Adverse experience of childhood	.470	.348	1.825	1	.177	1.599	.809	3.160
Mental health conditions	1.373	.394	12.159	1	<.001	3.949	1.825	8.646
Illicit substance misuse	.811	.361	5.056	1	.025	2.250	1.110	4.563
Risk of self-harm	1.707	.399	18.348	1	<.001	5.513	2.254	12.039
Kessler-6 distress score (Significant distress)	.494	.347	2.031	1	.154	1.639	.831	3.234

Binary logistic regression indicates that binge drinking or excessive use of alcohol (Wald = 4.506, p=.034) and illicit substance misuse (Wald = 5.056, p=.025) were significant independent variables of suicide attempt at the .05 level. The odds ratio (OR) for binge drinking or excessive alcohol use is 2.141 (95% CI 1.060-4.323) and for illicit substance misuse is 2.250 (95% CI 1.110-4.563). Whereas, risk of self-harm (Wald = 18.348, p=<.001) and mental health conditions (Wald = 12.159, p=<.001) were significant independent variables of suicide attempt that met the Bonferroni correction. The odds ratio for risk of self-harm is 5.513 (95% CI 2.524-12.039) and for mental health conditions is 3.949 (95% CI 1.925-8.546). The additional two independent variables of Kessler-6 distress score and adverse experience of childhood did not remain significant in the regression.

The six-factor model correctly classified the correct outcome in 77.4% of cases (See Table 11). More specifically, the model correctly specified 88 of the 111 (79.3% specificity) who attempted suicide and was sensitive to 76 of the 101 (75.2%) who did not experience a suicide attempt. However, one in five (20.7%) of participants within the attempt group were incorrectly classified, resulting in 23 false positives. Similarly, 24.7% participants in the control group were classified incorrectly resulting in 25 false negatives. If alcohol audit score and ethnicity were included in the model, the correct classification of cases is reduced from 79.3% to 76.8%.

Table 11 *: Accuracy of logistic regression 6-factor model in classifying participants who attempted suicide (N=212)**

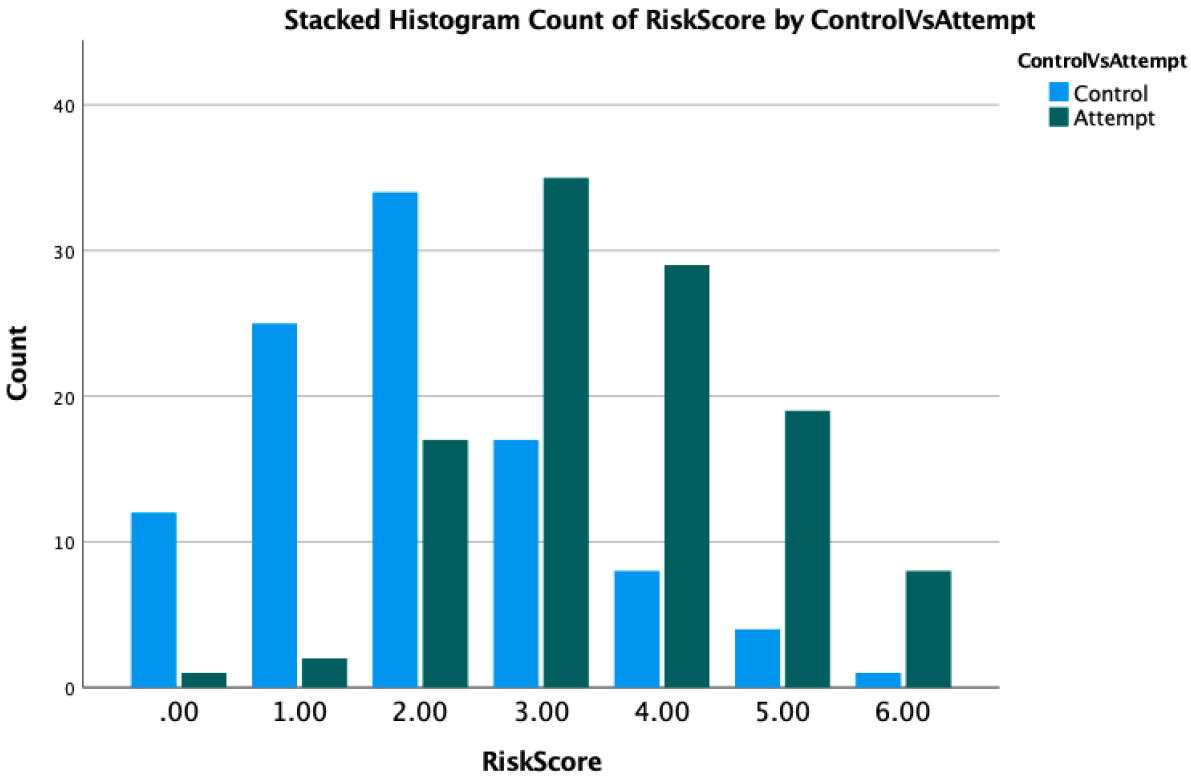
		Predicted incidences	
Observed incidences	Control (Low Risk)	Ideation (High Risk)	Actual total
Control	76 (75.2%)	25 (24.7%)	101
Attempt	23 (20.7%)	88 (79.3%)	111
Predicted total	99	113	212

77.4% correct classification*

Tool to identify vulnerabilities to suicidality

To develop a tool that could identify risk based vulnerabilities to suicidality and indicate individuals that may require a suicide assessment, a simple summation technique was implemented whereby the number of risk factors are totalled for each participant, with a minimum score of 0 and a maximum score of 6. Therefore, each risk factor was assigned a score of 1 if present and 0 if absent. The effectiveness of the tool was subsequently tested to determine whether scores could discriminate between individuals who did not experience suicidal thoughts or behaviour (low risk) versus individuals who did attempt suicide (high risk). The simple summation scores replaced the original data and a total score was developed for each participant. Figure 4 illustrates the total tool score summed for each participant derived from the amount of risk factors present. The totals were then compared in relation to outcome (control or attempt) to establish an effective cut-off point score to distinguish between the two groups. The established cut of score was 3 or more.

Figure 4: Tool scores of the number of risk factors present in those individuals who experienced a suicide attempt compared to individuals who had not attempted suicide (N=212).



This 6-factor tool (with a cut-off score of 3 or more) was found to correctly identify 76.4% of cases. For low-risk participants (who did not experience suicidal thoughts or behaviour), 70.3% were correctly classified and correctly specified and 29.7% were false positives (incorrectly classified). For high-risk individuals (who attempted suicide), the tool was sensitive to 82% of cases and 18% were false negatives (incorrectly classified). Overall, 23.5% of individuals were incorrectly classified, therefore approximately one in five individuals were incorrectly classified, as demonstrated in Table 12.

Table 12 *Classification table demonstrating the accuracy of a six-risk factor tool with a cut-off score of 3 or more to classify individuals who attempted suicide (N=212)**

	Predicted incidences		
Observed incidences	Control (Low Risk)	Ideation (High Risk)	Actual total
Control	71 (70.3%)	30 (29.7%)	101
Attempt	20 (18%)	91 (82%)	111
Predicted total	91	121	212

*76.4% correct classification of (a) binge drinking or excessive alcohol use, (b) adverse experience of childhood, (c) mental health conditions, (d) illicit substance misuse, (e) risk of self-harm and (d) Kessler-6 distress score (significant distress), compared to those who did not attempt suicide.

From Table 12 the performance of the six-variable tool was determined following instructions outlined within the methods section for calculating the operating characteristics of the tool

- Incidence of suicide attempt = (B + D)/N = 52.4%
- High Risk for suicide attempt = (C + D)/N = 57.1%
- Positive accuracy of 6-factor tool = D/ (C + D) = 75.2%
- Negative accuracy of 6-Factor tool = A/ (A + B) = 78%
- Risk Ratio (RR) = D/ (C + D) / B/ (B + A). = 3.42
- Sensitivity = D/ (B+D) = 82%
- Specificity = A/ (A+C) = 70.3%

The performance statistics could be improved by weighting risk factors, for example, a strong risk factor scores 3, a medium risk factor scores 2, and a weak risk factor

remains at score 1. A broader range of scores could increase the ability to decipher between the two groups (control or attempt), and increase the specificity of the tool. However, the current tool fulfils the majority of reasonable criteria (sensitivity = 60%, positive accuracy = 25% and specificity = 90%) as outlined by Levennthal (1988; p.156). The risk ratio indicates that the high-risk group are 3.42 times more likely to attempt suicide compared to the low-risk group. Although these findings strengthen the validity of the tool, it is imperative the tool is used at the beginning of the care pathway to permit consideration of the compound effect of multiple vulnerabilities on an individual's potential risk of suicide, as opposed to being used as a tool to predict suicide; as per NICE guidelines (NICE, 2022).

Ideation vs attempt

Bivariate analysis demonstrated only one association significant at the <.001 level (risk of serious self-harm), and one association significant at the <.01 level (order type – community order). However, when these variables were utilised in the regression model in conjunction with variables significant at the <.01 level within control vs attempt analysis, the strongest model to identify an individual who had attempted suicide was found. As variables identified at .05 significance did not meet Bonferroni correction in other analyses, they were not included in the regression model, as we could not deduce with confidence this did not occur by chance.

The nine variables included (see Table 13) were binge drinking or excessive use of alcohol in the last 6 months, experience of childhood, mental health conditions, illicit substance misuse, risk of self-harm, alcohol audit score and Kessler-6 distress score. Additional variables of order type (community order) were added due to its significance at the 0.01 level, and ethnicity group was added due to its significance at the 0.01 level within control vs attempt, and its insignificance in control vs ideation bivariate analysis. These additional two variables strengthened the strength of the model's ability to identify attempt cases by 9%, and overall strength by 2%.

The Kessler-6 distress score and alcohol audit score were categorised as dichotomous variables to increase the applicability of the model being used as a model in probation to identify individuals at risk of a suicide attempt. The categorisation was low and significant distress, and low risk and hazardous alcohol use/possible dependency.

Table 13: *Results of logistic regression on nine independent variables comparing ideation with attempt*

Binary logistic regression (N= 202): Variables in the Equation – Step 1.

Risk Factor Variable	B	S.E.	Wald	df	Sig.	Exp (B)	95% CI for Exp(B)	
							Lower	Upper
Binge drinking or excessive use of alcohol in the last six months	.140	.363	.148	1	.701	1.150	.564	2.342
Adverse experience of childhood	.027	.337	.337	1	.937	.974	.503	1.883
Mental health conditions	.479	.416	1.327	1	.249	1.615	.715	3.648
Illicit substance misuse	.429	.331	1.681	1	.195	1.535	.803	2.935
Risk of self-harm	1.721	.363	22.459	1	<.001	5.535	2.744	11.398
Kessler 6 distress score (Significant distress)	.391	.328	1.426	1	.232	1.479	.778	2.811
Alcohol audit score (Hazardous/possible dependency)	.399	.370	1.163	1	.281	.671	.325	1.386
Ethnicity (White)	.297	.333	.797	1	.372	1.346	.701	2.583
Order type (Community Order)	.840	.326	6.625	1	.010	2.317	1.222	4.393

Binary logistic regression indicates that Order Type (Community) (Wald = 6.625, p=.010) was significant at the .05 level. The odds ratio (OR) for Order Type (Community) is 2.317 (95% CI 1.22-4.393). Whereas, risk of self-harm remained

significant at the <.001 level. The odds ratio (OR) for risk of self-harm was 5.535 (95% CI 2.744-11.398).

The nine-factor model correctly classified the outcome in 69.8% of cases (See Table 14). More specifically, the model correctly specified 71 of the 106 (67% specificity) who attempted suicide and was sensitive to 70 of the 96 (73%) who experienced suicidal ideation but did not progress onto a suicide attempt. However, 33% of participants within the attempt group were classified incorrectly, resulting in 35 false positives. Similarly, 27% participants in the ideation group were incorrectly classified resulting in 26 false negatives, as demonstrated in Table 14.

Table 14**:** *Accuracy of logistic regression nine-factor model in classifying participants who attempted suicide compared to suicidal ideation (N=202)**

		Predicted incidences	
Observed incidences	Control (Low Risk)	Ideation (High Risk)	Actual total
Ideation	70 (73%)	26 (27%)	96
Attempt	101	101	212
Predicted total	101	101	212

*69.8% correct classification

Discussion

The study analysed OASys data from 314 male participants to explore sociodemographic, criminological and clinical differences between men on probation who have; attempted suicide, experienced solely suicidal ideation and have not experienced suicidal thoughts or behaviour, and to develop a tool that could identify risk-based vulnerabilities to suicide. Results outlined a six-factor tool that can be utilised as a simple summation tool for probation professionals to identify individuals

who may possess vulnerabilities for suicide and require further assessment. In addition, the tool can be used at the beginning of the care pathway to monitor the effect of multiple vulnerabilities on an individual's potential risk of suicide. The 6-factor tool (with a cut-off score of 3 or more) correctly identified 70.3% of low-risk participants (controls, who did not experience suicidal ideation or suicide attempt) and 82% of high-risk participants (who attempted suicide). Overall, 23.5% of individuals were incorrectly classified, therefore approximately one in five individuals were incorrectly classified.

The study found the following 6 risk factors could distinguish those who attempt suicide from those who did not report suicidal ideation nor suicide attempt. The first two risk factors accounted for a vast proportion of the power, and therefore are important vulnerabilities to consider. The remaining risk factors are listed in descending power.

- Risk of self-harm
- Mental health conditions
- Illicit substance misuse
- Binge drinking
- Adverse experience of childhood
- Kessler-6 distress score >13 (significant distress)

Overall, these variables were the only risk factors that met the Bonferroni adjustment for significance when comparing controls and individuals who had attempted suicide. The tool indicates if an individual has 3 or more of the above 6 risk factors, then they may be 80% more at risk. Interestingly, these were the only variables to demonstrate significance when comparing controls with individuals who experienced suicidal ideation, albeit only at 0.05 significance. This finding perhaps indicates when these risk factors are more prevalent, they increase the likelihood of transcending from suicidal ideation to suicide attempt. However, this contrasts previous research that indicates risk factors for suicide can often be more associated

with suicidal ideation as opposed to attempt (Favril & O'Connor, 2019; Favril et al, 2020c).

Risk of serious harm to self demonstrated the most power in the tool, and was the only variable to meet Bonferroni significance when comparing ideation and attempt groups. This indicates risk of self-harm as a pertinent risk factor for transcending from suicidal thoughts to suicide attempt. The presence of mental health conditions was the only variable in the tool to meet Bonferroni significance when comparing control and ideation groups, hence further illustrating its pertinence as a risk factor and highlighting the importance of mental health intervention to reduce suicidal ideation before it transcends to an attempt.

A simple summation tool was developed with a scoring system of 1 for each risk factor present (see Table 15). This tool can be used to identify vulnerabilities to suicidality and indicate to practitioners individuals who may require a suicide assessment and can be used throughout supervision sessions to assess the compound effect of multiple vulnerabilities on an individual's potential risk of suicide over time.

Table 15 *Risk factor tool for men on probation at increased risk of suicide*

Risk factor variable	Score 1 if present
Minimum score: 0	
Maximum score: 6	
Risk of serious harm to self	
Mental health conditions	
Current illicit substance	
Binge drinking within last 6 months	
Adverse experience of childhood	
Kessler-6 distress score >13	
Total	

The results compliment findings outlined within the systematic review; whereby clinical risk factors demonstrated strong association with a suicide attempt. Specifically, psychiatric disorder, illicit substance misuse, psychological distress and childhood abuse were identified as risk factors for suicide amongst all papers that utilised these variables (Brooker et al, 2021; Candarelli et al, 2014; Cook & Borrill et al, 2013; Gunter et al, 2011; Haglund et al, 2014; McCullumsmith et al, 2013; Yu & Sung, 2015a; 2015b), and this study further supports these findings. White ethnicity also demonstrated significance with suicide attempt at the 0.01 level, of which compliments systematic review findings (Cook & Borrill, 2013; Gunter et al, 2011; McCullumsmith et al, 2013; Phillips et al, 2018). Conversely, psychiatric treatment only demonstrated significance at the 0.05 level when comparing controls with attempt and ideation versus attempt group. This could be a result of low prevalence of individuals identified as taking psychiatric treatment within the sample as a whole, which was only 24%. Furthermore, alcohol misuse was not a prevalent risk factor within the systematic review, however this variable was captured less across studies. Despite this, alcohol dependence has been identified as a risk factor for individuals who attempted suicide in community corrections (McCullumsmith et al, 2013) and associated with probation staff's judgements regarding suicide risk (Cook & Borril, 2013).

Consideration of findings in the wider context of their relationship to practice, theory and the population of interest

Clinical variables feature heavily as risk factors for suicidal outcomes. This reinforces the well documented link between mental health and suicide risk, particularly in CJS populations (Webb et al, 2011) and further compounds the need for integrated mental health services within probation, whereby individuals could access specialist interventions and risk of harm to self could be more thoroughly assessed (Graney et al, 2020). Another key finding is the association between binge drinking, illicit substance use and suicidal behaviour. Substance and alcohol misuse can function as a form of coping (Najavitis et al, 2017), however can impair wellbeing and judgement

and increase the likelihood of suicide attempts (Galway et al, 2015). For probation practice, this highlights the need for effective alcohol and substance misuse intervention and harm reduction programmes integrated within the probation service.

The findings also underscore the role of adverse childhood experiences as a significant factor contributing to suicidal ideation and attempts, aligning with a wealth of research that demonstrates the lasting effects of early trauma on adult mental health (McKay et al, 2020). This is particularly relevant to people on probation, whereby many of whom come from backgrounds marked by abuse, neglect and family dysfunction (Kim et al, 2016). The findings further highlight how probation services need to be trauma-informed; ensuring that interventions not only address immediate risks of current behaviours, but also consider the long-term impact of childhood adversity. Finally, in light of the Kessler-6 distress and alcohol audit score being associated with suicidal behaviour; these are practical tools that could be integrated into routine probation assessments, alongside the six-factor tool that could be used to identify vulnerabilities to suicide that could be assessed over time. However, it is imperative the tool is used at the beginning of the care pathway to permit consideration of the compound effect of multiple vulnerabilities on an individual's potential risk of suicide, as opposed to being used as a tool to predict suicide; as per NICE guidelines (NICE, 2022)

Theory

Integrated Motivational-Volitional Model of Suicide (IMV Model; O'Connor et al, 2011)

The IMV model (O'Connor et al, 2011) views suicide as progressing through three key phases: pre-motivational, motivational, and volitional. The pre-motivational phase involves background vulnerability factors, such as adverse childhood experiences and mental health issues; both of which were significantly associated with suicidal ideation and attempts in this study. The motivational phase focuses on the

emergence of suicidal thoughts where coping skills and interpersonal stressors can become critical. Although not formally measured, the findings indicate that those experiencing high distress were more likely to exhibit suicidal outcomes; and hence may not possess coping skills to regulate distress (Panos et al, 2013). Finally, in the volitional phase, individuals move from ideation to behaviour. This transition is guided by moderators such as impulsivity, access to means, and prior self-harm. Although access to means was not captured in the study, risk of harm to self was significantly associated with suicide attempts, as was binge drinking and substance misuse; of which has been associated with impulsivity (Moeller & Dougherty, 2002).

Interpersonal Theory of Suicide (ITS; Joiner, 2005).

The ITS (Joiner; 2005) proposes that two key experiences; thwarted belongingness and perceived burdensomeness contribute to the desire for suicide, while the capability for suicide enables attempts, such as; habituation to pain and fearlessness about death. The study's findings of significant associations between adverse childhood experiences, substance use, and suicidal outcomes may reflect these concepts. Specifically, adverse childhood experiences have been associated with thwarted belonginess and perceived burdensomeness (Bhargav & Swords, 2022). Whereas, the increased risk of suicide attempts in individuals with binge drinking, substance misuse and self-harm histories could align with the concept of acquired capability; which posits that exposure to painful or provocative experiences lowers the fear of death, thereby increasing the likelihood of a suicide attempt (Baer et al, 2019; Hyum et al, 2015). Finally, problematic relationships and homelessness could exacerbate feelings of social disconnection; thwarted belongingness, and has been associated with individuals viewing themselves as a burden to society or loved ones (Chu et al, 2017).

Three-Step Theory of Suicide (3ST; Klonksy et al, 2015).

Three-Step Theory of Suicide (Klonksy et al, 2015) posits that suicide develops through three steps: pain and hopelessness, connectedness, and capability for

suicide. The first step involves experiencing psychological pain and hopelessness, a concept supported by the study's findings linking distress (measured by Kessler-6 scores) and mental health conditions to both ideation and attempts (Conejero et al, 2018). The second step of connectedness asserts that suicidal individuals will not attempt suicide if they retain a sense of meaningful connection to others (Klonsky, 2015). While this study did not directly measure connectedness, it did identify significant associations between problematic relationships and suicidal outcomes, suggesting that disrupted or dysfunctional connections may play a role in the suicidal pathway (Siddaway et al, 2015). The final step, involving capability for suicide, was supported by the finding that individuals at risk of self-harm or with a history of substance use were more likely to attempt suicide. Both self-harm and substance use can desensitize individuals to pain and increase their capability for enacting suicidal behaviours (Baer et al, 2019) consistent with 3ST.

Limitations

Although female gender has been identified as a risk factor for suicide within the systematic review, regrettably data on women was not obtained for the study due to a small number of women engaged in the service, and therefore lack of statistical power. Another limitation of the study is that suicidal outcomes were examined during a five-year period. This therefore limits assertions about the temporarily of observed associations (Favril et al, 2020c). However, as this is the first study to our knowledge to identify significant differences between those who think about suicide, and those who act on those thoughts amongst those serving a probation order, the findings can form a basis for future prospective research that can precisely report the sequence of every independent variable and outcome (Favril et al, 2020c).

Outcome variables were reliant on self-report data, of which may be susceptible to social desirability and recall bias, and suicidal outcomes were determined by a single-item assessment. Although this design is frequently utilised in custodial studies (Jenkins et al, 2005), and similar ideation-action research (Wetherall et al, 2021), the approach could bias rates of suicidal outcomes as a result of misclassification (Favril

& O'Connor, 2019). The majority of independent variables were also assessed by binary outcomes, as opposed to psychometrically validated scales, and may be subjective to probation practitioners' judgement and limits regarding what participants may wish to disclose. Finally, these findings may not be generalisable for men on probation who are not engaged with a mental health service, are high risk of harm to others, or who die by suicide; as differences have been demonstrated between nonfatal and fatal suicide attempts (Favril et al, 2020b).

As the study only included men who are already receiving mental health support and are categorised as low or medium risk, the study fails to incorporate key groups; such as high-risk individuals, those not receiving mental health support and women. This denotes a sampling bias, whereby the findings are not generalisable to the broader population of men on probation. Furthermore, men who are high risk are likely to have different, more pervasive stressors and vulnerabilities that could increase suicide risk (Scott et al, 2022). Regrettably, this could not be captured in the study as the service was based within Community Rehabilitation Companies, of which supervised low-medium risk offenders. Therefore, the results may underestimate the overall prevalence of suicidal ideation and attempts within the probation population, and implications recommended from the findings are not comprehensive in addressing the suicide prevention needs of all men on probation, particularly those with more complex or severe needs. In addition, individuals in need of mental health support, and not receiving it, are likely to be at considerable risk for suicide (Tang et al, 2022), however they were not captured in the study. As a result, the findings could overlook critical risk factors associated with suicide in the probation population. Furthermore, there could be confounding effects of only including men who are receiving mental health support; as these individuals may be receiving interventions that could reduce their suicide risk. Therefore, it is imperative that findings from the study are held within the context that this support is being received, and may not reflect the experiences of those without such support.

Implications for practice and future research

A large prospective study examining suicide in probation that utilises the ideation-to-action model would be beneficial to identify interventions in probation services to reduce suicide rates (Brooker et al, 2021). The study should obtain key clinical variables outlined within the study and systematic review, such as; illicit substance misuse, psychiatric diagnosis and self-harm risk. As self-harm was scarcely utilised as a variable in previous studies regarding suicide risk in probation settings, conflated with its strong association with suicide attempt in this study, it is highly recommended further research is completed regarding this association. It is also recommended the Kessler-6 measure of distress is reintroduced to OASys assessments due to its significant association with suicide attempt.

It would be beneficial for suicide attempts to be formally recorded on probation records so this data can be easily obtained, and risk management protocols can be adhered to. This would also enable further verification of a suicide attempt beyond self-report. It is recommended the proposed tool could be validated on a larger sample, and perhaps compare individuals on probation who are; high risk of harm to others, not engaged with a mental health service, and women, to ascertain whether further differences exist. Finally, trends elicited in this study should be considered for further research, such as; psychiatric medication and relationships with partner and family members. Results indicate that being a community order significantly differentiated individuals who thought about suicide with those who attempted suicide, albeit at .01 level, and therefore further research should incorporate these individuals. Finally, alcohol use should be utilised as an independent variable where possible.

Conclusion

This study supports the use of risk factors to identify vulnerabilities to suicidality. However, as the study is retrospective in nature, the validity of the regression tool should be treated with caution. The tool can be utilised as a means of identifying risk-based vulnerabilities for suicide and ascertaining individuals who may require a suicide assessment. It is recommended to be used at the beginning of the care

pathway, to permit consideration of the compound effect of multiple vulnerabilities on an individual's potential suicide risk. However, the applicability of the 6-factor tool for men on probation who are high risk of harm to others, not engaged with a mental health service, and indeed, women, may be in question regarding its reliability and validity. Despite this, the tool can translate directly into practice as it utilises variables routinely assessed by probation, and to our knowledge this is the first study to identify differences between those who experience suicidal ideation and a suicide attempt amongst those serving a probation order.

Chapter Four: Assessment, formulation and intervention of suicide risk for a man on probation: A single case study.

Abstract

Objectives: The Case Study sought whether Cognitive Behavioural Therapy (CBT; Beck & Beck, 2020) and Dialectical Behavioural Therapy (DBT; Linehan, 2014) informed intervention was effective in reducing suicidal ideation for a male on probation, and whether the proposed suicide tool identified in Chapter Three identified proposed vulnerabilities for suicidality

Methods: This case study formed part of recommended treatment for Client X; a 19-year-old man of White British ethnicity who has an established diagnosis of depression and bulimia (World Health Organisation, 2019). Client X was serving a Community Order for possession of a bladed article and Class B drugs, and was referred to a mental health partnership service for assessment and intervention. The intervention was guided by referral information, assessment and formulation, and Client X engaged in 12 intervention sessions that incorporated Cognitive Behavioural Therapy (CBT; Beck & Beck, 2020) and Dialectical Behaviour Therapy (DBT; Linehan, 2014) skills.

Results: Client X engaged well and demonstrated progress throughout intervention. However, progress was somewhat hindered by physical health difficulties. Therefore, although post-intervention assessment demonstrated improvement in targeted problem areas, the case study posits wider considerations regarding holistic care beyond psychological intervention.

Conclusions: Although outcomes are helpful for the field of suicide prevention, there is still much work to be completed regarding, treatment evaluation and research to reconceptualise suicide prevention treatment specifically for individuals on probation.

Ethical considerations

The case study is an account of an assessment, formulation and treatment delivered for a person on probation who was referred to a mental health partnership service assessment and intervention. Although the intervention has been compiled as a case study to fulfil the of the Forensic Psychology Doctorate, it fulfilled the client's recommended treatment pathway. The work was discussed with the client's Probation Practitioner, Psychology team members at the service, and supervised by a Forensic Psychologist throughout. The client provided informed consent for the intervention to be utilised as a case study. Please see Appendix G for Client X's consent form.

Note to the reader

Assessment, formulation, and intervention were completed by the author. The following sources of information were corroborated to inform the case study: the author's clinical notes and written reports, consultation with the Probation Practitioner and clinical supervision.

The client will be referred to as Client X throughout the case study to maintain confidentiality.

Background

Person on Probation

Client X is a 19-year-old man of White British ethnicity who has an established diagnosis of depression and bulimia (World Health Organisation, 2019). The index offence (IO) was Client X's first conviction. Client X was convicted for possession of an article with a blade or point in a public place and possession of Class B drugs, and received a Community Order of 18 months. Offender Assessment System (OASys) reports indicate that Client X was purchasing illicit substances before being apprehended by the police.

Client X disclosed a suicide attempt via means of overdose at age 16, a history of self-harm intermittently since age 15 and reported experiencing fleeting thoughts of suicidal ideation twice a week at the time of assessment. He disclosed suffering with bulimia for approximately three years, and being prescribed medication for depression; of which he reported non-compliance with for three months at the time of referral. Client X previously engaged with Child and Adolescent Mental Health Services (CAHMS) at age 15, following the onset of the eating disorder, however had not received any other prior psychological intervention. Finally, Client X experienced ongoing physical health concerns regarding his stomach and digestion.

Referral process

The service is a third sector mental health partnership service that was commissioned by Community Rehabilitation Companies (CRC) to provide psychological assessment and intervention for adults supervised by probation. Client X provided consent to be referred to the service for assessment and intervention after he presented with elevated levels of distress, as indicated by the Kessler Psychological Distress Scale (K6; Kessler et al, 2002).

An initial qualitative interview assessment was completed to identify presenting problems and develop a formulation and intervention plan. The aim of intervention

was to formulate Client X's experience of suicidal ideation, anxiety and depression with exploratory focus on emotional dysregulation as a potential contributory factor. The second aim was change oriented to incorporate skills practice to manage and reduce the presence of identified presenting problems and therefore overall risk of a subsequent attempt.

The case study permits consideration of whether the intervention utilised for Client X could be considered for the wider probation population in light of suicide prevention intervention. Furthermore, in light of the thesis as a whole, consideration was permitted to risk factors that were present with Client X, and whether the proposed tool developed in the previous chapter would successfully identify vulnerabilities for suicidality. Beyond risk factors, the case study posits consideration regarding the lived experience of a person on probation who has attempted suicide in relation to existing ideation-action theories.

Therefore, the following questions were proposed:

1. Is Cognitive Behavioural Therapy (CBT; Beck & Beck, 2020) and Dialectical Behavioural Therapy (DBT; Linehan, 2014) informed intervention effective in reducing suicidal ideation for a male on probation?
2. Would proposed suicide tool successfully identify vulnerabilities for suicidality?
3. How does the lived experience of a person on probation who has attempted suicide complement existing ideation-action theories?

Suicidal ideation within the probation population: prevalence and definition

The following section aims to provide an overview of the definition and prevalence of suicidal ideation within the probation population. Research regarding theory of suicidal ideation is limited when considering individuals on probation, however of benefit to consider in light of possible functions that could inform formulation and

subsequently intervention planning. Treatment of suicide risk for individuals on probation will contribute to intervention and formulation, and therefore is outlined in Section 3 alongside evidence-based research and intervention utilised for Client X. There is a lack of universally accepted consistent definition for suicidal ideation (SI), of which can evoke challenges for clinicians and researchers, as suicidal ideation is operationalised differently, causing difficulties in comparing findings. For example, some SI definitions encompass suicide planning, however others identify planning as a separate stage. Despite this, SI appears to occur in a 'waxing and waning manner' (p2; Harmer et al, 2023), therefore the characteristics and extent of characteristics may oscillate, and it is imperative SI is conceptualised for its heterogenous nature. For the purpose of the case study, SI was operationalised as any suicidal ideas or thoughts, of which encompassed a scope of preoccupations, wishes or contemplations with suicide and death (Harmer et al, 2023), as discussed and agreed with Client X.

As demonstrated throughout the thesis, studies repeatedly demonstrate how individuals on probation demonstrate increased risk of suicide death (Sattar, 2003). However, when we consider SI specifically, Pluck & Brooker (2014) found that 30% of individuals on probation reported experiencing suicidal ideation at a point in their life. Furthermore, a seminal study regarding suicide of individuals on probation reported that approximately a third experience suicidal ideation (Akehurst et al, 1995). However, it has been found that there is a small percentage of individuals in custody who disclose suicidal ideation to professionals (Slade et al, 2014), and therefore this finding is likely an underestimate.

The three-step theory (3ST) is an ideation-action theory of suicide (Klonsky et al, 2015). Step 1 indicates that pain, typically psychological, combined with hopelessness causes suicidal ideation. When life is aversive, painful or miserable, this can encourage a desire to evade life. Furthermore, if an individual feels hopeless that pain can be alleviated with effort or time, focus may begin to shift onto attempting suicide (Klonsky et al, 2018). Specifically, step 2 of the model indicates that ideation

intensifies when pain surpasses feelings of connection, meaning or purpose. The final step proposes that ideation transcends into action once capacity is gained to attempt suicide. This could include dispositional contributors, such as; low fear of death, acquired contributors, such as; habituating to fear and pain involved in self-inflicted violence, and finally, practical contributors, such as access to lethal means (Klonsky et al, 2018).

Regarding the probation population, the presence of SI has been found to reflect feelings of hopelessness (Chin & Holden, 2013), maladjustment and life stressors (Fizpatrick et al, 2007; Yu & Sung, 2015a). In addition, individuals who experience SI often demonstrate illicit substance misuse, high unemployment rates, depression and a history of suicide attempts (Yu & Sung, 2015a; 2015b). Although insight regarding correlates of suicide informs suicide understanding and prevention, it is important to understand personal motivations for suicidal ideation or attempts when tailoring intervention for an individual (Klonsky et al, 2018). If we can identify the motivation for an attempt, or the function of SI, we can explore alternative solutions that may reduce overall suicide risk. Beyond the individual, such knowledge may help inform the development of suicide intervention and prevention programmes.

Assessment, analysis and formulation

A review was conducted of Client X's OASys report and consultation was conducted with their probation practitioner to familiarise the author with Client X's background and possible problems that could contribute to the function of suicidal ideation, offending behaviour and mental health difficulties.

Qualitative clinical interview, file review and intervention sessions were utilised to obtain precise details and history of Client X's suicide risk; including any previous attempts, experience of suicidal ideation and self-harm. Subsequently, assessment

measures and qualitative clinical interview were completed to collate relevant information to inform formulation and intervention plan.

Beck Anxiety Inventory (BAI; Beck et al., 1988)

The BAI consists of 21 items that measure anxiety severity. Each item is rated, using a 4-point scale: 0 (not at all) to 3 (severely) (Beck et al, 1988). The total raw-score sum across all 21 items indicates severity of anxiety, ranging from 0 to 63. The BAI has been widely used in forensic, clinical, non-clinical populations, and has high internal consistency reliability demonstrated (α=.92; Beck et al, 1988) and good test re-test reliability (ICC = .75; Beck et al, 1988) with a sample of outpatients. Furthermore, the tool has good content validity with generalised anxiety disorder (.85) and significantly correlated with other measures of anxiety, such as; The Hamilton Anxiety Rating Scale – Revised (.51; Riskind et al 1987) with a clinical sample.

Client X scored 22, of which indicates the presence of moderate anxiety at the time of assessment. Specifically, Client X reported feeling severely affected by the following item: fear of the worst happening, and moderately bothered by the following items; numbness or tingling, wobbliness in legs, feeling dizzy or lightheaded, feeling faint/lightheaded and face flushed. Therefore, catastrophising and managing physical symptoms were considered key areas to address within the intervention plan.

Beck Depression Inventory-II (Beck et al, 1996)

The BDI-II consists of 21 items on a 4-point scale from 0 (symptom absent) to 3 (severe symptoms), and includes symptoms regarding the DSM-IV criteria for major depression (Beck et al, 1996). The total raw-score sum across all 21 items ranges from 0 to 63 with higher scores indicate greater symptom severity. BDI-II internal consistency has been reported at α.92 and test-retest at .82 amongst a sample of outpatients (Beck et al, 1988). With respect to convergent validity of the BDI-II, it is reported to be positively related to the Hamilton Psychiatric Rating Scale for

Depression (r =.71; Steer et al, 1987) of which has been positively associated to depression (Trajković et al, 2011).

Client X scored 44, of which indicated the presence of severe depression at the time of assessment. Specifically, Client X reported experiencing feelings of pessimism, loss of pleasure, self-dislike, loss of interest, loss of energy, changes in appetite, tiredness or fatigue and suicidal thoughts. Major depressive disorders are a common comorbid diagnosis in patients with eating disorders (Becker et al, 2014), and therefore could partially explain elevated scoring.

CORE-34 Clinical Outcome Measure (CORE-OM; Evans et al, 2002)

The CORE-OM is a global measure of distress to assess therapeutic outcomes (Evans et al, 2002). Client X responded to 34 questions regarding how they have been feeling over the last week, using a 5-point Likert scale ranging from 1 (not at all) to 5 (most of the time). The items incorporate the following dimensions: subjective well-being, problems/symptoms, life functioning, and risk/harm, producing an overall score called the global distress score. Internal consistency has been reported at α= .94 amongst a clinical sample and the tool has demonstrated good convergent validity ranging from .63-.85 (Evans et al, 2002).

Client X's global distress score was 2.08, of which was above average comparative with a male clinical sample (Core System Group, 2002). Client X reported experiencing distress specifically in relation to problems (i.e. symptoms), subjective well-being and risk to self. Thus, specifically reporting distress in relation his experience of anxiety and depression, feeling overwhelmed and pessimistic regarding the future. In addition, the scale indicated that Client X experienced thoughts such as 'it would be better if I were dead' and had experienced thoughts of hurting himself.

Depression, Hopelessness and Suicide Scale (DHS; Mills & Kroner, 2004)

The DHS was developed to screen for the presence of depression, hopelessness, and indicators of risk for suicide (Mills & Kroner, 2000). It is a 39-item instrument that requires true or false responses, with greater scores indicating a increased likelihood of the presence of measured concepts. Internal consistency is reported as good (α =.90) amongst a prison sample (Mills & Kroner, 2000) and the scale has demonstrated to be strongly related to the Beck Depression Inventory (.71; Beck et al, 1988) and Beck Hopelessness Scale (.63; Beck et al, 1974) amongst an offender sample. Furthermore, the tool has demonstrated a significant correlation with the Beck Hopelessness Scale (Beck et al, 1974) regarding suicide criteria amongst an offender sample (.21). and significant correlations with prior self-harm and suicide attempts (Mills & Kroner, 2000).

Client X scored 15 for the depression scale and 6 for hopelessness, with are above average when comparing with male offender means (Mills & Kroner, 2000). Therefore, Client X reported thoughts and feelings associated with failure, sadness and disappointment, a lack of energy, difficulties sleeping and loss of appetite. As Client X had elevated scores on all scales, this demonstrates a preoccupation with bodily aches and pains and physical symptoms (Mills & Kroner, 2000). However, these symptoms can be related to physical illness that reflect symptoms consistent with depression (Mills & Kroner, 2004), of which Client X reported. Client X also demonstrated being distrustful of others and expressed a low opinion of self. Regarding suicide indicators, Client X scored 1 for Cognitive Suicide Indictors (i.e. cognitive permissiveness of suicide as an option; Mills, 2004), 4 for Historical Suicide Indicators, and 1 for Current Ideation Indicator. This included, but was not limited to; 'I have had serious thoughts of suicide in the past, 'my situation is hopeless' and 'I have intentionally hurt myself'.

Formulation

In Client X's OASys it indicated that Client X reported carrying a knife for his own protection, as he often felt unsafe when alone and outside. This indicates that his threat response may be overactive, and therefore a CBT formulation was used.

Furthermore, from initial qualitative interview it was hypothesised that suicidal ideation may have been utilised as a form of coping. Therefore, a CBT formulation assisted in understanding the association between thoughts, feelings and behaviours of interest.

Formulations comprised of the 5 P's model (Weerasekera, 1996) and a longitudinal CBT case formulation (Beck, 1979) that enabled a cross-sectional component to consider thoughts, feelings, behaviours and physical sensations. See Appendix H and I. This felt appropriate due to physical sensations featuring heavily on Client X's psychometric scoring. Furthermore, use of the longitudinal formulation assisted in permitting attention to links associated with underlying beliefs, and patterns of thinking and behaving (Beck, 1979).

Presenting problem

The problematic behaviour of interest was identified as the presence of suicidal ideation, anxiety and depression. Client X disclosed a single suicide attempt at age 16, self-harm via means of cutting six months prior to assessment and fleeting thoughts of suicidal ideation occurring twice a week. Therefore, he could be at risk of harm to self (Baca-Garcia et al, 2011). He identified the onset of self-harm and suicidal ideation occurring at a similar time to the onset of his eating disorder at 15 years old. In addition, Client X carried a knife and was arrested for possession of a bladed article and possession of Class B drugs. It is proposed therefore that lack of emotional regulation skills may have increased reliance on maladaptive coping mechanisms.

Predisposing factors

Client X reported a turbulent relationship with his father throughout his childhood. He disclosed being the victim of physical abuse and witnessed domestic violence against his mother; both perpetrated by his father. He disclosed witnessing his father use crack cocaine at age 6, and recalled vivid memories of finding his father unconscious and feeling fearful and panicked he had died. These experiences may

have promoted feelings of being under threat, unprotected, and hence disrupted attachment security (Bowlby, 2012). As Client X lacked stable early caregivers, he may have found it difficult to learn and develop healthy coping strategies to manage his emotions. Furthermore, exposure to likely overdose and violence at a young age may have promoted normalisation of these means as a form of coping.

Client X described often trying to impress his dad to gain his approval, however often felt let down, 'not good enough' and as though his mum did not intervene. It is hypothesised this may have perpetuated a lack of a sense of being cared for, validated and protected may have prevented Client X developing a positive view of himself or a capacity to understand and manage his emotions. Hence, possibly experiencing emotions as overwhelming and resorting to maladaptive coping strategies such as suicidal ideation and self-harm. Furthermore, as he was distrustful of his caregiver and felt unsafe in the family home, this could have contributed to beliefs that he cannot rely on others for support.

Client X frequently truanted from school and misused substances in early adolescence. This may have developed as a result of him feeling uncontained with a lack of boundaries and possibly safety. Client X's use of substances could have also resulted in an increased exposure to contexts in which he might have to resort to violence, and hence increased reliance on the need for a physical weapon; as seen in the context of the IO. Furthermore, truanting from school was understood as a means of escapism to isolate himself as a form of protection.

Precipitating events

Client X reported being bullied at the start of secondary school regarding his weight, and identified this as a contributory factor of the onset of his eating disorder. This experience may have perpetuated feelings of low self-esteem and worthlessness, and is likely to have further contributed to the presence of self-harm, suicidal ideation and suicide attempt via overdose of which occurred at a similar time (Brausch & Gutierrez, 2009). A recent meta-analysis found victimisation from

bullying increases the odds of suicidal ideation and behaviour by approximately 2-4 (Holt at el, 2015). Subsequently, Client X reported self-harming to relieve distress and self-punish, and this may have provided an opportunity to externalise his emotions towards himself as the perceived cause of distress and habituated fear and pain regarding self-inflicted violence (Klonsky et al, 2015). Furthermore, Client X reported experiencing rumination and catastrophising thoughts, and identified how suicidal ideation provided comfort he could escape from pain (Klonksy et al, 2016).

Client X reported hiding his emotions to protect his mother, not eating and exercising excessively, and self-harming routinely prior to the suicide attempt. He also experienced stressors from bullying and failing academically and feelings of hopelessness. At this time, Client X reported feeling unsafe and uncared for and was self-isolating and truanting school; and therefore, likely felt a lack of connection with others. Joiner et al's (2005) interpersonal theory identified thwarted belongingness and perceived burdensomeness as interacting to promote desire for suicide, and the role of hopelessness is well documented within the suicide pathway (Abramson et al, 1989; Klonsky et al, 2016).

Client X disclosed being robbed at knife point approximately six months prior to the IO, and reported a subsequent increase in suicidal ideation and self-harm. Client X reported experiencing emotional and psychological pain following being violently mugged of which curated feelings that felt intolerable to manage. Therefore, perhaps pain was viewed as inescapable whereby suicide presented as an option to alleviate distress (Klonsky et al, 2016). This can be understood as attentional fixation (Wenzel et al, 2009), whereby an individual experiences difficulties problem-solve problems that cause deep emotional pain. He reported feeling overwhelmed and depressed, and had thoughts such as 'I am a burden' and 'people would be happier without me'. These thoughts reflect feelings of hopelessness, and may indicate a consequence of a lack of problem solving and beliefs activated related to negative expectations (Matthews, 2013).

Client X shared distressing memories of bystanders onlooking and not intervening to help during the mugging, and it appears this event increased anxiety, low mood, suicidal ideation and resorted in him using a knife for protection. It is hypothesised this experience, conflated with adverse early life experiences, may have promoted feelings of helplessness and cemented the belief that he cannot rely on others for his own protection (Fowler et al, 2013). Consequently, Client X reported feeling hypervigilant and unsafe when alone and outside, and therefore possession of a knife perhaps supported him to feel 'in control' of his own safety. Finally, Client X reported core beliefs such as: 'I will never not be depressed' and rules for living such as; 'I can never trust anyone, no one will protect me'. These cognitive processes appeared to further trigger suicidal ideation.

Perpetuating factors

Client X reported feeling unsafe without external protection, whether that be from a weapon or primary care givers. As Client A reported not carrying a weapon, he appeared to have further adopted physical isolation as a further coping mechanism to soothe a sense of feeling a lack of control and being unprotected by others. However, isolation may have prevented adaptive ways of coping and strengthened the core belief that the world is unsafe.

Client X presented as ambivalent regarding his need for medication and altering his cannabis use. Cannabis use can exacerbate symptoms of anxiety and depression, yet also be used as a form of self-medication (Wallis et al, 2022), of which Client X identified with the latter. Therefore, he presented as unmotivated to alter his cannabis use. However, cannabis smoking has been found to increase the risk of suicide ideation and attempt in young people aged 11 – 21 years (Fresán et al, 2022), and medication alongside CBT is recommended when anxiety and depression scores are severe (National Institute for Health Care and Excellence, 2011). Therefore, psychoeducation on cannabis use and medication compliance was considered in intervention planning.

As Client X identified experiencing comfort when considering suicidal ideation as a 'way out', it is proposed that perhaps suicidal ideation was utilised as a coping mechanism. Suicidal ideation, and expressive acts of suicide, could have functioned as communicating distress, although it appeared to provide Client X an opportunity to escape life stressors and avoid dealing with difficult circumstances (Mathew & Nanoo, 2013). However, reliance on suicidal ideation as a means to cope can prevent opportunities to learn adaptive ways of coping and address areas in life that may be contributing to low mood and hopelessness.

Protective factors

Client X reported a supportive relationship with his mum, of which helps him 'think more clearly'. At the time of intervention, he engaged well with his probation practitioner, and presented as motivated to address mental health difficulties. He reported not actively self-harming throughout intervention, nor did he plan a suicide attempt. Client X is also a young adult at 19, and prompt access to psychological services following the onset of depressive symptoms can promote more effective treatment outcomes (Davey & McGorry, 2019).

Intervention

Theoretical background to treatment and links with formulation

Intervention to manage suicide risk recommends a collaborative, non-judgemental approach to develop a strong therapeutic rapport and collaboratively developing an intervention plan (Jobes, 2006). Therefore, it felt important to identify Client X's treatment goals, of which are surmised below:

1. Reduce anxiety
2. Improve mood
3. Reduce suicidal thoughts

Suicidal thoughts and behaviours have been reported as difficult to treat, with a lack

of gold-standard treatment (Harmer et al, 2023). Hence, few evaluation studies exist, let alone for community-based programmes for male offenders. Despite this, some interventions have demonstrated some evidence in reducing suicidal thoughts and behaviours.

Dialectical behaviour therapy (DBT; Linehan, 1993) is a multimodal treatment that was originally developed for individuals with self-harm and suicidal behaviours, and incorporates behavioural and acceptance-based strategies (Klonsky et al, 2016). DBT draws attention to how self-harm and suicide are perceived as a means of coping with emotional suffering through means of escapism, and over time can become an automatic response (University College London, 2023). Therefore, suicidal behaviour can be understood as a problem-solving technique to alleviate negative emotional arousal, and indicates low capacity for emotional regulation and distress tolerance (University College London, 2023). Client X reported feeling overwhelmed during his experience of suicide attempt and self-harm, and DBT aims to improve capacity for self-regulation and tolerance of distress.

Cognitive-Behavioural Therapy (Beck & Beck, 2020) is recommended to explore suicide as resulting from an individual's sense of hopelessness and dysfunctional automatic thoughts (Klonsky et al, 2015). Therefore, suicide is also identified as a problem-solving solution. In the instance of Client X, this is to escape pain. It is proposed to address hopelessness and challenge the belief that the client's situation cannot improve, through introducing evidence that challenges their core beliefs. Furthermore, attention can be paid to thought patterns that exacerbate distress and reduce capacity for more rational decision making and skills can be incorporated for self-soothing to reduce attentional fixation and physiological arousal (University College London, 2023). This enables attention to be shifted to decrease the intensity of distressing emotions and hence reduce the likelihood of suicidal behaviour.
The intervention aimed to explore automatic thoughts and regulation difficulties that may underlie core beliefs such as 'I will never not be depressed', 'No one will protect me' and 'the world is unsafe'. Emotion regulation techniques, such as; identifying

and disrupting negative thoughts were incorporated with the use of homework and worksheets. The intervention therefore conceptualised carrying a weapon, isolation and suicidal ideation as a learnt behaviour and maladaptive coping mechanisms for Client X. Furthermore, intervention considered the relationship between thoughts, feelings and behaviour and how to regulate overwhelming emotions (University College London, 2023).

In conclusion, under close supervision and discussion with Client X, it was decided a CBT informed treatment that incorporated DBT skills would be suitable to address Client X's treatment goals. The intervention permitted exploration of alternative coping skills to manage triggering events and reduce the presence of anxiety, low mood and suicidal ideation as a hypothesised coping mechanism.

Intervention overview

Client X attended 15 sessions; three of which were pre and post assessment sessions. Each session was facilitated by the author and was one hour in duration. The intervention was tailored to the goals of Client X, and incorporated CBT and DBT techniques with a focus on emotional regulation. The aim was to manage difficult emotions triggered by distressing situations, and increase awareness of thoughts, feelings and behaviours associated with feelings of anxiety, depression and suicidality. The intervention also incorporated CBT and DBT based skills to help Client X learn ways of coping with triggers to tolerate anxiety and depression and reduce reliance on maladaptive coping mechanisms, such as; self-harm and suicidal ideation. Due to the time frame of the intervention, it felt appropriate to utilise DBT informed work that incorporated skills that are both acceptance and change-focused (Koerner, 2013), as opposed to comprehensive DBT.

Unfortunately, research regarding the treatment of men on probation with increased suicide risk is limited (Sirdfield et al, 2020). However, aforementioned research regarding treatment efficacy for suicide risk in general population was consulted.

Beyond this, the below resources were utilised to develop intervention alongside discussions with Client X regarding what he found helpful.

1) Formulation: Collaborative formulation helped Client X to reflect on factors that have increased his vulnerability and make sense of thoughts, feelings and behaviours associated with presenting problems.
2) Psychology Tools (Psychology Tools, 2020). The resource was utilised for worksheets to manage presenting problems, for example; to identify triggers, thought challenging exercises and psychoeducation regarding pros and cons of cannabis use and medication compliance.
3) Specific dialectical behaviour therapy (DBT) techniques for working with people who self-harm or are suicidal (University College London, 2023). The resource was helpful to identify CBT and DBT informed techniques that have demonstrated relevance and efficacy for reducing suicidal ideation.
4) Mental health partnership Living Skilfully Group intervention: Resources were adapted from the STAH group intervention to incorporate relevant DBT skills.
5) Supervision: Supervision with a qualified forensic psychologist was held on a weekly basis throughout the facilitation of therapy. Supervision session assisted development of the intervention structure, and therapeutic content and process were reflected upon.

Intervention did not follow strict modules, although was integrative in its approach. Therefore, approaches overlapped and were often informed by what Client X brought to the session, and some aspects featured more heavily throughout intervention. For example, CBT formulation to identify thoughts, feelings and behaviours associated with relevant triggers were often explored, and then appropriate skills were considered in relation to how Client X could have responded differently. Furthermore, we reflected on Client X's experience of suicidal ideation and instances leading to the IO and suicide attempt. This helped to increase insight and understanding regarding the function of both suicidal ideation and offending behaviour, and permitted consideration of how to reduce risk of future perpetration

and suicide attempt. Each intervention component is briefly outlined below, and examples of materials utilised are attached in labelled appendices.

1. Psychoeducation: Psychoeducation regarding suicidal ideation, depression and anxiety, such as; what they are, and cycles that can perpetuate their presence. This also included information regarding the stress response, the bio-psycho-social model, and pros and cons of cannabis use and medication compliance.
2. CBT: Incorporation of CBT enabled opportunities to challenge hopeless automatic negative thoughts regarding demonstrated core belief that the world is unsafe and address personalised goals. CBT incorporated identifying triggers, cognitive distortions, current coping mechanisms, and indicators that Client X may be at increased suicide risk. CBT incorporated techniques to manage feelings of hopelessness with the aim to improve problem solving to prevent reliance on maladaptive coping mechanisms.
3. DBT: DBT was incorporated as alternative coping mechanisms, such as; mindfulness and distress tolerance skills.
4. Signposting: As Client X had physical health difficulties, and was not accessing his prescription for anti-depressants, his GP was contacted to initiate a repeat prescription of psychotropic medication and access an eating disorder specialist. See Appendix J.

Therapeutic process

To develop trust within the therapeutic relationship, it is proposed the therapist should enquire regarding what led the client to feel like suicide was the only option with the purpose of gaining understanding (University College London, 2023). Client X was forthcoming regarding discussing suicidal ideation, however at times lacked some insight regarding triggers of the onset of the suicide attempt. I considered whether there was some resistance to discuss these in detail, and therefore did not push Client X to reflect on this incident if he presented as resistant. Although discussing suicide has been found to not increase suicide risk, and can even reduce

suicidal ideation (Dazzi et al, 2014), I was mindful this could be re-traumatising or distressing in nature. I believe my hesitation may have been compounded by Client X's young age, and perhaps that I viewed him as vulnerable and was mindful of his general sense of feeling unprotected. Therefore, perhaps I felt a need to protect Client X. However, I further reflected on whether this was helpful within supervision, and how this could perpetuate his view of helplessness.

Results

Client X demonstrated steady progress across intervention, and reported qualitative improvements in treatment goals. In light of pre and post intervention improvements, some changes are illustrated via statistical change in pre and post assessment measures. Whereas, other improvements are based on observation, or inferred from his self-report, presentation and attitude.

Psychometrics

Pre and post psychometrics demonstrate improvements in wellbeing and functioning that could be attributed to psychological intervention. As section 2 outlines details regarding psychometric assessment measures, hence forth will discuss findings and interpretation of these measures. See Table 16 for comparative psychometric results pre and post intervention.

Client X's score on the BAI and BD-II decreased post-intervention, of which indicates a reduction in severity of anxiety and depression symptoms. However, the change in scores pre and post intervention were not significant in relation to the reliable change index (Beck et al, 1996; Beck et al, 1998). It is proposed Client X gained skills to better regulate symptoms of anxiety and depression, and furthermore managed triggers in a more adaptive manner to reduce the onset and degree of the presence of symptoms. It is of note that although Client X's BDI-II scores indicate an improvement, the score still indicates the presence of severe depression. However, it is proposed this could be indicative of Client X's eating disorder and ongoing physical health difficulties, of which were not directly targeted in intervention.

Despite this, results indicated Client X was more hopeful regarding his future and experienced less feelings of self-loathing and worthlessness.

Client X's score on the DHS demonstrate a reduction in depression, hopelessness and suicidal ideation and cognitive indicators. However, scores still demonstrated elevated depression and hopelessness scores. It is of note, however, as outlined with the BDI-II, that some symptoms may reflect symptoms of physical illness and eating disorder. Despite this, Client X's answers reflected he felt more hopeful for the future, denied suicide as an option for the future, and agreed his life was worth living. Therefore, despite depression and hopelessness scores being elevated, hopelessness scales had the most significant improvement. Furthermore, the critical item checklists encompass historical suicide indicators, and therefore would not demonstrate change over time.

Finally, Core-34 indicates a reduction in risk to self and others, and less distress related to subjective functioning, symptoms and wellbeing. Specifically, there was the most reduction in the symptom and risk sub-scales, however these did not demonstrate statistically significant change within reliable change index (Evans et al, 2002). Despite this, Client X reported feeling less despairing, less panicked and more able to complete important tasks. In addition, scoring indicated a reduction in thoughts associated with self-harm and suicidal ideation.

Observations

Observations by the author were only completed once a week during intervention, of which demonstrates a limitation of the case study. However, his PP reported that Client X presented with improvements in mood, a reduction in anxiety and increased compliance with unpaid work. Client X's post treatment feedback indicate he was highly satisfied with the intervention, and he reported progress in his ability to manage emotions, deal with problems and confidence to use skills acquired in intervention. See Appendix K. Client X self-reported a reduction in incidents of suicidal ideation and self-harm, as supported by psychometric scoring

Table 16*: Comparative Pre and Post Psychometric Assessment Results*

Psychometric	Subscale	Pre-Intervention		Post intervention	
		Score/ Percentile	Interpretation	Score/ Percentile	Interpretation
Beck Anxiety Inventory		22	Moderate	15	Mild
Beck Depression Inventory		44	Severe	30	Severe
Depression Hopelessness Suicide Scale	Depression	15	Above average	10	Above average
	Hopelessness	6	Above average	4	Above average
	Cognitive	1		0	
	Historical	4		4	
	Ideation	1		0	
CORE-34	Well-being (W)	2	Below average	1.5	Below average
	Problems or Symptoms (P)	2.4	Above average	2	Below average
	Functioning (F)	1.8	Below average	1.2	Below average
	Risk (R)	2.3	Above average	1.3	Below average
	All items	2.08	Above average	1.5	Below average

Discussion

Overall, Client X demonstrated a reduction in anxiety, depression, and suicidal ideation, of which was reflected in psychometric scoring, presentation and self-report more broadly. Therefore, although there is a lack of gold-standard treatment for suicide prevention (Harmer, 2023), let alone within the probation population, results are promising for the efficacy of CBT and DBT informed intervention for reducing suicidal ideation amongst the probation population. However, it is imperative each case is formulated individually to compose an intervention plan. Results are also supportive of utilising CBT and DBT informed intervention to improve emotional regulation amongst the probation population, which in turn could reduce reliance on maladaptive coping mechanisms of self-harm and the presence of suicidal ideation also as a symptom of depression.

The case study illustrates how intervention reduced feelings of hopelessness and the presence of suicidal ideation, of which there is an established significant relationship found in forensic and general population samples (Chin & Holden, 2013; Yu & Sung, 2015a). Therefore, it is proposed hopelessness is an important feature to consider when formulating the presence of suicidal ideation or associated risk behaviours. Furthermore, life stressors have demonstrated association with the presence of suicidal ideation (Fitzpatrick et al, 2007), and in this instance encouraged suicidal ideation to transcend into a suicide attempt. Therefore, emotional regulation intervention can further assist to help manage associated stressors and hence reduce the likelihood of suicidal thoughts or behaviours as a form of coping.

The case study could be improved by utilising a formal measurement regarding the incidence of suicidal ideation, or perhaps using a formal psychometric such as the Beck Suicide Scale (Beck et al, 1988). Not only would this have supported intervention to gain further insight into the severity and frequency of suicidal ideation, but it would have promoted more rigorous results in determining whether

intervention was successful in reducing the frequency of suicidal ideation and would have enabled formal tracking of self-harm and suicidal thoughts or behaviours.

The findings from the case study support the three-step theory (3ST) of ideation-action, whereby Client X associated feelings of psychological pain and hopelessness with feelings of suicidal ideation (Klonksy et al, 2015). Furthermore, when discussing his previous suicide attempt, he identified how pain experienced felt somewhat insurmountable and the prospect of taking his own life appeared as a solution for pain to be alleviated. It is of note at the time of the attempt, Client X was highly isolated, not attending school, and reported a lack of meaning and purpose, of which further supports the theory regarding sense of thwarted belongingness and perceived burdensomeness. Client X also engaged in self-harm via means of cutting, of which could have habituated his fear and pain regarding self-inflicted violence, and was able to acquire means to attempt suicide through acquiring medication to attempt to overdose (Klonksy et al, 2015).

The previous thesis chapter developed a proposed tool to identify vulnerabilities for suicidality. If we were to apply the tool to Client X, he would be identified at increased risk of a suicide attempt as he scored above 3. This further supports the validity of the tool, as we know Client X attempted suicide prior to intervention. However, further validity and reliability of the tool should be tested on a larger probation sample. See Table 17 for Client X's completed tool that utilised data from his OASys assessment, however ideally the tool should be utilised throughout supervision to consider the compound effect of multiple vulnerabilities on an individual's potential risk of suicide.

Table 17*: Client X's completed proposed regression tool*

Risk factor variable	Score 1 if present
Minimum score: 0 Maximum score: 6	
Risk of serious harm to self	0
Mental health conditions	1
Current illicit substance	1
Binge drinking within last 6 months	0
Adverse experience of childhood	1
Kessler-6 distress score >13	1
Total	4

The use of the tool within the case study highlights subjectivity within the OASys assessment process. For example, his OASys indicates there are no problems regarding concerns of risk of serious harm to self. Although this may reflect Client X's presentation at the time of assessment, he has a historical suicide attempt, previous self-harm and current suicidal ideation. Therefore, one could argue perhaps 'risk of harm to self' should be indicated as present. However, this further illustrates the flexibility of the tool, and its importance of being utilised in real-time by probation practitioners. Either way, the tool may demonstrate effectiveness in identifying vulnerabilities to suicidality, of which has been demonstrated in this case study.

As with any single case study, the findings from this case may not be representative for other individuals on probation and therefore cannot account for variability demonstrated in larger populations. Client X's specific diagnoses (i.e. depression and bulimia), his demographic background (19 year old White British male), and his single, non-violent offence create a narrow context that may not apply to others with different profiles. Client X served a community order, which is a relatively less restrictive punishment compared to being on license. This context could positively influence the effectiveness of the intervention by reducing stressors associated with

license conditions and prison environment that could exacerbate suicidal ideation (Scott et al, 2022). Furthermore, Client X is only 19 years old and only has been convicted of one offence, and therefore is likely not to reflect the experiences of those with more complex criminal histories, repeat offences, or violent crimes and additional mental health conditions. These factors could significantly affect the individual's mental health, risk of suicidal ideation and responsiveness to intervention (Webb et al, 2013). Finally, Client X being white British may limit relevance of findings for individuals from different ethnic or cultural backgrounds; as there will likely be difference in how individuals experience mental health, access support and respond to interventions (Hamai et al, 2005).

Consideration of findings in the wider context of their relationship to practice, theory and the population of interest

Client X's outcomes underscore potential effectiveness of targeted psychological interventions within probation settings, and further strengthen the argument made throughout the thesis regarding the value of embedded psychological services within probation to reduce suicidal outcomes. Effective mental health care not only reduces distress for the individual, but may also reduce the likelihood of reoffending or engaging in harmful behaviours, supporting wider goals of probation services (Lamberti, 2016). Furthermore, Client X's report of feeling able to manage his emotions and problems more effectively could indicate a growing sense of empowerment. This is a critical outcome for probation clients, who often feel disempowered by the CJS (Larson Sawin & Zehr, 2016). Although there was a lack of statistically significant changes, the reductions in symptoms of anxiety, depression and hopelessness, alongside Client X's self-report and observed improvements reflect meaningful progress. However, the persistent presence of severe depression, as reflected in Client X's psychometric scoring, highlights a challenge of working with clients who have complex overlapping issues, such as; mental health disorders, eating disorders and physical health problems in the case of Client X. Therefore, it is crucial to recognise that although psychological interventions can address certain

aspects of distress, underlying health conditions may require further specialised treatment. Therefore, liaison with healthcare practitioners is imperative, alongside a holistic approach to intervention and supervision. People on probation face unique barriers to accessing and engaging with healthcare services (Brooker et al, 2020), and therefore may require additional support accessing these services.

Theory

The Integrated Motivational-Volitional Model (IMV; O'Connor et al, 2011)

The IMV (O'Connor et al, 2011) posits that suicidal behaviour emerges from motivational factors such as defeat, humiliation and entrapment and volitional factors that increase capacity and opportunity to act on suicidal thoughts. The results indicate improvements in emotional regulation skills, which could be a crucial motivational factor to regulate feelings of defeat, humiliation and entrapment (Barton et al, 2023). Furthermore, reduction in anxiety symptoms could help reduce ruminative processes (Abdollahi et al, 2019), another key motivational factor, and skills generally may help to reduce impulsivity, a key volitional factor (Aguilar-Yamuza et al, 2024). Client X's reported feeling better equip to manage distressing emotions, of which may enhance his ability to not utilise suicidal ideation as a coping mechanism, or act on these thoughts. The intervention more broadly indicates how building hope and self-worth can reduce incidence of suicidal ideation while also providing coping and problem-solving skills; of which can target factors identified in the IMV model (O'Connor et al, 2011).

Interpersonal Theory of Suicide (ITS; Joiner, 2005).

The Interpersonal Theory of Suicide (Joiner, 2005) posits that suicidal behaviour results from the interaction of three core components: perceived burdensomeness, thwarted belongingness, and acquired capability for suicide. Client X's reported feelings of hope and decreased suicidal ideation could indicate a reduction in perceived burdensomeness, as demonstrated in previous research (Umphrey et al, 2020). While the increase in compliance with unpaid work might indicate greater

engagement with social structure and support systems, reducing the issue of thwarted belongingness. These findings underscore the importance of interventions addressing social connectedness and demonstrate how feelings of belonging can be particularly helpful to mitigate risk (You et al, 2010). Facilitating community engagement and enhancing supportive relationships may help to reduce risk of suicide by directly targeting components of the ITS theory (Joiner, 2005).

Three-Step Theory (3ST; Klonsky et al, 2015).

The 3ST (Klonsky et al, 2015) posits that suicidal behaviour is influenced by a sequence of cognitive and emotional processes involving pain, perceived inability to cope, and the capability to enact suicidal behaviour. The observed decrease in anxiety and suicidal ideation could suggest a reduction in emotional pain and distress (Conejero et al, 2018), which aligns with the first step of the 3ST. Client X's reported progress in managing emotions indicates an increased ability to cope with emotional distress, reflecting movement towards the second step of the theory. Furthermore, the reduction in despair and panic could indicate developing capacity to handle distressing situations without resorting to self-harm or suicidal actions (Neacsui et al, 2017). This underscores the importance of enhancing coping skills to interrupt the potential progression towards suicidal behaviour. Such strategies can help clients articulate their pain and develop constructive coping mechanisms to mitigate risks and promote better outcomes.

Future directions

Psychological intervention tends to focus on therapy as a core factor of intervention, such as skills practice. This has high efficacy in improving outcomes amongst individuals, including the probation population, and individuals who experience increased suicide risk (D'Anci et al, 2019), and therefore is pertinent to consider when an individual is at increased risk of suicide. However, the case study also proposes that attention should be paid to the context whereby distress arises. This is particularly pertinent when we consider the presence of risk factors, such as deprivation and physical health problems. Although management of symptoms is

important to improve client's self-efficacy in managing their distress, we must not ignore deep-rooted problems that may contribute to distress. Specifically, perhaps we should refrain from locating an issue within the client, or pathologizing what could be a likely consequence of a series of deleterious influences in their life and promote holistic care.

It is proposed significant differences were not found in psychometric results due to the presence of eating disorder, physical sickness and time restrictions of the intervention. Therefore, additional support was encouraged to further assist improvements in mental well-being and life satisfaction. The author liaised with Client X's GP regarding a referral to a gastroenterologist specialist to help alleviate physical sickness and an eating disorder specialist. Efforts were also made to consider what could improve Client X's connectedness with his friends, family and local community beyond intervention. This involved collaborative planning of how Client X could spend more time out of isolation in a way that felt safe, and attain small goals as set with his probation practitioner. Furthermore, his probation practitioner was supported through consultation to finalise a collaborative safety plan with Client X to inform risk management post intervention.

Conclusion

The case study utilised CBT and DBT informed intervention to develop a person-centred intervention for Client X. Results indicated improvements in levels of anxiety, depression, and suicidal ideation. Overall, the outcomes are promising for the use of CBT and DBT when treating the presence of suicidal ideation with the probation population. However, it is proposed that the context by which suicidality arises should also be considered beyond the implementation of skills practice. For example, Client X experienced physical health difficulties and an eating disorder. Not only did this limit therapeutic gains that could be made in intervention, but it highlights the importance of holistic care beyond treatment of a problem identified within the intervention.

The nature of work completed in this setting of a third-partner service embedded within probation is limited in the duration of time that can be spent working with an individual. This is unsurprising given the high prevalence of mental health difficulties in the probation population, and subsequent demand on services (Brooker et al, 2012). However, further intervention that is able to address more deep-seated difficulties may be beneficial to further improve treatment outcomes, and identification of such may require specialist consultation from psychology professionals.

Despite positive outcomes of the case study regarding the treatment of suicide risk in the probation population, there is still much work to be done in understanding the aetiology of suicide risk amongst this population and how it can best be treated within intervention. Therefore, not only is there scarce research regarding suicide risk in the probation population, but also in light of interventions. It is highly recommended that further evaluation and research is completed to support this high-risk group for suicide. Despite this, positive results of incorporating CBT and DBT informed work suggest this could be an area for further clinical practice and research, however results should be considered with caution when considering its reliability for a wider population as cases should be formulated individually

Chapter Five: The use of the Depression Hopelessness and Suicide Screening Form with Forensic Populations: A Psychometric Critique

Abstract

Aim: The Depression, Hopelessness and Suicide Screening Form (DHS) was developed to screen large numbers for depression and hopelessness, whilst gathering information regarding risk factors for suicide. Although the DHS has been widely utilised, there is a lack of existing critique to assess its utility with forensic populations.

Method: Critique of the DHS, specifically in relation to its reliability and validity properties when utilised with forensic samples.

Results: Psychometric properties of the DHS are satisfactory when utilised with forensic populations. Although, the tool should be utilised with caution in light of outlined limitations that must be addressed in practice. Specifically, the tool was developed with a custodial sample and therefore may hold limitations for community settings. Furthermore, key information is missing from the DHS manual, which leaves scope for misinterpretation of findings.

Conclusions: The DHS should be utilised in conjunction with alternative data sources, such as clinical judgement and behavioural observation. Further research is needed to ascertain psychometric properties of the DHS in forensic settings beyond the prison environment.

Background

Comprehensive suicide prevention policy requires appropriate screening and assessment, of which necessitates understanding of relevant risk factors and a systematic, dependable method to measure identified risk factors (Mills & Kroner, 2005; Mills & Kroner, 2008). However, suicide is more than an isolated, static event purely related to other static factors (Mills & Kroner, 2008). Therefore, research must consider the process whereby individuals make the decision to complete suicide, of which may incorporate personal variables that could indicate changes in risk of harm to self. Hopelessness and depression are two well-known process variables associated with suicide and associated with overall psychological or emotional distress (Mills & Kroner, 2005).

The association of depression with suicide-related ideation and behaviours is well established, and it is estimated that roughly 50% of individuals who die by suicide have a diagnosis of depression (Hawton et al, 2013). Depression is a major psychological problem among prison populations (Birmingham, 2004; Majekodunmi et al, 2017) and is often associated with an increase in risk of suicide and self-harm (Gunter et al, 2011). The prevalence of depression amongst individuals who have offended and are supervised in the community has also been demonstrated, whereby 77% of clients on probation and parole were positively screened for a psychiatric disorder, with depression being the most frequent diagnosis (Draine & Solomon, 2000; Solomon et al, 2002).

Hopelessness has been defined as “a system of negative expectancies concerning (one)self and (their) future life” (Beck et al, 1974, p. 861), and is prevalent in suicide risk assessment (Dieserud et al., 2001; Kroner et al, 2011). Hopelessness has also been found to predict suicidal behaviour in custodial settings (Pratt & Foster, 2020) and also related to parasuicide (Lohner & Konrad, 2007). Amongst a sample of 203 prison inmates, Holden et al (1989) reported hopelessness predicted previous suicidal behaviour; of which has been replicated in a subsequent study (Ivanoff & Jang, 1991). Hopelessness has also been found to be associated with parasuicide

even when depression and social desirability are controlled for (Cole, 1988). However, minimal research has investigated the association between hopelessness and suicide in adult probation samples (Mackenzie, 2015).

Given the high prevalence of suicide among individuals who have offended, conflated with depression and hopelessness being commonly cited risk factors for suicidal ideation and behaviours (Ribero et al, 2018); screening for hopelessness, depression and suicide indicators is imperative in high-risk populations (Mills & Kroner, 2008). While suicide prevention is complex given its multitude of interacting factors (Holden et al, 1989), screening for suicide risk is a central component of suicide prevention strategy (Zalsman et al, 2016). Due to often an insufficient clinical resource, screening tools enable identification of those at highest risk and in need of intervention with mental health professionals and suicide prevention initiatives (Mills & Kroner, 2008)

The Depression Hopelessness Suicide Screening Form (DHS; Mills & Kroner, 2004) was developed to screen large numbers for depression and hopelessness, whilst gathering information regarding risk factors for suicide, for example; family history of suicide, previous suicide attempt, depression diagnosis and the presence of suicidal ideation. The DHS can be utilised to measure hopelessness and depression as a function of relative endorsement to normative samples (Mills & Kroner, 2003). Secondly, items of the Critical Item Checklist can be utilised to identify individuals who are currently experiencing suicidal ideation and have previously attempted suicide. Thirdly, the DHS can be utilised as a gauge of generalised emotional and mental distress with use of appropriate cut-off scores. Finally, the likelihood that a person is experiencing suicidal ideation can be estimated by combining the suicide historical indicators and current levels of depression and hopelessness (Mills & Kroner, 2003).

The DHS has been widely utilised in forensic settings, however to our knowledge there is not a psychometric critique that explores its properties; specifically, validity

and reliability, when utilised in forensic settings. The review aims to fill this knowledge gap through critiquing the DHS. Initially, an overview of the tool will be outlined. Subsequently, the tools psychometric properties will be examined. The overall focus of the critique is to explore utility of the tool with forensic population, and consider practical implications, limitations and proposed further research for the field.

Depression, Hopelessness and Suicide (DHS) Screening Form

The DHS was developed in a medium-security prison in Ontario Canada, with participants who were consecutive admissions to the prison (Mills & Kroner, 2004). Two samples (N = 90, Sample 1; N = 108, Sample 2) were utilised in the development and final item selection of the psychometric items (Mills & Kroner, 2005). Originally, the tool included a Depression scale (30 items), a Hopelessness scale (19 items), and a Critical Item checklist (12 items) that measures cognitive suicide indicators, historical suicide indicators and suicidal ideation (Kroner et al, 2011)

Items within the depression scale considered domains pertinent to depressed affect and depression, such as; disappointment, fatigue, sadness and sleep disturbance. The Hopelessness scale incorporated domains pertinent to feelings of hopelessness, such as; helplessness, feelings of being overwhelmed and pessimistic about the future. Both scales were balanced so each domain is measured with positively and negatively keyed items.

Cognitive suicide indicators refer to cognitive permissiveness of suicide as an option and historical indicators refer to prior history of serious suicidal ideation, self-harm and suicide attempt (Mills & Kroner, 2003). The checklist comprised clinically relevant items to intent of suicide and previously suicidal behaviour based on risk factors identified in reviews when the scale was developed (Mills & Kroner, 2005). See Table 18. The user manual outlines discretion of the test administrator to decipher an appropriate response to individuals who endorse one or more of the critical items, dependent upon need and available resources (Mills & Kroner, 2003).

Depression and hopelessness item scales were scrutinised regarding their scale correlation, scale internal consistency, level of item endorsement and comparative strength of each item's association with its domain scale versus the other domain scale (Mills & Kroner, 2005). Analysis of the data from both samples resulted in seven items being deleted. Only items demonstrating the smallest potential for final incorporation were deleted before considering the items performance amongst the second sample. (Mills & Kroner, 2005). This process determined a 25-item depression scale and 16-item hopelessness scale, whereas the critical item list did not change (Mills & Kroner, 2003). Final item selection was directed by psychometric principles already outlined, although also included face validity of the item of the measured construct. For example, although 'I feel my situation is hopeless' demonstrated low endorsement level and poor item-total scale, face validity was viewed as strong and therefore the item remained. Exceptions alike this item were few, and the majority of items included in the final scale were consent on the strength of their psychometric properties. Therefore, the final DHS included a 39-item scale (Mills & Kroner, 2004). See Appendix L.

Table 18: *Critical Item Checklist*

Item number	Item
4	I have been diagnosed as being depressed by a psychiatrist or psychologist in the past
8	I have close friends or family members who have killed themselves
12	Suicide is not an option for me
16	I have had serious thoughts of suicide in the past
20	I have intentionally hurt myself
24	If circumstances get too bad, suicide is always an option
28	In the past my suicidal thoughts have led to a suicide attempt
32	I have attempted suicide more than once in the past
34	I have attempted suicide in the past two years
36	I have recently had thoughts of hurting myself
38	Life is not worth living
39	I have a plan to hurt myself

Table 19: *Demographic information and reported alpha reliabilities from studies utilising the DHS*

Authors	N	Age	Population and location	Gender	DHS α
Mills & Kroner (2003)	394	Not reported	Federal Offender Sample, Canada	Male	Depression .87 Hopelessness .76 DHS Total .90
Mills & Kroner (2003)	90	Not reported	Provincial Offender Sample, Canada	Male	Depression .86 Hopelessness .80 DHS total .91
Mills & Kroner (2004)	272	$\bar{x}$ 36.5, range 19-66	Inmates of a Canadian medium-security prison	Male	Depression .87 Hopelessness .75
Mills & Kroner (2005)	131	$\bar{x}$ 35.3, range 19 – 56	Inmates of a Canadian medium-security prison	Male	
Mills & Kroner (2005)	101	$\bar{x}$ 37.1, range 19 – 66	Inmates of a Canadian medium-security prison	Male	
Mills & Kroner (2008)	422	$\bar{x}$ 37 (SD=11)	Inmates of a Canadian medium-security prison	Male	Depression .87 Hopelessness .76 DHS total .90
Mills & Kroner (2008)	138	$\bar{x}$ 38 (SD=10.8)	Federally sentenced volunteers, Canada	Male	Depression .88 Hopelessness .83 DHS total .92

Kroner et al (2011)	98	x̄ 37.5 (SD = 10.9)	Canadian federal offenders on release	Female	Depression .90 Hopelessness .90 DHS Total .94
Mills & Kroner (2010)	100	x̄ 27.7, range 20-67	Federally sentenced offenders incarcerated in Ontario and Quebec	Female	Depression .90 Hopelessness .90
Mills & Kroner (2010)	122	x̄ 34.9, range 19-63	Federally sentenced offenders in Prairie, Ontario and Atlantic Region	Female	Depression .72 Hopelessness .72
Martin et al (2014)	4196	Not reported	Canadian prison	93.6% male	
Kroner et al (2011)	136	x̄ 38 (SD=11)	Inmates of a medium security prison in Ontario region	Male	
Hemmati et al (2004)	119	x̄ 37.0, range 20-60	Medium security federal institution	Male	

Mandracchia & Smith (2014)	399	x̄ 34.94, range 19-69	Prison inmates incarcerated in Mississippi	Male	
Mitchell et al (2018)	142	x̄ 37.37 (SD = 13.7)	Psychiatric inpatient unit, Texas	55.6% Male	Depression .90 Hopelessness.90
Pereira et al (2010)	73	x̄ 44.89, range 25-71	Canadian minimum security correctional institution	Male	
Martin (2017)	13,281	x̄ 35.5, range 18 - 85	Canadian prisons	93.9% male	

Normative data

Normative data is pertinent to consider when assessing the suitability of a measure for a particular population or individuals (Kline, 2013). Normative data for the DHS was obtained from a male offender sample (N=422) and a mixed gender student sample (N=85) in Canada. The manual provides the range, means and standard deviations to assist interpreting scores, along with percentile ranks. However, data is not separated into age groups or gender, and other descriptive data are not clearly specified in the manual. Mental health symptoms and rates of psychiatric diagnosis typically vary between females and males (Kroner et al, 2011). Specifically, it has been found women demonstrate higher rates of depression than men and higher rates of comorbidity in forensic samples (Kroner et al, 2011; Sirdfield et al, 2009). In light of different affect levels between women and men who have offended, female-derived norms and the inclusion of specific gender cut-off scores would be beneficial within guidelines for interpreting results; particularly as a single cut-off score for both genders may result in over classification or under classification of the target construct or domain (Kroner et al, 2011)

Kroner et al (N = 93, 2011) attempted to respond to this criticism through development of cut off scores of the DHS among female federal offenders on community release. Female means of depression and hopelessness scales are often higher (Mills & Kroner, 2004; 2005) comparative to male offender data (Mills & Kroner, 2004; 2005), hence indicating DHS scores for women will be greater than male counterparts (Kroner et al, 2011). Including specific cut off scores for women enables closely related normative samples to be utilised for proper clinical interpretation (Kroner et al, 2011). However, the women offender sample resided in the community and cut off scores have not been embedded into a new manual for the DHS. Furthermore, a minimum sample size of 500 is recommended to reduce standard error in normative data (Kline, 2013), however; this standard was not met across any of the samples. Finally, the authors indicated potential for the DHS to be utilised in forensic and non-forensic settings. The tool was developed in a forensic setting; however, this was in a Canadian medium security prison, and therefore its

generalisability to forensic settings beyond this is in question and should be used with caution.

Reliability

Reliability denotes whether an assessment measures what it intends to measure consistently. Internal reliability refers to the degree of the assessment's consistency, such as; whether items in a subscale or scale assesses the intended construct. Whereas, test-retest reliability considers whether measurement scores are consistent when the assessment is measured at two distinct points in time (Field, 2005; Schamborg et al, 2015).

Internal consistency

Acceptable internal reliability, measured by an alpha coefficient, can range between.60 - .70, whereas good internal reliability is considered as .70 or above (Cortina, 1993; Schamborg et al, 2015). See Table 19. Alpha coefficients regarding normative data of the DHS, including the forensic and non-forensic population, were all above .90 for DHS total (Mills & Kroner, 2003). Whereas, subscales of depression were at least (a = .86) for each population. However, subscales of hopelessness were slightly lower for the federal offender sample (a=.76) compared to the provincial offender sample (.80) and student sample (.84) (Mills & Kroner, 2003). Despite this, alpha coefficients demonstrated good internal reliability for all scales and subscales for the normative data of DHS. In an additional study completed after production of the manual, internal consistency was reported as good amongst male offenders at a medium security prison (N=422; Mills & Kroner, 2008), with internal consistencies were .90 for DHS total and .87 and .76 for depression and hopelessness subscales respectively. Similar internal consistencies were reported amongst their second sample of 138 male offender volunteers at a medium security prison (Mills & Kroner, 2008).

Mills & Kroner (2010) reported excellent internal reliabilities for depression (.90) and hopelessness (.90) subscales among a sample of 100 federally sentenced women

who were incarcerated for a period of time in Canada. Their second sample consisted of 112 federally sentenced women who had been initially admitted to federal custody, of which reported good alpha coefficients for depression (.72) and hopelessness (.72). Although they did not report internal consistency alphas for DHS total for each sample, this demonstrates similar internal consistencies to alternative depression measures with women who have offended (Kroner et al, 2011; Salisbury & Van Voorhis, 2009). Kroner et al (2011) conducted an additional study with 98 Canadian federal women who have offended on community release and reported excellent internal consistency for depression (.90), hopelessness (.90) subscales and DHS total (.94). Whereas, a study with 142 psychiatric inpatients demonstrated excellent internal consistency for hopelessness and depression (KR-20 =.90; Mitchell et al, 2018). Although these internal consistencies are high, the DHS was not developed with psychiatric patients, and therefore consistencies should be interpreted with caution.

Test re-test

Test re-test reliability is typically measured by deciphering correlations between an individual's scores across different administrations (Field et al, 2005). A time period of at least three months is recommended between administration to decrease the likelihood of the same answers being recalled and restated. It is recommended the correlation between first and second administration should be r=.80 as a minimum (Kline, 2013). However, test re-test reliability is not reported within the DHS manual, demonstrating a limitation of the tool. Test-retest reliability assessment is fundamental when developing psychometric tools to help ensure variation in measurement scores is due to replicable differences between people irrespective of user profile, context or time (Kline, 2013). Lack of data limits our understanding of how dependable the DHS is for wider research and clinical practice. Kroner et al (2011) determined adequate stability regarding test-retest reliability for both the depression (.80), hopelessness (.86) scales and DHS total (.87), yet within a range that could change over time. However, this was only demonstrated amongst a subsample of 38 federally incarcerated women and they repeated the DHS after 2

weeks, which arguably is too close in proximity and limits generalisability to other samples.

Validity

Validity denotes the accuracy of a tool in measuring the desired construct, of which can be assessed in different ways, as outlined below.

Face validity

Face validity concerns whether a measure accurately appears to assess the intended construct (Field, 2005; Schamborg et al, 2015). Through reviewing the instructions and items of the DHS, it is evident the tool measures constructs of relevance to depression, hopelessness and suicidality. High face validity is perceived as desirable when considering psychometric assessments, as this may increase likelihood of the respondent completing the measure accurately (Kline, 2013). However, psychometrics with high face validity are susceptible to social desirability responding (Furnham, 1986). Individuals intent on completing suicide may not wish to be identified as 'at risk' to avoid suicide prevention intervention (Kroner et al, 2011). Correria (2000) reported concern regarding reliance of face valid instruments in the prison environment due to the propensity of individuals to demonstrate malingering and manipulation when completing the tool. For example, individuals may wish to demonstrate improvement following intervention and measured constructs may be perceived as undesirable or an unacceptable feeling. Furthermore, individuals may lack insight, or minimise of deny their difficulties. However, endorsement rates of Critical Item Checklist items suggest participants accurately self-reported prior incidents of suicidal behaviour (Mills & Kroner, 2008).

In further support of face validity of the tool, the measure has similar items to those identified in Beck Depression Inventory-II (BDI-II) (Beck et al, 1996) and Beck Hopelessness Scale (BHS; Beck et al, 1974); of which are popularly utilised measures of depression and hopelessness. However, there are some noted differences between DHS and relevant structured measures. The BDI-II resulted in elevated

scores of depression in custodial samples (Boothby & Durham, 1999), of which has been explained by its endorsement of items referring to feelings of punishment or experiencing guilt; factors often associated with incarceration (Mills & Kroner, 2006). The DHS attempted to overcome these drawbacks and accurately measure depression as a construct whilst accounting for the distinctive characteristics of the sample (Mills & Kroner, 2006) and hence avoided measuring domains reasonably associated with the prison environment; such as guilt and changes in sexual interest (Kroner et al, 2011). However, arguably the measure could have benefitted with including specific items concerning the prison setting (Gould et al, 2017); as particular custody situations and experience may increase suicidal behaviour.

Concurrent validity

Concurrent validity refers to whether a measure is related to other assessments that measure the same construct (Field, 2005). The DHS manual (Mills & Kroner, 2003) provides support regarding concurrent validity of the DHS by demonstrating significant relationships between DHS scales and the BDI-II and BHS, including indicators obtained from the Critical Item Checklist; of which have been replicated in female offender samples (Mills et al 2010; Kroner et al, 2011). DHS scales have demonstrated strong correlations with the underlining factors of the Depression scale of the Basic Personality Inventory (BPI; Jackson, 1989; Mills & Kroner, 2004). Table 20 displays reported correlations between DHS scores and alternative assessments of depression and hopelessness. The reported correlations support the notion that the DHS utilises a similar conceptualisation of depression and hopelessness comparative with other measures.

DHS scales have also been reported as significantly associated to institutional file information pertaining to history of depression, previous suicide attempts, self-harm and psychiatric and psychological intervention (Mills & Kroner, 2004). Depression is a primary and secondary rationale for psychiatric or psychological intervention. For example, symptoms of depression or symptoms associated with other mental illnesses. Therefore, the relationship of DHS scales with these alternative measures

supports evidence regarding the concurrent validity of the DHS (Mills & Kroner, 2008).

Table 20: *Correlations between DHS scores and alternative measures of depression and hopelessness*

Author	DHS scale	Outcome	Correlation
Mills & Kroner (2004)	DHS Depression	BDI-II	.77
		BPI depression	.65
	DHS Hopelessness	BHS	.70
		BPI Hopelessness	.66
	CIA Historical	BDI-II	.27
		BHS	.17
	CIA - Cognitive	BDI-II	.32
		BHS	.22
	CIA - Ideation	BDI-II	.29
		BHS	.21
	DHS total	Prior self-harm	.18
		Prior suicide attempt	.13
		History of depression	.33
		History of psychiatric intervention	.41
		History of psychological intervention	.22
		Recent psychiatric/psychological intervention	.29
		History of suicide attempt	.24
Mills & Kroner (2005)	DHS Depression	Holden Psychological Screening Inventory (HPSI) depression	.70
		HPSI Psychache	.70
	CIA - Historical	Psychache	.35

Mills & Kroner (2006)	DHS Depression	BDI-II	.77
	DHS Hopelessness	BHS	.70
Mills & Kroner (2008)	DHS Depression	BDI	.83
	DHS Hopelessness	BHS	.65
Mills (2010)	DHS Depression	BDI	.77
		Brief symptom inventory (BSI) depression	.78
	DHS Hopelessness	BHS	.81
		Brief symptom inventory (BSI) depression	.73
Kroner et al (2011)	DHS Depression	BDI	.74
		Profile of Mood States (Depression-Dejection)	.67
		BSI depression	.76
	DHS Hopelessness	BHS	.76
	DHS total	BDI	.76
		BHS	.73
	CIA - Ideation	BSI (Brief Symptom intention items)	.47
		BDI-II	.53
		BSI (Beck Suicide)	.80
		Previous suicide attempt	.32
	CIA - Cognitive	BSI (Brief Symptom intention)	.35
		BDI-II	.56

		BSI (Beck Suicide)	.69
		Previous suicide attempt	.29
	CIA - Historical	BSI (Brief Symptom intention)	.37
		BDI-II	.41
		BSI (Beck Suicide)	.45
		Previous suicide attempt	.62
Hemmati et al (2004)	DHS Depression	General mood	-.60
		Stress tolerance	-.50
		Adaptability	-.57
	DHS Hopelessness	General mood	-.51
		Stress tolerance	-.41
		Adaptability	-.43
	DHS Total	General mood	-.61
		Stress tolerance	-.50
		Adaptability	.61

Predictive validity

Predictive validity denotes the likelihood a measure predicts an outcome of the same construct in the future (Field, 2005). Sensitivity and specificity values are not provided within the manual, indicating lack of certainty regarding the likelihood of false negatives and false positives it could generate (Gould et al, 2017). Furthermore, the DHS 12 'critical items' denotes all items as 'equally' critical, of which could produce unnecessary false negatives (Gould et al, 2017; Martin et al, 2014). However, Mills & Kroner (2005) utilised the DHS with 101 male offenders to predict generalised psychological distress (Mills & Kroner, 2005) and found the measure was very accurate (AUC; Area Under the Curve >.90) and correctly classified 96% of the sample with a cut-off score of 10. Kroner et al (2011) also conducted studies within female correctional samples and found the DHS Depression scale with a cut off score of 5 yielded a .90 sensitivity rate, therefore demonstrating robust ability to identify those with mild depression and a .64 specificity rate. The DHS Hopelessness scale with a cut off score of 3 had a sensitivity rate of .69 and specificity of .80 in predicting hopelessness. Although depression scale is promising in detecting mild depression, the scale likely incorporates content regarding more severe forms of depression of which could reduce specificity of the scale (Kroner et al, 2011).

The DHS has been found to improve prediction of suicidal ideation in male offenders, of which has been replicated successfully on subsequent samples (Mandracchia & Smith, 2014; Martin et al 2004; Pereira et al, 2010; Mills & Kroner, 2008; Mills & Kroner, 2005b). Mills & Kroner (2008) reported the DHS total demonstrated AUC .801 in predicting recent ideation, and similar rates were demonstrated in all subscales. Therefore, all measures predicted ideation well, although historical indicator item had the largest AUC. However, this analysis is dependent upon individuals who were honest in their answers pertaining to questions regarding current suicidal ideation, and therefore is a cautious estimate (Mills & Kroner, 2008). Although it is pertinent to bear in mind these predictions illustrate the interactive nature of variables pertaining to suicide risk as opposed to precise likelihood estimates. DHS critical items have demonstrated high sensitivity in prediction of self-

harm comparative to results of preceding prospective validations regarding prison screening tools (Martin et al, 2014), and has also performed well in comparison with interview and file review when ascertaining individuals who have offended and have a history of self-harm and suicide attempts (Mills & Kroner, 2008).

Content validity

Content validity refers to the extent a measure assesses all aspects of the determined construct (Hayes et al, 1995; Schamborg et al, 2015). Although depression is a formalised diagnosis and therefore arguably a well-defined construct, hopelessness and suicidality are perhaps more nuanced concepts, and therefore it is difficult to confidently deduce whether the DHS incorporates every facet of these or not. Although the DHS appears similar in content to other well-validated and popular measures of depression and hopelessness, the DHS critical checklist items do not incorporate all items recommended for a self-harm screening checklist (Dixon-Gordon et al, 2012; Martin et al, 2014), and arguably miss key aspects of suicidality. For example, access to means, physical pain sensitivity, impulsivity, fearlessness about death, burdensomeness and coping are not considered; all of which have been identified as key aspects in the suicide pathway (O'Connor & Kirtley, 2018). However, the tool captures suicidal plans and sense of future, and some level of brevity is anticipated given its nature as a screening tool.

Construct validity

Construct validity denotes the degree an assessment measures what it is intended to measure (Schamborg et al, 2015). Construct validity can be further subdivided into convergent and discriminant validity (Hayes et al, 1995; Schamborg et al, 2015). Convergent validity denotes whether associated constructs are intended to be associated, whereas, discriminant validity measures whether unrelated constructs are not associated (Hayes et al, 1995; Schamborg et al, 2015). Based on the normative data for the DHS, a confirmatory factor analysis was conducted and a two-factor structure was a better fit to data than a single factor solution, hence supporting discriminant validity amongst the scales and interpretation of the

purported constructs of depression and hopelessness (Mills & Kroner, 2003). Construct validity of DHS has been supported further with women offender samples and further clarify normative interpretive ranges of the scales (Mills et al, 2010; Kroner et al, 2011).

Results outlined in Table 20 further support the convergent validity and the a priori structure of component scales of depression, hopelessness and suicide risk factors with associated alternative measures (Mills & Kroner, 2004). As previously highlighted, DHS scales have demonstrated high correlation with measures of depressed effect and hopelessness derived from Jackson's (1989) BPI (Mills & Kroner, 2004) and have demonstrated high correlation between the DHS depression scale and the BDI-II and the DHS Hopelessness scale and BHS (Mills et al, 2004; Kroner et al, 2011; Mills & Kroner, 2008). Furthermore, the DHS demonstrated stronger association to alternative assessments of negative affect as opposed to denial as a test taking style (Mills & Kroner, 2004; Mills & Kroner, 2008). Hemmati et al (2004) also reported a negative and moderate association between the DHS and assessments of general positive mood (i.e. optimism and happiness), stress tolerance and adaptability (i.e. flexibility and problem solving) as indicated by the Bar On-Emotional Quotient (Bar-On, 1997), hence further supporting discriminant validity of the tool (Mills & Kroner, 2008).

Critical items have shown convergent and discriminant correlations among associated items from alternative scales. The DHS cognitive indicator and ideation items had strong correlations with Brief Symptom Inventory (BSI) intention items (Jackson, 1989), BDI (Beck et al, 1996) and Beck Scale for Suicide Ideation (BSS; Beck & Steer, 1991l; Kroner et al, 2011) Whereas, the DHS historical suicide indicators demonstrated stronger associations with historical suicide attempt item as opposed to intention items in the Brief Symptom Inventory and Beck scales (Kroner et al, 2011). Taken together, this demonstrates some evidence of the item construct validity regarding DHS critical items.

Practical applications

Self-report measures such as the DHS hold advantages that standardised scoring promotes more objective results, and use of the screening tool is less resource and time intensive. Research indicates the DHS is a valuable tool in the assessment of suicide indicators, and use of screening tools enables large numbers of people to be screened for possible suicide indicators and psychological distress; of which the DHS has demonstrated excellent prediction of. Resource limitations often result in screening components of effective suicide prevention protocol being overlooked; however, this brief self-report instrument demonstrates potential to identify individuals at increased risk of harm to self of which could be utilised in the intake process (Mills & Kroner, 2005). However, the DHS was not developed as a substitution regarding a comprehensive assessment of hopelessness, depression, or risk of harm to self (Mills & Kroner, 2004), whereas its value was purported to assist the screening of individuals for these intended constructs. The tool should be part of a more comprehensive risk of harm to self assessment alongside collateral file information, interview and observation for best outcomes. Although, it is important to consider the tool was standardised for prison populations whereby more extensive file information and observation opportunities are likely to be available, and therefore clinical judgement should be exercised in circumstances where this is not the case.

Discussion

The psychometric critique provides support for the validity and reliability of the DHS with forensic populations. The DHS can be used to screen for depression, hopelessness and indicators of suicide and has even demonstrated prediction for suicidal ideation (Mandracchia & Smith, 2014; Mills & Kroner, 2008; Mills & Kroner, 2005; Pereira et al, 2010) and distress (Mills & Kroner, 2005). There is good evidence for internal reliability of the DHS, however test re-test reliability is not included in the manual. One study reported on the test re-test reliability of the DHS (Kroner et al, 2011), however this was demonstrated with a subsample of 38 federally incarcerated women and the DHS was repeated after 2 weeks, which is too close in

proximity and an inadequate sample size (Kline, 2013). Test re-test reliability of the DHS should be investigated over at least a three month period (Kline, 2013). There is research that demonstrates the expected relationships with related construct and the DHS has demonstrated some utility in predicting relevant outcomes, however research has often utilised suicidal outcomes as the criterion variable, and therefore predictive validity must be considered with caution. A prospective study would be beneficial to advance our understanding of the DHS utility in predicting depression, hopelessness and suicidality in a forensic context. This could incorporate determining DHS scores to screen individuals 'at risk' and ascertaining whether interventions developed to reduce intended constructs results in a reduction in scoring.

Limitations of the tool should be held in mind, such as the nature of normative samples. Individuals in prison are a vulnerable population for suicide, but generalisation of findings to alternative forensic populations outside of North America are required to confirm moderating effect (Mills & Kroner, 2008). In consideration of alternative forensic contexts, this may perhaps require inclusion of items that were removed due to their relation to the prison environment. The review supports validity of DHS scales with female offenders; however, identification of depression, hopelessness and endorsement of critical factors appear to differ for female and male offenders and females may require different normative ranges compared to male counterparts (Kroner et al, 2011). This should be included in the DHS manual alongside interpretation and guidelines for female offenders. Limitations of self-report should also be held in mind, such as social desirability bias. Although the DHS has indicated inmates responded honestly regarding their reporting of prior suicide indicators (Mills & Kroner, 2005) and the DHS has demonstrated a weak relationship with the scale of Denial (a measure of test taking style) within the Basic Personality Inventory (Jackson, 1989), verification of internal states such as depression and hopelessness is harder to deduce. It is recommended perhaps a social desirability tool, could be utilised alongside aforementioned collateral information, for example, the Paulhus Deception Scale (PDS; Paulhus,

1998). However, within literature pertaining to the use of DHS in forensic settings, this does not appear to be considered.

This psychometric review of the DHS incorporates studies with incarcerated populations, and therefore psychometric properties of the DHS scale may not accurately reflect how the scale may perform in the probation settings. The review had to work on the basis of evidence that was available, however this presents a limitation in light of the overall aim of the thesis exploring suicide risk in the probation population. Firstly, probation populations experience different environmental and psychological stressors compared to prison populations, whereby individuals in prison experience confinement, isolation and institutionalisation (Crewe & Ievnins, 2019) which are unique stressors that may not be as applicable to individuals on probation. Psychological constructs like hopelessness may be particularly heightened in prison environments due to the nature of the confined environment (Palmer & Connelly, 2005), and the construct may manifest differently in probation populations. In addition, the psychometric properties of the DHS may be context specific, particularly as it has only been validated in one probation context (Kroner et al, 2011), of which included individuals who had recently been released from custody. Therefore, there is risk of inappropriate or skewed conclusions regarding how effectively the DHS scale measures these constructs in people on probation. Furthermore, the review was heavily centred on Canadian prison populations. People on probation in other jurisdictions are likely to have different social and legal experiences and access to support services (Hamai et al, 2005). As a result, the psychometric findings from North American incarcerated populations might not apply to people on probation from other regions; limiting the generalisability of the scale across different contexts. Overall, the scale may be more reliable in prison settings, rendering the DHS scale's reliability and application in probation settings uncertain.

Consideration of findings in the wider context of their relationship to practice, theory and the population of interest

The DHS's normative data is derived from both male offenders and a mixed-gender student sample, yet it lacks granularity in age and gender distinctions, which is crucial for accurate interpretation of findings. Research indicates that mental health symptoms, particularly depression and comorbidity rates can differ markedly between genders (Kroner et al, 2011). Given that women in forensic settings often display higher rates of depression (Mills & Kroner, 2004; 2005), establishing female-specific norms and cut-off scores could refine accuracy of the tool. The absence of these norms might lead to misclassification of results, either by underestimating or overestimating the severity of their conditions.

The DHS demonstrates strong internal reliability across its scales, making it a robust tool for measuring depression and hopelessness. However, the test re-test reliability has not been adequately established, which poses a challenge for its application in clinical settings. For populations on probation, where mental wellbeing may fluctuate overtime, ensuring stable measurement is critical (Polit, 2014). While some studies suggest acceptable stability, the lack of comprehensive test-retest reliability limits the measures applicability and generalisability, particularly in settings with dynamic and high-stress environments like probation.

The critique highlights the DHS's good face and concurrent validity, indicating that it accurately measures constructs of interest and correlates well with established measures of depression and hopelessness. However, its predictive validity is somewhat undermined by the lack of specificity and sensitivity data, which could lead to false positives or negatives in identifying individuals who possess risk based vulnerabilities for suicidality. Moreover, while the DHS is effective in predicting suicidal ideation among male offenders, the tool's reliance on self-reported data raises concerns about honesty and the potential for individuals to minimise or misrepresent their mental health difficulties (Correria, 2000). This is particularly pertinent in forensic settings, where individuals may feel pressure to present themselves in a favourable manner (Van Impelen et al, 2016).

Despite these limitations, the DHS serves as a valuable screening tool that can identify individuals at increased risk of harm. For probation officers and mental health professionals, the DHS offers a standardised method for assessing mental health needs efficiently, especially in resource limited environments. However, the tool should not replace comprehensive assessments; rather, it should complement them. Effective suicide prevention protocols must include thorough assessments that integrate the DHS results with collateral information, interviews and ongoing observations to capture the full picture of an individual's presentation.

Theory

Integrated Motivational-Volitional Model (IMV; O'Connor et al, 2011)

The IMV model (O'Connor et al, 2011) posits that suicidal behaviour results from an interplay of motivational and volitional factors. The motivation for suicide can stem from adverse experiences, including mental health symptoms like depression and hopelessness (Ribeiro et al, 2018), which the DHS measures. By integrating the critique's findings, the DHS can be considered an effective tool for identifying individuals at risk based on their motivational states. Furthermore, the reliability of the DHS, especially concerning internal consistency across populations, supports the notion that accurate measurement can inform interventions aimed at reducing suicide risk.

Interpersonal Theory of Suicide (ITS; Joiner, 2005)

The ITS (Joiner, 2005) posits that suicidal behaviour is influenced by perceived lack of belongingness and a perceived burden on others. The critique notes that while the DHS demonstrates strong correlations with other validated measures of depression and hopelessness, it may not fully account for aspects of suicidality that involve interpersonal dynamics, such as feelings of isolation or perceived burdensomeness. Items related to these constructs are not explicitly included in the DHS indicating a potential gap in assessing interpersonal factors crucial to understanding suicidal

ideation. Future iterations of the DHS may benefit from incorporating these interpersonal factors.

Three Step Theory (3ST; Klonsky et al, 2015)

The 3ST (Klonsky et al, 2015) articulates a sequential model of suicidal behaviour comprising the steps of psychological pain, hopelessness and capability for suicidal outcomes. The DHS effectively measures psychological pain and hopelessness. The predictive validity findings from the critique indicate that the DHS can accurately predict suicidal ideation, consistent with the 3ST framework, which identifies depression as a core component that could lead to suicidal behaviour. However, to adhere to the 3ST's framework, future iterations of the DHS may wish to consider additional factors to suicide, such as one's capability.

Conclusion

The DHS demonstrates greatest utility in screening individuals in custody for suicidal indicators in situations where limited records are available (Horon et al, 2013), however comprehensive risk assessment should incorporate interviews and file review. Although prisons comparative to community forensic settings may be likely to have more extensive information on file; including historical suicidal information (Mills & Kroner, 2005). This, conflated with less reliability and validity information for community samples, demonstrates how the tool should be utilised with caution in forensic populations beyond the prison environment. Further research is needed to determine psychometric properties of DHS in alternative forensic settings. Development of a normative sample for alternative forensic samples that considers further demographic factors would further improve its clinical utility. In light of clinical practice, impression management and situational factors should be considered when conducting assessments with forensic populations, and the DHS should be utilised in conjunction with alternative data sources, such as clinical judgement and behavioural observation. Finally, the utility of the DHS, or any suicide screening form, should not mitigate the necessity for continued assessment of dynamic risk factors of harm to self. This incorporates continued monitoring of

people who do initially screen as ‘at risk’, given that individuals circumstances may change over time (Martin et al, 2014; Mills & Kroner, 2008)

Chapter Six: General Discussion

Discussion

Thesis aim

A key aim of the thesis was to conduct research regarding a neglected population within the field of suicide research: the probation population. By focusing on this group, it promoted much needed focus and attention to the breadth of findings by identifying key risk factors likely to contribute to the emergence of suicidal ideation, suicide attempt and completed suicide. Identification of risk factors are hoped to be beneficial to practitioners working with the probation population in three-fold. Firstly, through providing further insight into contributing factors that influence suicide risk, and hence reduce harm from potential victims of suicidal behaviour or completed suicide. Secondly, to provide practitioners preliminary empirical evidence to guide individually-tailored assessment, intervention and risk management plans. Finally, the thesis produced a tool that can be utilised to identify vulnerabilities to suicidality. The final chapter of the thesis aims to synthesise overall findings within the wider context of forensic psychology, reflect on the research thread of each chapter whilst discussing limitations, implications and added value of the research. Each key thesis chapter undertook a distinctive approach with the aim to achieve a deeper understanding of suicide risk in probation. This thesis utilised varying exploratory measures to attain this aim, of which included a systematic review (Chapter Two), an empirical quantitative research project (Chapter Three), a single case study (Chapter Four), and a critique of a commonly used tool utilised to screen for suicide risk (Chapter Five). Each chapter aimed to construct a thread of discussion that coherently related to the next chapter. Chapter Two identified risk factors for suicidal ideation, suicide attempt and completed suicide reported in existing literature related to the probation population. The chapter demonstrated how possible predictors of suicidal ideation and suicide attempt are often not explored in tandem. Chapter Three sought to meet this research gap, and identified differences between men on probation who had attempted suicide, experienced solely suicidal ideation and have not experienced suicidal thoughts or behaviour, and curated a tool that can be utilised in probation to identify vulnerabilities for suicidality. Chapter

Four described the assessment, formulation and intervention of a man who had previously experienced a suicide attempt and ongoing suicidal ideation. This considered likely contributing factors for presenting problems and offending behaviour, and considered the utility of intervention proposed. The case study further supported findings from the previous chapter, whereby the tool identified Client X's vulnerabilities to suicidality. Finally, the screening tool identified to assess Client X's risk of harm to self was the Depression, Hopelessness and Suicide Screening Form (DHS; Mills, 2004), of which was critically appraised in Chapter Five.

Summary of findings

Chapter Two

Below outlines the research aim and question identified in this chapter:

Aim: To synthesise the existing evidence on risk factors for suicidal ideation, suicide attempt and completed suicide in individuals on probation.

Research question: What risk factors have been identified for suicidal ideation, suicide attempt and completed suicide for individuals serving a probation order?

Chapter Two comprised a systematic review, which included ten research articles investigating risk factors for suicide for individuals on probation and hence demonstrated sparsity of existing research. The findings indicated a wide array of possible factors associated with suicide risk. Firstly, sociodemographic variables indicated women and individuals of white ethnicity were at increased risk of completed suicide, suicide attempt and suicidal ideation. White race or ethnicity is a commonly cited risk factor within suicide risk assessment reports in community samples (Kessler et al, 1999). However, self-inflicted death is often reported as more prevalent amongst men in forensic and general population samples (Pratt et al, 2005). Therefore, it is imperative to hold in mind that women were identified as at increased risk amongst papers concerning completed suicide as the outcome (Haglund et al, 2014; Phillips et al, 2018; Pratt et al, 2006). Results indicated individuals aged 30+ on probation at increased risk of completed suicide. However, older individuals who completed suicide may have attempted suicide historically, and hence we should not overlook the risk of all age groups. Finally, lack of

education and residential instability were associated with suicidal ideation and suicide attempts.

Regarding criminogenic variables, the review demonstrates that during the first 12 months after release from custody there is an increased suicide risk. Individuals in custody possess proportionally increased risk factors associated with suicide comparative with the general population (Bland et al, 1998; Brooke et al, 1996; Fazel & Danesh, 2002; Joukamaa, 1995), however the period of transition may exacerbate existing risk factors and conflate difficulties reintegrating into society. Although analysis regarding offence related variables was sparse, the results were generally consistent with previous custodial research regarding violent offending and increased suicide risk (Fazel et al, 2008; Sarchiapone et al, 2009; Zhong et al, 2021). However, it is worth noting offence-related variables may be less prevalent because suicide risk among people on probation is significantly reduced when clinical and sociodemographic risk factors were accounted for (Haglund et al, 2014). Despite this, analysis regarding criminogenic variables was not possible due to lack of detail in the data set. This holds implications for further research, as the heterogeneity of samples could lead to a dilution of high-risk groups (Fazel et al, 2017).

Concerning clinical variables; psychiatric diagnoses, symptoms and medication or treatment were prevalent risk factors for suicide. Research consistently demonstrates that individuals on probation possess increased mental health needs compared to the general population (Brooker et al, 2014; Brooker & Ramsbotham, 2014; Gunter et al, 2011; HM Inspectorate of Probation, 2021; Kariminia et al, 2007; Pratt et al, 2010), and these findings further highlight the importance of mental health provisions for this high-risk group. In addition, lifetime physical and sexual abuse were clinical variables associated with all suicidal outcomes. Physical and sexual abuse has been associated with distress in samples of individuals who have offended (Clements-Nolle, et al, 2009; Milligan & Andrews, 2005); another risk factor for suicide identified in the review. Substance misuse also featured heavily in the review. Substance misuse can function as a coping mechanism for traumatic

incidents (Krysińska, K., & Lester, D, 2010), however both risk factors require tailored intervention plans that could be beneficial to reduce overall risk of suicide. However, responsibility cannot lie with probation practitioners alone. Psychologically informed partner agencies and consultation should support probation and promote appropriate signposting and intervention

Overall, the chapter demonstrates the sparsity of research regarding suicide risk factors for the probation population, and highlighted how suicidal outcomes of ideation, attempt and completed suicide are rarely examined in tandem within one research paper. In light of the wide pool of risk factors identified, it is proposed it may be beneficial to explore differences between individuals who think about suicide, and act on these thoughts and attempt suicide to identify people most at risk. This gap was explored in Chapter Three.

Chapter Three

Below outlines the research aim and questions for this chapter

Aims:

1. To identify sociodemographic, criminogenic and clinical differences between men on probation who have; attempted suicide, experienced solely suicidal ideation and have not experienced suicidal thoughts or behaviour.
2. To curate a tool that can identify individuals who may possess vulnerabilities to suicidality and may require a suicide assessment

Research questions:

1. What are sociodemographic, criminogenic and clinical differences between men on probation who have; attempted suicide, experienced solely suicidal ideation and have not experienced suicidal thoughts or behaviour?
2. What risk factors determine vulnerabilities that increase risk of suicidality for men on probation?

Chapter Three attempted to add to the breadth of research outlined in Chapter Two in two key ways. Firstly, Chapter Two outlined how suicidal outcomes of suicidal ideation and suicide attempt are rarely explored in tandem within one study. This curates challenges regarding identifying key differences within samples. An understanding of differences in groups can help identify individuals who are most at risk of acting on suicidal thoughts and transgressing to a suicide attempt; of which is addressed within research question 1. Secondly, Chapter Two outlined a wide range of risk factors associated with suicidality in the probation population. However, how can we identify individuals most 'at risk' of a suicide attempt within a large population, particularly when probation practitioners are often over-worked and under-resourced? (Paparozzi & DeMichele, 2008). In response to research question 2, the study presented a tool that consists of risk factors significantly associated with a suicide attempt, of which are routinely and readily collated within probation practice.

The results compliment findings outlined within the systematic review; whereby clinical risk factors demonstrated strong association with a suicide attempt. Specifically, psychiatric disorder, illicit substance misuse, psychological distress and childhood abuse were identified as risk factors for suicide amongst all papers that utilised these variables in the systematic review (Brooker et al, 2021; Candarelli et al, 2014; Cook & Borrill et al, 2013; Gunter et al, 2011; Haglund et al, 2014; McCullumsmith et al, 2013; Yu & Sung, 2015a; 2015b), and Chapter 3 also identified these variables as associated with suicidal ideation and attempt. White ethnicity demonstrated significance with suicide attempt, of which compliments systematic review findings (Cook & Borrill, 2013; Gunter et al, 2011; McCullumsmith et al, 2013; Phillips et al, 2018). Conversely, psychiatric treatment demonstrated weaker significance ($p=<0.05$), and was only significant when comparing controls with attempt and ideation versus attempt groups. This finding could be a result of low prevalence of individuals identified as taking psychiatric treatment within the sample (24%, N=75). Alcohol misuse was also associated with suicidal ideation and attempt, however received less hits within the systematic review. This could be a result of

alcohol misuse not being utilised or captured as heavily within Chapter Two; however, the findings of Chapter Three elicit its importance in consideration within further research.

The proposed tool included the following risk factors as key to distinguish between those who attempt suicide from those who did not report suicidal ideation or a suicide attempt. Firstly, risk of self-harm held the highest power, and was the only variable to meet p=<.001 significance when comparing ideation versus attempt groups. This indicates risk of self-harm as a pertinent risk factor that could influence suicidal ideation transitioning to an attempt. Mental health conditions, illicit substance misuse, binge drinking, adverse experience of childhood and the presence of significant distress, as measured by the Kessler-6 (Kessler, 2002), were the remaining risk factors included in the tool. This largely compliments existing research in the field as outlined in Chapter Two. However, when comparing differences between groups, the risk factors identified within the tool were the only variables to demonstrate significance when comparing controls with individuals who experienced suicidal ideation, albeit only at 0.05 significance. This finding perhaps indicates when these risk factors are more prevalent, they increase the likelihood of transcending from suicidal ideation to suicide attempt. However, this contrasts previous research that indicates risk factors for suicide can often be more predictive of suicidal ideation as opposed to attempt (Favril & O'Connor, 2019; Favril et al, 2020c).

Chapter Four

Below outlines the intervention aims and research questions for this chapter

Aims:

1. To formulate Client X's experience of suicidal ideation, anxiety and depression with exploratory focus on emotional dysregulation as a potential contributory factor.
2. To incorporate Cognitive Behavioural Therapy (CBT; Beck & Beck, 2020) and Dialectical Behavioural Therapy (DBT; Linehan, 2014) informed skills practice to manage and reduce the presence of

identified presenting problems and overall risk of a subsequent attempt.

Research Questions:

1. Is CBT (Beck & Beck, 2020) and DBT (Linehan, 2014) informed intervention effective in reducing suicidal ideation for a male on probation?
2. Would proposed suicide tool curated in Chapter Three identify Client X's vulnerabilities for suicide?
3. How does the lived experience of a person on probation who has attempted suicide complement existing ideation-action theories?

Chapter Four comprised a single case study that reported on the assessment, formulation and intervention of a young adult male serving a probation order. Client X previously demonstrated a suicide attempt and experienced suicidal ideation at the time of referral. The case study permits consideration of whether the intervention utilised for Client X could be considered for the wider probation population in light of suicide prevention intervention. Furthermore, in light of the thesis as a whole, consideration was permitted to risk factors that were present with Client X, and whether the proposed tool developed in the previous chapter would successfully identify vulnerabilities to suicidality. Finally, use of a case study permits exploration of suicide risk beyond risk factors amongst a large population, and instead provides insight and depth into the lived experience of a person on probation who has attempted suicide and the subjective experience of the suicidal state (Mackenzie, 2015).

Overall, Client X's pre and post psychometrics demonstrated in improvements in wellbeing and functioning that could be attributed to CBT (Beck & Beck, 2020) and DBT (Linehan, 2014) informed psychological intervention. Specifically, regarding the severity of anxiety and depressive symptoms, distress, hopelessness and endorsement of suicide items.

The thread continued into Chapter Four, whereby the proposed tool to identify men on probation who have, or who arguably may, attempt suicide developed in Chapter Three successfully identified vulnerabilities for suicidality. Finally, the case study findings also support the three-step theory (3ST; Klonksy et al, 2015) of ideation-action, whereby Client X associated feelings of psychological pain and hopelessness with feelings of suicidal ideation. When formulating the previous suicide attempt, Client X expressed how pain experienced felt somewhat insurmountable and the prospect of taking his own life presented as a solution for pain to be alleviated. In addition, Client X was highly isolated at the time of the attempt, hence lacking meaning and purpose and previously had engaged in self-harm via means of cutting. This further supports the 3ST (Klonksy et al, 2015), whereby Client X may have habituated his fear and pain regarding self-inflicted violence, and lacked connection with others that could have further motivated suicidal ideation to transcend into attempt (Klonsky et al, 2015).

Chapter Five

Below outlines the research aim and questions for this chapter

Aim: to critique the Depression, Hopelessness and Suicide Screening Form (DHS; Mills, 2004). Specifically, its validity and reliability properties and general utility when utilised in forensic settings.

Questions:

1. What are the validity and reliability properties of the Depression, Hopelessness and Suicide Screening Form (DHS; Mills, 2004) when utilised in forensic settings?
2. What are the practical implications, limitations and proposed further research for use of the tool in forensic settings?

Chapter Five offered a critique of the DHS (Mills, 2004); the tool utilised in Chapter Four and commonly utilised by clinicals in forensic settings. An overview of the tool was provided, with consideration of how it assists understanding, evaluation and management of an individual's suicide risk. The psychometric critique provides

support for the validity and reliability of the DHS (Mills, 2004) with forensic populations and outlines how the tool demonstrated good prediction of distress and enhanced prediction of suicidal ideation (Mandracchia & Smith, 2014; Martin et al 2004; Pereira et al, 2010; Mills & Kroner, 2008; Mills & Kroner, 2005b) and self-harm (Martin et al, 2014) in male offender samples. However, key information is not included in the manual, such as; sensitivity and specificity values, of which indicates lack of certainty regarding the likelihood of false negatives and false positives it could generate (Gould et al, 2017) and female offender norms, of which could promote misinterpretation of results. In addition, results of the DHS are contingent upon what individuals disclose to practitioners. Although research has indicated inmates responded honestly regarding their reporting of prior suicide indicators (Mills & kroner, 2005), and the DHS has demonstrated a weak relationship with the scale of Denial (a measure of test taking style) within the Basic Personality Inventory (Jackson, 1989), verification of internal states such as depression, hopelessness and suicidal ideation are harder to deduce. Therefore, use of the DHS (Mills, 2004) should not replace comprehensive risk assessment that incorporates interviews and file review. Finally, the tool was developed in a prison environment. Therefore, despite its utility to screen large numbers such as the probation population, it should be used with caution and balanced with clinical judgement.

Research and clinical implications

Suicidal ideation and behaviours are potentially life-threatening and have demonstrated prevalence amongst the probation population; an identified high-risk group for suicide. Yet, the disparity between research regarding suicide risk into probation populations and custodial populations persists within the research field. The thesis attempted to fill a gap in research by not only focusing on the probation population, but also considering key differences in risk factors associated with suicidal outcomes of ideation and attempt. The findings and conclusions compiled within the thesis have identified risk factors likely to increase an individual's risk of engaging in suicidal ideation and behaviours, discussed tools that can be utilised to screen for suicide risk and provided insight into the lived experience of 'at risk'

individual on probation that could inform prevention initiatives. The thesis shall now consider overall future research and clinical implications.

Chapter Two utilised a systematic review to outline risk factors already identified within the field. Annually, probation practitioners engage with thousands of individuals who have offended and are at increased risk of suicide (Yu & Sung, 2015b), and hence its critical probation practitioners are effective gatekeepers. To achieve this, it is essential probation practitioners receive sufficient training. Training could incorporate practical steps to help prevent suicide, such as information of pertinent risk factors and information of referral pathways to relevant agencies. In addition, training could include information regarding through-the-gate services for support and safeguarding during transition from custody to community. However, knowledge regarding risk factors alone is not enough. It is paramount that follow-up is completed with individuals who have disclosed suicidal thoughts or behaviour attempt (Sabbatine, 2007; Sorenson & Vittes, 2008; Yu & Sung, 2015a) and hence training could increase confidence to identify, manage and effectively communicate suicide risk concerns (Mackenzie, 2015). However, there is need for clarification and further discussion regarding the role and responsibility of probation practitioners regarding the limits of duty of care and managing non-criminogenic needs like suicide risk (Cook & Borill, 2013).

Chapter Three utilised quantitative research methods to identify differences between men who experience suicidal ideation, attempt and no history of suicidal ideation or attempt and a tool was developed to identify vulnerabilities to suicidality. The tool could be completed in-action to enable consideration of the compound effect of multiple vulnerabilities on an individual's potential risk of suicide. Probation practitioners are over-worked and under-resourced (Paparozzie & DeMichele, 2008), and use of the tool provides a pragmatic and cost-time effective solution to identify individuals who may be at risk and require further provisions and support. The study holds limitations in that use of suicidal outcomes as the criterion variable denotes the study as retrospective in design. Therefore, caution should be exercised when

using the tool and it should be used in conjunction with clinical judgement. Furthermore, the tool was developed from a sample with similar proportions of controls and attempts, otherwise known as equal priors. Ideally, the tool should be developed from a sample of greater controls. Although this would increase the number of false positives attained by the tool, it would more accurately reflect the prevalence of suicide attempts in the probation population.

Despite its limitations, Chapter Three is the first study to identify significant differences between those who think about suicide, and those who act on those thoughts amongst those serving a probation order. Therefore, findings can form a basis for future prospective research that can precisely report the sequence of every predictor and outcome (Dazel et al, 2020). A large prospective study of suicide in probation that utilises an ideation-to-action model would be beneficial to identify interventions in probation services to reduce suicide rates (Brooker et al, 2021). It would also be beneficial for suicide attempts to be formally recorded on probation records so this data can be easily obtained, and risk management protocols and follow-up can be adhered to. At present, OASys records any history of self-harm, suicidal ideation or attempt. However, these are separate phenomena with distinctive functions and precipitating factors. Hence, it could be beneficial to document each outcome separately and to map the date of when the outcome occurred to identify temporal risk factors. Finally, the proposed tool could be validated on alternative samples, and could compare individuals on probation who are; high risk of harm to others, not engaged with a mental health service, and women, to ascertain whether further differences exist.

Chapter Four comprised a single case study that reported on the assessment, formulation and intervention of a young adult male serving a probation order. The case study illustrates how CBT (Beck & Beck, 2020) and DBT (Linehan, 2014) informed intervention reduced feelings of hopelessness and the presence of suicidal ideation, of which there is an established significant relationship found in forensic and general population samples (Chin & Holden, 2013; Yu & Sung, 2015b). It is proposed hopelessness as an important feature to consider when formulating

presence of suicidal ideation or associated risk behaviours. Furthermore, life stressors have also been associated with the presence of suicidal ideation (Fitzpatrick et al, 2007), and in the case of Client X instance encouraged suicidal ideation to transcend into a suicide attempt. Therefore, emotional regulation intervention may further assist to help manage associated stressors and hence reduce the likelihood of suicidal thoughts or behaviours as a form of coping. However, the case study illustrates the importance of intervention beyond solely the psychological. Attention should be permitted to the context whereby distress arises, of which requires adequate funding and resources beyond mental health services. Despite the case study demonstrating support for the use of DBT (Linehan, 2014) and CBT (Beck & Beck, 2020) informed intervention for suicide prevention, each case should be formulated individually with support from psychology professionals. Finally, the tool developed in Chapter Three successfully identified vulnerabilities for suicide with Client X. Although this further supports the validity of the tool, further validity and reliability of the tool should be tested on a larger probation sample.

Chapter Five offered a critique of the DHS (Mills, 2004), a suicide screening tool utilised in Chapter Four and commonly used by clinicals in forensic settings. Chapter Five outlined benefits of utilising the tool in clinical practice, including the benefits of standardised scoring to promote objective results amongst a large population in a reduced resource and time intensive manner. The supervision requirements for the probation population illicit an effective mechanism for screening, however resource limitations often result in screening components of effective suicide prevention protocol being overlooked. However, this brief self-report instrument demonstrates potential to identify individuals at increased risk of harm to self of which could be utilised in the intake process (Mills & Kroner, 2005). However, it is important to consider the tool was standardised for prison populations whereby more extensive file information and observation opportunities are likely to be available, and therefore clinical judgement should be exercised in circumstances where this is not available. Finally, the DHS was not developed as a substitution for a comprehensive assessment of hopelessness, depression, or risk of harm to self (Mills & Kroner,

2004). However, this task may lay beyond the ever-increasing role of the probation practitioner (Cook & Borill, 2013).

Conclusions

The final thesis chapter has surmised overall findings and reflected on implications for research and clinical practice. Clinically, evidence-informed guidelines for practitioners working with individuals on probation at risk of suicide may be particularly beneficial to provide insight into effective interventions and risk management. Regarding research, the lack of universally agreed-upon definition regarding what constitutes suicidal ideation, behaviours and even completed suicide has hindered progress in suicide theory and research (Klonsky, 2016). The multiplicity of definitions reflects suicide's complex nature, however is one factor that contributes to inconsistency in research findings and possible under-reporting of suicide in high-risk groups. Hence, existing research may not accurately reflect real life suicide risk for individuals on probation, of which can perpetuate further disparities in care. Therefore, clear definitions of what constitutes suicidal outcomes may be beneficial to aid progress within the suicide research field. Furthermore, although findings can form a basis for future prospective studies, these studies hold practical and ethnical limitations as intervention would be required if a suicide attempt is imminent. However, use of the ideation-action framework for probation populations would support advancing suicide knowledge and prevention (Klonsky, 2016).

Each chapter of the thesis aimed to update practitioners' knowledge and confidence regarding risk factors relevant to the assessment of suicide risk and inform empirically supported individualised suicide prevention programmes (Cook & Borill, 2013; McCullumsmith et al, 2013). However, probation do not have surplus resources to manage suicide risk. Responsibility must be shared between probation, prison and community services to provide integrated, quality resettlement support and care for people on probation (Pratt et al, 2006). The thesis indicates the utility of mental health partnership with The National Probation Service for assessment and

intervention services. Third sector psychology services have demonstrated efficiency and efficacy within Community Rehabilitation Company (Fowler et al, 2019). However, to our knowledge mental health provisions appear lacking in current National Probation Service provision, whereby reliance is held upon community mental health teams. The nature of work completed within third-partner service embedded within probation is often limited in duration of intervention. However, specialist consultation and formulation with psychology professionals could support identification of intervention to address more deep-seated difficulties, of which has demonstrated efficacy within the Offender Personality Disorder Pathway (Knauer et al, 2017).

Although there are vast numbers of individuals on probation, supervision includes an intake assessment and regular reporting of which can support suicide screening as part of risk assessment. Although probation practitioners require training to identify, manage and effectively communicate suicide risk concerns; screening is responsive to the demands on probation practitioners. The thesis outlines two possible screening mechanisms; the tool developed from the empirical research paper and the DHS (Mills, 2004). Limitations of both tools should be held in mind due to screening tool development from a retrospective design and the DHS (Mills, 2004) being developed with prison samples. Although both tools should never mitigate the necessity for ongoing monitoring of dynamic risk factors of harm to self, they could be utilised in conjunction with clinical judgement, existing reports and behavioural observation. Furthermore, it is demonstrated that engagement with health services for individuals who have offended is incommensurate in relation to their level of need, and therefore additional support may be required to overcome these barriers to prevent further disparities in care when risk is identified (Brooker et al, 2012; Hausmann et al, 2011; Phillips et al, 2018).

Although the probation population has been neglected in the field of suicide research, there is evidence of deserved increasing research interest and attention. Despite this progress, we must not lose sight that further developments are required

to support the Department of Health and National Probation Strategy to improve awareness of suicide risk and prevention for this high-risk group (Department of Health & Social Care, 2023; National Probation Service, 2019). Future research regarding suicide risk in probation should be prioritised to ensure individuals on probation receive the attention they desperately need and deserve.

Despite positive outcomes of the thesis as a whole, there is still much work to be done in understanding the aetiology of suicide risk amongst this population, including how it can be identified, assessed and managed. It is highly recommended that further evaluation and research is completed to support this high-risk group for suicide to continue to advance current knowledge and understanding of suicide risk on probation.

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Appendices

Appendix A: Inclusion and exclusion criteria (PECO)

PECO	Inclusion	Exclusion
Population	Men and women aged over 18 People on probation Setting: Supervised on probation or community order	Young offenders Setting: Prison or psychiatric settings Samples not supervised by probation or international equivalent
Exposure	Characteristics regarded as risk/protective factors present Included studies report on a broad range of exposures including but not limited to the following: a) Demographic factors: gender, ethnicity, relationship status, employment, religion. b) Criminological factors: sentence length, offence type, previous offending history, length of imprisonment, length of order, order type c) Clinical factors: history of attempted suicide, recent suicidal ideation, being on psychotropic medication, psychiatric diagnosis, substance or alcohol misuse, contacts with healthcare providers.	
Comparator	Any distinct group as permitted within the defined inclusion populations (see above), or no specified comparator	Data from excluded populations (as above) will not be evaluated or synthesised

Outcomes	Suicidal tendencies (i.e. ideation, attempt, self-inflicted death) using psychometric, self-report and recording systems	Self-harm Self-inflicted death of which was not documented as suicide
Study design	Any comparative quantitative study design Cohort, cross-sectional and Case Control	Editorials, reviews, opinion papers, commentaries and book chapters Qualitative or case studies Secondary research
Language	Material published in English & Welsh only, matching the inclusion populations (as above)	Non-English articles

Study number:

Type and language of study	Yes/No/Partial/Unclear	Exclusion criteria
Is the study design: Cohort Case control Cross-sectional		If no exclude
Is the study reported in English or Welsh?		If no exclude

Participants in the study	Yes/No/Partial/Unclear	Exclusion criteria
Were the participants male/female adults aged 18 years old or over?		If no exclude
Were the participants supervised in the community?		If no exclude
Where are participants from?		N/A

Exposures in the study	Yes/No/Partial/Unclear	Exclusion criteria
Were sociodemographic/clinical/offending variables identified?		If no exclude

Comparators in the study	Yes/No/Partial/Unclear	Exclusion criteria
Where a comparator group is included		If no exclude
Was the comparator group one of the included participant groups as defined above?		
If not, is data pertaining to the target participant groups separable from the other data?		

Outcomes in the study	Yes/No/Partial/Unclear
Were at least one of the following outcomes measured a. Suicide b. Suicide attempt c. Suicidal ideation d. Suicide risk	If no exclude
Comments	

Appendix B: Quality assessment

- U = Unknown
- 1 point for every high quality 'Yes' (Y) response
- 0.5 points for every 'Partial' (P)
- 0 points for every inadequate/low quality 'No' (N) response

Study design: Cohort (CASP UK, 2018)

Section A: Are the results of the study valid?

Q1. Did the study address a clearly focused issue?

HINT: A question can be 'focused' in terms of; population studied, risk factors studied, is it clear whether the study tried to detect a beneficial or harmful effect? The outcomes considered?

Q2. Was the cohort recruited in an acceptable way?

HINT: Look for selection bias which might compromise the generalisability of the findings: was the cohort representative of a defined population? Was there something special about the cohort? Was everybody included who should have been?

Q3. Was he exposure accurately measured to minimise bias?

HINT: Look for measurement or classification bias: did they use subjective or objective measurements? Do the measurements truly reflect what you want them to (have they been validated)? Were all the subjects classified into exposure groups using the same procedure?

Q4. Was the outcome accurately measured to minimise bias?

HINT: Look for measurement or classification bias: did they use subjective or objective measurements? Do the measurements truly reflect what you want them to (have they been validated)? Has a reliable system been established for detecting al the cases (for measuring disease occurrence)? Were the measurement methods

similar in the different groups? Were the subjects and/or the outcome assessor blinded to exposure (does this matter)?

Q5. Have the authors identified all important confounding factors?
HINT: List the ones you think might be important, and ones the author missed
Q5b. Have they taken account of the confounding factors in the design and/or analysis?
HINT: look for restriction in design, and techniques, e.g. modelling, stratified, regression, or sensitivity analysis to correct, control or adjust for confounding factors.

Q6. Was the follow up of subjects complete enough?
HINT: the good or bad effects should have had long enough to reveal themselves? The person that are lost to follow up may have different outcomes than those available for assessment? In an open or dynamic cohort, was there anything special about the outcome of the people leaving, or the exposure of the people entering the cohort?
Q6b. was the follow up of subjects long enough?

Subject B: What are the results?
Q7. What are the results of this study?
HINT: Consider what are the bottom line results? Have they reported the rate or the proportion between the exposed/unexposed, the ratio/rate difference? How strong is the association between exposure and outcome (RR)? What is the absolute risk reduction (ARR)?

Q8. . How precise are the results?
HINT: look for the range of the confidence intervals, if given

Q9. . Do you believe the results?

HINT: Consider big effect is hard to ignore, can it be due to bias, chance or confounding? Are the design and methods of this study sufficiently flawed to make the results unreliable? Bradford Hills criteria (e.g. time sequence, dose-response gradient, biological plausibility, consistency)

10.Can the results be applied to the local population
HINT: Consider whether a cohort study was the appropriate method to answer this question? The subjects covered in this study could be sufficiently different from your population to cause concern? Can you quantify the local benefits and harm?

11.Do the results of this study fit with other available evidence?

12. What are the implications of this study for practice?
HINT: Consider one observational study rarely provides sufficiently robust evidence to recommend changes to clinical practice or within health policy decision making. For certain questions, observational studies provide the only evidence. Recommendations from observational studies are always stronger when supported by other evidence

Study design: Case control (CASP UK, 2018)

- U = Unknown
- 1 point for every high quality 'Yes' (Y) response
- 0.5 points for every 'Partial' (P)
- 0 points for every inadequate/low quality 'No' (N) response

Section A: Are the results of the trial valid?

1. Did the study address a clearly focused issue?

HINT: An issue can be 'focused' In terms of: the population studied, whether the study tried to detect a beneficial or harmful effect and the risk factors studied

2. Did the authors use an appropriate method to answer their question?

HINT: Is a case control study an appropriate way of answering the question under the circumstances? Did it address the study question?

3. Were the cases recruited in an acceptable way?

HINT: We are looking for selection bias which might compromise validity of the findings. Are the cases defined precisely? Were the cases representative of a defined population (geographically and/or temporally)? Was there an established reliable system for selecting all the cases? Are they incident or prevalent? Is there something special about the cases? Is the time frame of the study relevant to disease/exposure? Was there a sufficient number of cases selected? Was there a power calculation?

4. . Were the controls selected in an acceptable way?

HINT: We are looking for selection bias which might compromise the generalisability of the findings. Were the controls representative of the defined population (geographically and/or temporally)? Was there something special about the controls? Was the non-response high, could non-respondents be different in any

way? Are they matched, population based or randomly selected? Was there a sufficient number of controls selected?

5. Was the exposure accurately measured to minimise bias?

HINT: We are looking for measurement, recall or classification bias? W?as the exposure clearly defined and accurately measured? Did the authors use subjective or objective measurements? Do the measures truly reflect what they are supposed to measure (have they been validated)? Were the measurement methods similar in the cases and controls? Did the study incorporate blinding where feasible? Is the temporal relation correct (does the exposure of interest precede the outcome)

6. (a) Aside from the experimental intervention, were the groups treated equally?

HINT: List the ones you think might be important, that the author may have missed

6. (b) Have the authors taken account of the potential confounding factors in the design and/or in their analysis?

HINT: Look for restriction in design, and techniques e.g. modelling, stratified-, regression-, or sensitivity analysis to correct, control or adjust for confounding factors

7. 7. How large was the treatment effect?

HINT: Consider what are the bottom line results? Is the analysis appropriate to the design? How strong is the association between exposure and outcome (look at the odds ratio)? Are the results adjusted for confounding, and might confounding still explain the association? Has adjustment made a big difference to the OR?

8. How precise was the estimate of the treatment effect?

HINT: Consider size of the p-value? Size of the confidence intervals? Have the authors considered all the important variables? How was the effect of subjects refusing to participate evaluated

9. Do you believe the results?

HINT: Consider- how big effect is hard to ignore! Can it be due to chance, bias, or confounding? Are the design and methods of this study sufficiently flawed to make the results unreliable? Consider Bradford Hills criteria (e.g. time sequence, does-response gradient, strength, biological plausibility)

Section B: Will the results help locally?

10. Can the results be applied to the local population?

HINT: Consider whether the subjects covered in the study could be sufficiently different from your population to cause concern? Does your local setting is likely to differ much from that of the study? Can you quantify the local benefits and harms?

11. Do the results of this study fit with other available evidence?

HINT: Consider all the available evidence from RCT's Systematic Reviews, Cohort Studies, and Case Control Studies as well, for consistency

Study design: Cross-sectional (CASP UK, 2018)

- U = Unknown
- 1 point for every high quality 'Yes' (Y) response
- 0.5 points for every 'Partial' (P)
- 0 points for every inadequate/low quality 'No' (N) response

1. Were the aims/objectives of the study clear?
2. Was the study design appropriate for the stated aim(s)?
3. Was the sample size justified?
4. Was the target/reference population clearly defined?
5. Was the sample frame taken from an appropriate population base so that it closely represented the target/reference population under investigation?
6. Was the selection process likely to select subjects/participants that were representative of the target/reference population under investigation?
7. Were measures undertaken to address and categorise non-responders?
8. Were the risk factor and outcome variables measured appropriate to the aims of the study?
9. Were the risk factor and outcome variables measured correctly using instruments/measurements that had been trialled, piloted or published previously?
10. Is it clear what was used to determined clinical statistical significance and/or precision estimates?
11. Were the methods (including statistical methods) sufficiently described to enable them to be repeated?
12. Were the basic data adequately described?
13. Does the response rate raise concerns about non-response bias?
14. If appropriate, was information about non-responders described?
15. Were the results internally consistent?
16. Were the results for the analyses described in the methods, presented?
17. Were the authors' discussions and conclusions justified by the results?

18. Were the limitations of the study discussed?
19. Were there any funding sources or conflicts of interest that may affect the authors' interpretation of the results?
20. Was ethnical approval or consent of participants attained?

Appendix C: Data Extraction Form

Study number	
Date of data extraction	
Title of Paper	
Author(s)	
Year, source, volume, page(s)	
Country of Origin	
Quality Assessment Score & Number of Unclear Answers	

Re-verification of Study eligibility

PECO	Criterion answer	Yes	No	Partial	Unknown
Population					
Exposure					
Comparator					
Outcome					

Study Characteristics

Aims/Objectives of the study	
Study design	
Study inclusion criteria	
Study exclusion criteria	
Recruitment Procedures	
Study Setting	

Population

Target population	
Source/setting of population	
Age group	
Total number of participants/sample size	

Comparator (Control group)

Control group?	
Control Group Matched?	
Number of controls	
Further details control group	

Methods

How were outcomes measured?	
How were exposures measured?	
How was data analysed?	

Outcomes

Name of risk factors	
Definition of risk factors	
Type of measurement (percentage/odds ratio/risk ratio)	
Is outcome tool validated? Self-report?	
Statistical methods used and appropriateness of these methods (e.g. proportion/percentages/RROR) Dichotomous: odds ratio, risk ratio, and confidence intervals, p value Continuous: mean difference, confidence intervals)	
All systematic and random error adjusted? (e.g. confounding, effect medication etc)	

Appendix D: Frequency of Hits

Key

O = Variable not included in study or reported in analysis

X = Variable not associated with suicidal outcome

✓ = Variable associated with suicidal outcome

Study	Pratt et al (2007)	Phillips et al (2018)	Haglund et al (2014)	Brooker et al (2019)	McCullumsmith et al (2013)	Gunter et al (2011)	Yu & Sung (2015b)	Yu & Sung (2015a)	Candareli (2014)	Cook & Borrill (2013)	Fraction of hits
Outcome	Completed suicide	Completed suicide	Completed suicide	Ideation and attempt	Ideation and attempt	Ideation and attempt	Ideation	Ideation	Ideation	Identified 'at risk of suicide'	
Sociodemographic variables											
Gender (Women)	✓	✓	✓	X	✓	X	X	✓	✓	✓	7/10
Gender (Men)	X	✓	X	X	✓	X	X	X	X	X	2/10
Ethnicity (White)	O	✓	O	X	✓	✓	X	X	X	✓	4/8
Ethnicity (Non-White)	O	X	O	X	X	X	X	✓	X	X	1/8
Age (18-30)	X	X	X	X	✓	X	X	X	X	X	1/10
Age (30-39)	X	✓	X	X	X	X	X	X	X	X	1/10
Age (40-49)	✓	✓	X	X	X	X	X	X	X	X	2/10
≥ Age 50 +	✓	X	X	X	X	X	X	X	X	X	1/10
Education (No school qualifications)	O	O	O	O	✓	X	✓	X	X	✓	3/6
Residential instability	O	O	O	O	✓	O	O	✓	O	✓	3/3

Relationship status	O	O	O	O	✓	X	X	X	O	✓	2/5
Employment status	O	O	O	O	✓	X	X	X	O	✓	2/5
Financial difficulties	O	O	O	O	O	X	O	X	O	✓	1/4
Physical health	O	O	O	X	X	✓	X	X	O	✓	2/5
Clinical variables											
Depressive symptoms or disorder	O	O	O	✓	O	✓	✓	✓	✓	✓	6/6
Anxiety symptoms or disorder	O	O	O	✓	O	✓	O	O	✓	O	3/3
Any other Psychiatric disorder	O	O	✓	✓	O	✓	O	O	✓	O	4/4
Psychiatric treatment	O	O	✓	✓	✓	✓	✓	✓	O	✓	6/6
Illicit substance misuse	O	O	✓	O	O	✓	✓	✓	✓	✓	7/7
Alcohol misuse	O	O	O	O	✓	X	X	X	O	✓	2/5
Psychological distress	O	O	O	✓	O	O	✓	✓	O	O	3/3
Previous victimisation	O	O	O	O	✓	✓	O	O	O	✓	3/3

Attitude to self and problem-solving ability	O	O	O	✓	O	O	O	O	O	✓	2/2
Criminogenic variables											
Violence perpetration	O	O	O	O	O	O	X	✓	O	✓	2/3
Sentence type (post sentence supervision)	O	✓	O	X	O	X	O	O	O	X	1/4
Sexual offending	O	O	O	O	O	O	O	O	O	✓	1/1
Risk of serious harm to others	O	O	O	O	O	O	O	O	O	✓	1/1
MAPPA status	O	O	O	O	O	O	O	O	O	✓	1/1
Being recalled and released or having multiple convictions	O	O	✓	O	O	X	O	O	O	O	1/2
First conviction as an adolescent.	O	O	O	O	O	✓	O	O	O	O	1/1
Temporal variables											
Recent release from custody	✓	✓	✓	O	O	O	O	O	O	O	3/3

Appendix E: Descriptive data synthesis for variables with two hits

Sociodemographic variables

Relationships

Relationship status was identified as significantly associated with suicide risk in two out of five papers that utilised it as a variable (Cook & Borrill, 2013; McCallumsmith et al, 2015). Cook & Borrill (2013) identified difficulties in relationship with current partner, problematic previous experience of close relationships and social isolation as variables that increased the likelihood of staff judgements regarding increased suicide risk. It is of note poor previous experience of close relationships is the only sociological variable within this study to remain significant within the regression model (Cook & Borril et al, 2015). McCallumsmith et al (2015) found that women, irrespective of race, who reported a suicide attempt were more likely to be divorced. However, relationship status was not associated with suicidal ideation or attempts in the other three papers (Yu & Sung, 2015a; 2015b; Gunter et al, 2011), and the remaining five studies did not explore relationships or marital status as a variable (Phillips et al, 2019; Pratt et al, 2007; Haglund et al, 2014; Candarelli et al, 2014 and Brooker et al, 2019).

Physical health

Physical health was identified as associated with suicide risk in two out of five papers that utilised it as a variable (Gunter et al, 2011; Cook & Borrill, 2013). Gunter et al (2011) reported that brain injury increased the likelihood of experiencing suicidal ideation and attempt and Cook & Borill (2013) identified poor physical health as significantly associated with staff judgements regarding increased suicide risk. However, Yu & Sung (2015a; 2015b) did not report a significant association between poor health and suicidal ideation, and the remaining five papers did not explore physical health as a variable possibly associated with completed suicide (Phillips et al, 2019; Pratt et al, 2007; Haglund et al, 2014), suicidal ideation or attempt (Candarelli et al, 2014; Brooker et al, 2009). Finally, McCallumsmith et al (2013) reported that individuals with physical disability were more likely to have

experienced suicidal ideation or attempt, however this group also encompassed individuals who were retired and therefore the effect of disability alone cannot be ascertained.

Employment status

Variables associated with employment were explored in five studies and found to be significantly associated with suicide risk in two (McCullumsmith et al, 2013; Cook & Borrill, 2013). McCullumsmith et al (2013) found unemployment was significantly associated for suicide attempts amongst men and women, irrespective of race. However, employment was only associated to suicidal ideation for white women (McCullumsmith et al, 2013). Cook & Borrill (2013) also found unemployment was with staff judgements of increased suicide risk. Employment was not found to be protective against suicidal ideation (Yu & Sung, 2015a; 2015b) or attempts (Gunter et al, 2013) in the three other studies that utilised it as a variable. The remaining five papers did not explore employment as a variable possibly associated with completed suicide (Phillips et al, 2019; Pratt et al, 2007; Haglund et al, 2014), suicidal ideation or attempt (Candarelli et al, 2014; Brooker et al, 2009).

Clinical variables

Alcohol misuse

Alcohol misuse featured less frequently as a risk factor for suicidal outcomes comparative to illicit substance misuse and was only utilised in five papers (Cook & Borrill, 2013; Gunter et al, 2013; McCullumsmith et al, 2013; Yu & Sung, 2015a; 2015b), with only two papers reporting a significant association (Cook & Borrill, 2013 and McCullumsmith et al, 2013). Cook & Borrill (2013) identified current and historic alcohol misuse as significantly predictive regarding staff's judgements of people on probations suicide risk, however alcohol misuse did not remain significant within the regression model, hence indicating a small effect size or lack of association once controlled for confounding variables. McCullumsmith et al (2013) reported alcohol dependence as a risk factor for people who attempted suicide in community corrections amongst White women and men. However, alcohol dependence was

identified as a risk factor for suicidal ideation amongst White and African-American men. Yu & Sung (2015a;2015b) did not identify alcohol use in the last month as a significant risk factor for suicidal ideation. However, suicidal ideation was measured across 12 months and alcohol use was only measured for the previous month. Although Gunter et al (2013) also did not identify alcohol use and dependence as associated with suicidal ideation or attempt, and more rigorous structured measurement tools were utilised for this variable.

Attitude to self and problem-solving ability

Only two studies explored attitude to self and problem-solving ability, however these were identified as significantly associated to suicidal outcomes in both papers (Brooker et al, 2019; Cook & Borrill, 2013). Brooker et al (2019) found that individuals in the attempt group had significantly lower self-regard and optimism than those with no history using the general self-efficacy score measure, and that those in the attempt group had a significantly lower social problem-solving ability, as measured by the social problem solving inventory, compared to those with no history. Although no other papers utilised these specific measures, Cook & Borrill (2013) found that low problem-solving skills and poor attitude to self were associated with staff judgements regarding suicide risk, as based by their own professional judgement.

Previous suicidal tendencies

Only two papers utilised history of suicide attempts as a variable associated with suicide risk. Previous experience of self-harm, suicide attempts or suicidal thoughts remained significant within Cook & Borrill's (2013) regression model to predict staff's judgements on suicide risk, and Haglund et al (2014) identified previous suicide attempt as increasing likelihood of completed suicide by nearly 4-fold.

Appendix F: Primary study ethical approval

Georgia West

Research & Innovation
St Andrew's Healthcare
Billing Road
Northampton
NN1 5DG

E: research@standrew.co.uk

T:01604 616088

Tuesday 25 May 2021

Dear Georgia

RE: 197_Risk factors for suicide within men under probation supervision: Can we predict the likelihood of acting on suicidal ideation?

I am pleased to advise that we are able to give **final** approval for you to conduct your research project at St Andrew's Healthcare.

To confirm:

Roles & responsibilities

Role	Who
Principle investigator/Chief Investigator	Georgia West/Kevin Browne
Sponsor	University of Nottingham
Funder	University of Nottingham
Clinical research advisor	Eve Hepburn
Data controller	Johnny Rico (CRC)
Data processor	Georgia West
Ethics review	University
Authorship details	Georgia West, Eve Hepburn, Kevin Browne

Expectations

In relation to projects conducted at St Andrew's Healthcare, you will be required to:

- Update the department on a regular basis – **the first update will be required in August 2021**
- Comply with St Andrew's policies & procedures, and with any request to audit compliance
- Follow authorship good practice
- Send a draft of all publications to research@standrew.co.uk prior to final publication

April 1, 2021

Dear Georgia West:

I'm pleased to inform you that our Research Committee has approved your request for data, related to your project: "Risk Factors for Suicide Within Men Under Probation Supervision."

The conditions of the approval require that the data be anonymised so that no service-user names are used.

If you have any further questions, please contact John Rico at johnny.rico@londoncrc.org.uk.

Regards,

John Rico
Research Manager

University of Nottingham
UK | CHINA | MALAYSIA

Faculty of Medicine & Health Sciences
Research Ethics Committee
Faculty Hub
Room E41, E Floor, Medical School
Queen's Medical Centre Campus
Nottingham University Hospitals
Nottingham, NG7 2UH
Email: FMHS-ResearchEthics@nottingham.ac.uk

12 March 2021

Georgia West
Doctorate in Forensic Psychology Top-up
Yang Fujia Building
Psychiatry and Applied Psychology
School of Medicine
University of Nottingham Jubilee Campus
Wollaton Road
Nottingham, NG8 1BB

Dear Ms West

Ethics Reference No: FMHS 185-0221 **– please always quote**	
Study Title: Risk factors for suicide within men under probation supervision: Can we predict the likelihood of acting on suicidal ideation?	
Chief Investigator/Supervisors: Professor Kevin Browne, Forensic Psychology, Dr Elizabeth Paddock, Assistant Professor of Forensic Psychology, Psychiatry and Applied Psychology, School of Medicine	
Lead Investigators/student: Georgia West, Doctorate in Forensic Psychology,Top-Up, School of Medicine	
Other Key researchers/collaborators: Dr Charlie Brooker, Honorary Professor Centre for Sociology and Criminology, Royal Holloway, University of London	
Proposed Start Date: 01/03/2021	**Proposed End Date:** 30/09/2022

Thank you for submitting this straightforward anonymised secondary database analysis study which was considered at a sub-committee meeting on 22 February 2021 and the following documents were received:

- FMHS REC Application form version 1.0: 06.02.2021
- Data Management Plan dated 06.02.2021
- Provisional approval MTC Novo, London CRC (probation) Jan 2021

These have been reviewed and are satisfactory and the project has been given a favourable ethics opinion.

A favourable ethics opinion has been given on the understanding that:

1. The protocol agreed is followed and the Committee is informed of any changes using a notice of amendment form (please request a form).
2. The Chair is informed of any serious or unexpected event.
3. An End of Project Progress Report is completed and returned when the study has finished (Please request a form).

Yours sincerely

Dr John Williams, Associate Professor in Anaesthesia and Pain Medicine
Chair, Faculty of Medicine & Health Sciences Research Ethics Committee

Appendix G: Case Study consent form

Case Study Consent form

I consent for information regarding my assessment, formulation, intervention and outcomes to be comprised as a Case Study for the requirements of The University of Nottingham Doctorate in Forensic Psychology.
I understand that this piece of work, although not published, can be made available to a third party who requests it under the Freedom of Information Act.
I understand that consent forms will be kept securely like confidential documents and will be archived securely for seven years.
I understand my right to withdraw consent at any time
I understand that all personal information will remain anonymised, and any identifiable information will be kept secure and removed as soon as possible

Name: XXXX

Signed: JC

Date: 12/10/2020

Appendix H: Client X longitudinal formulation

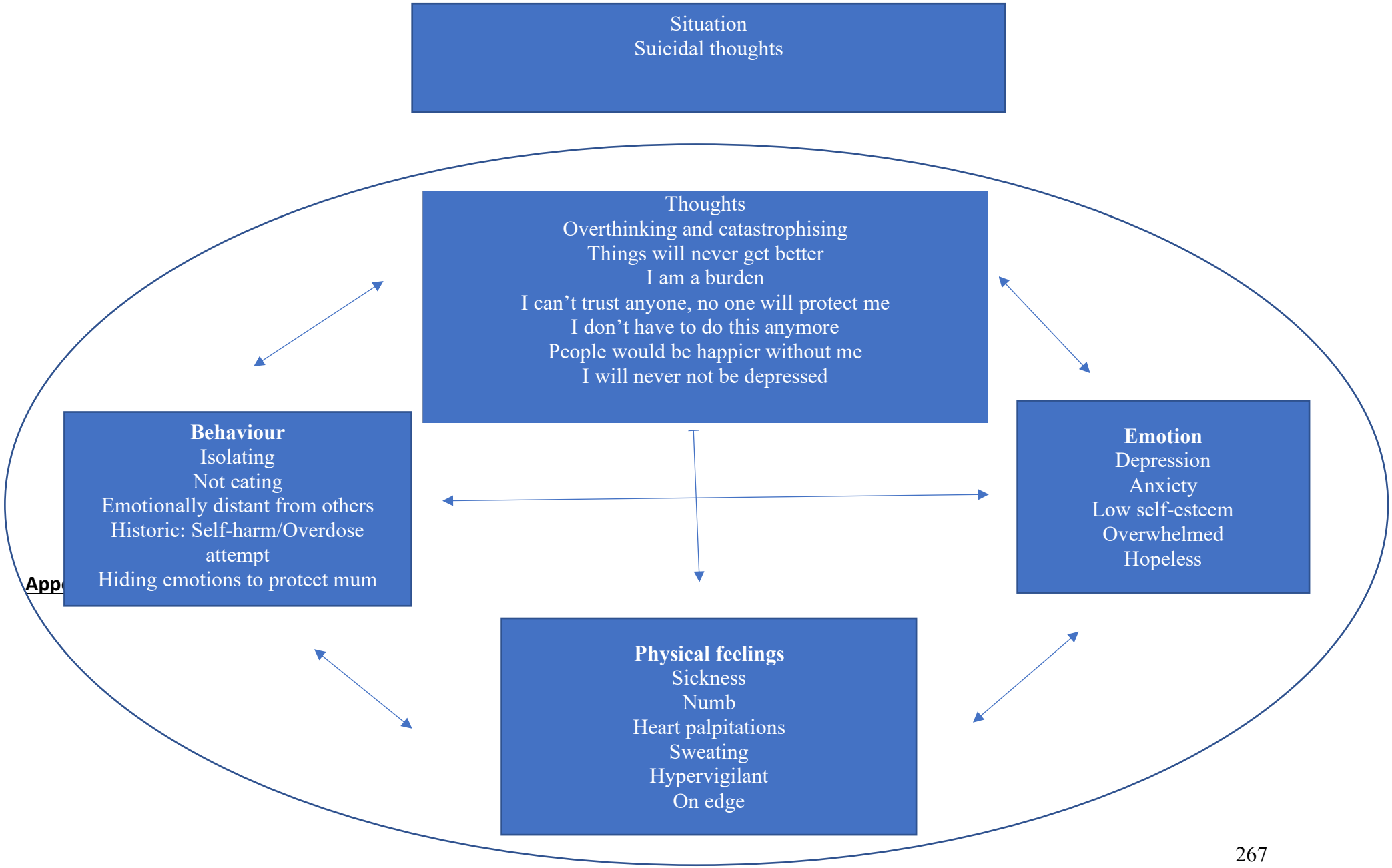
Early experiences
Estranged relationship with Dad
Victim of physical abuse and witnessed domestic abuse perpetrated by Dad against Mum
Traumatic experiences – witnessing Dad's drug abuse and feared he had died
Feelings of helplessness/unprotected
Exposure to substances from young age
Truanted school

Rules/Assumptions
If I carry a knife, then I am safe
If I wasn't here, then I wouldn't have to feel this way anymore.
If the world doesn't improve then I will always feel like this
People won't protect or rescue me, so what is the point in relationships or trusting anyone
If I leave the house, I would be harmed

Core beliefs
The world is unsafe
Part of my personality is to be on edge because of what has happened to me
I will never not be depressed
I can't trust anyone
I am a burden
I'm not good enough – I make others' life worse

Precipitating/Environmental factors

Failing in school
Lack of control over life
Feeling let down
Attacked and mugged with knife
Bullied at school
Increase exercise and reduction in eating at young age


Situation
Suicidal thoughts
Thoughts
Overthinking and catastrophising
Things will never get better
I am a burden
I can't trust anyone, no one will protect me
I don't have to do this anymore
People would be happier without me
I will never not be depressed
Behaviour
Isolating
Not eating
Emotionally distant from others
Historic: Self-harm/Overdose attempt
Hiding emotions to protect mum
Emotion
Depression
Anxiety
Low self-esteem
Overwhelmed
Hopeless
Physical feelings
Sickness
Numb
Heart palpitations
Sweating
Hypervigilant
On edge

What made me vulnerable in the first place?

Estranged relationship with Dad

Victim of physical abuse and witnessed domestic abuse – felt unprotected

Traumatic memories of witnessing drug abuse and fears of Dad's death

Exposure to substances

Truanted school

The problem:
Anxiety, depression and suicidal thoughts/behaviour

What positive things do I have going for me?

-Supportive relationship with Mum
-Engaging well with Probation
-Motivated to address mental health issues

What triggered my most recent episode?

Failing academically
Unable to cope alone
Feeling let down
Feeling at risk of harm
Bullied at school
Increase exercise and reduction in eating
Robbed at knife point
Hiding emotions

What keeps the problem going?

- A sense of lack of control
- Feeling unprotected
- Negative core beliefs (i.e. I will always be depressed)
- Isolating/not leaving the house
- Suicidal ideation

Appendix J: Signposting letter

London
Community Rehabilitation Company
PROBATION

PRIVATE AND CONFIDENTIAL

RE: XXXXX

To whom it may concern,

XXXX was referred to St XXXX within London Community Rehabilitation Company for a mental health assessment. As the assessing clinician, I am writing to you to see if you may be able to help address the following recommendations. I am hoping that you may review XXXX; and his past medical records, to see whether you think the below may be beneficial.

I believe it may be beneficial for XXXX to recommence his prescription of antidepressants. He reported that he stopped taking them last year once the prescription had expired, however he identified the medication as helpful to alleviate low mood, improve sleep and increase appetite; all of which he currently identifies as presenting problems. XXXX expressed being unable to arrange a medication review yet himself, or via his mother, and requested whether I could prompt a suggestion for this.

Furthermore, XXXX disclosed being diagnosed with bulimia in his adolescent years. Although XXXX is unable to provide specific details of this diagnosis, he reported currently eating only one meal a day. I wanted to make you aware, in case having his weight/food and fluid intake monitored over time was required. I believe psychological intervention with an eating disorder specialist may be beneficial for XXXX. In addition, he stated he would appreciate some education on food and nutrition in the hope he can take positive steps to improve his energy levels.

Finally, XXXX continues to report daily nausea in the morning, and presents as distressed and concerned regarding this. He has continually reported that he would like medical support to help the feeling to subside. It is of note that XXXX physical health concerns have a significant impact on his mental health and emotional well-being, and I believe support with this would further improve his progress in psychological intervention. Any due consideration you can give to reviewing his case would be appreciated

Many thanks
Georgia West
BSc, MSc, MBPsS
Forensic Psychologist in Training

Supervised by:
Dr Eve Hepburn
HCPC Registered Forensic Psychologist
Acting Principal Psychologist

Appendix K: Follow up Satisfaction Questionnaire

Name (optional): XXXX

Psychologist: Georgia West

1. Overall, how satisfied were you with the service? :

1	2	3	4	**5**
Not at all satisfied				Extremely Satisfied

2. Thinking about your own progress during and after the treatment, how would you rate your progress in the following area:

(i) Ability to manage your emotions

1	2	3	**4**	5
Limited Progress				Lots of progress

(ii) Ability to deal with problems

1	2	3	**4**	5
Limited Progress				Lots of progress

(iii) Confidence to use the skills introduced in treatment

1	2	3	4	**5**
Limited Progress				Lots of progress

3. Have you used any of the skills introduced in treatment? **Yes** / No

3a. If yes, were the skills helpful in that situation? **Yes** / No

4. How helpful will completing this treatment be for your future?

1	2	3	4	**5**
Not at all helpful				Extremely helpful

Please turn over

5. Thinking about the service, how would you rate:

(i) Session Material

1	2	3	4	**5**
Not at all satisfied				Extremely Satisfied

(ii) Flexibility (e.g. Appointment times)

1	2	3	4	**5**
Not at all satisfied				Extremely Satisfied

6. Is there anything you would have liked the service to have done differently? :

No

7. Any other comments:

Very helpful and will always remember it for the rest of my life

When completed, please return to Probation reception.

Thank you

Appendix L: Depression, Hopelessness and Suicide Screening Form (Mills, 2004)

Name:_____ FPS #:_____ Date_____

DHS Scale

Please answer all of the questions. Circle either T (True) or F (False).

		True	False
1.	I feel sad most of the time.	T	F
2.	My future seems bleak.	T	F
3.	Sometimes I feel bad for no reason.	T	F
4.	I have been diagnosed as being depressed by a psychiatrist or psychologist in the past.	T	F
5.	I am mostly happy.	T	F
6.	I can't see how my circumstances will get better.	T	F
7.	I feel like a failure and I am disappointed with myself.	T	F
8.	I have close friends or family members who have killed themselves.	T	F
9.	I have a normal amount of energy.	T	F
10.	Life is too hard for me right now.	T	F
11.	I seem to get distracted easily.	T	F
12.	Suicide is not an option for me.	T	F
13.	I feel tired a lot of the time.	T	F
14.	My future will be mostly happy.	T	F
15.	I have trouble sleeping at night.	T	F
16.	I have had serious thoughts of suicide in the past.	T	F
17.	Usually I sleep soundly.	T	F
18.	No matter what I do, things don't get better.	T	F
19.	I feel down most of the time.	T	F
20.	I have intentionally hurt myself.	T	F
21.	I am often bored and unhappy.	T	F
22.	I am certain I can make something of myself.	T	F
23.	Sad thoughts keep me awake at night.	T	F
24.	If circumstances get too bad, suicide is always an option.	T	F
25.	I have many interests I follow.	T	F

Please answer all of the questions. Circle either T (True) or F (False).

	True	False
26. Most times things don't seem to go my way.	T	F
27. Lately I prefer to keep to myself.	T	F
28. In the past my suicidal thoughts have led to a suicide attempt.	T	F
29. I have lost my appetite.	T	F
30. It is hard for me to see myself being happy.	T	F
31. My life is generally satisfying and interesting.	T	F
32. I have attempted suicide more than once in the past.	T	F
33. My problems don't seem to end.	T	F
34. I have attempted suicide in the past two years.	T	F
35. I feel my situation is hopeless.	T	F
36. I have recently had thoughts of hurting myself.	T	F
37. I don't think I will amount to anything.	T	F
38. Life is not worth living.	T	F
39. I have a plan to hurt myself.	T	F