

**Differences Between Controls, Ideators, and Enactors of Self-Harm in a Sample
of Transferred Prisoners Through the Lens of the Integrated Motivational-
Volitional (IMV) Model**

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Thesis Declaration Form

I confirm that the work presented in this thesis is my own. Where information has been derived from other sources, I confirm that this has been indicated in the thesis.

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Overview

Self-harm is a significant and common issue in prisoners, yet very limited research has been conducted on this important topic. This thesis therefore aimed to increase our understanding of self-harm in prisoners.

Part One is a conceptual review that critically and comprehensively reviews and synthesises the literature on self-harm and suicide. Specifically, the review addresses the current terminology/definition debate, evaluates the research on risk factors, and synthesises the most prominent theories/models as well as the current state of self-harm and suicide research in the general population. The review identifies several critical research gaps, the main one being the crucial need to test and apply comprehensive as well as integrative self-harm/suicide theoretical models on different populations.

Part Two is an empirical paper that attempts to address the above critical research gap by testing the applicability of a comprehensive theoretical model of self-harm (Integrated Motivational-Volitional (IMV) Model), originally developed for the general population, on a sample of male transferred prisoners. Specifically, this cross-sectional study aimed to examine how controls, ideators of self-harm, and enactors of self-harm differed on the IMV model's factors (perceived entrapment, brooding rumination, social support, impulsivity, fearlessness about death, discomfort intolerance), depression, hopelessness, and a new protective factor of resilience. The results of this study provided partial support for the IMV Model. This was a joint project that was conducted with another UCL D.Clin.Psy trainee.

Part Three is a critical appraisal of the entire research process. Topics discussed include: reflections on conceptual issues that arose during the research, challenges of conducting research in a prison, and ideas for future research.

Impact Statement

This thesis has a number of implications for both academia and clinical practice.

The conceptual review (Part One) advances the field as it thoroughly compares self-harm with suicide in the general population. It evaluates the most prominent theories and models of self-harm/suicide in order to assist clinicians in selecting the appropriate theory/model to use in practice – both in terms of risk assessment and intervention. Moreover, the review also highlights the various gaps in the literature that need to be addressed by future researchers. For example, there is a vital need to test existing comprehensive as well as integrative suicide/self-harm theoretical models on different populations, investigate protective factors, and utilise longitudinal methodologies in future studies.

The empirical paper (Part Two) found partial support for the use of a comprehensive and integrative ideation-to-action framework model to understand self-harm in prisoners. This finding is particularly important because research on self-harm in prison populations has mostly been atheoretical. Thus, this research project furthers our understanding of self-harm in prisoners, demonstrates the usefulness of a comprehensive and integrative ideation-to-action framework model, and lays the groundwork for future research to build upon. This research project also encourages the field to use a theory-based as well as dynamic approach to understand, assess, and treat self-harm in prisoners. More specifically, the model used in this study can aid in the prediction of self-harm, provide guidance to clinicians in terms of what factors to assess for (risk assessment), and assist clinicians in developing interventions that target these factors to reduce risk. Ultimately, this study and the dissemination of its findings could potentially improve

the current self-harm prevention and treatment procedure in U.K. prisons (ACCT process), and inform the development of best practice guidelines for assessing, preventing, and treating self-harm in prisoners worldwide.

Lastly, the critical appraisal (Part Three) highlights the various challenges of conducting research in prisons. It also offers several solutions to these challenges for future researchers to implement in their studies.

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Part One: Literature Review (Conceptual Introduction)

**Risk Factors, Theories, and Theoretical Models of Suicide and Self-Harm in the
General Population: A Conceptual Review**

Abstract

Aims

To critically and comprehensively review and synthesise the current state of self-harm and suicide (including attempted suicide) research – specifically examining what is known about risk factors, theories, and theoretical models.

Method

A comprehensive search of the literature was conducted using the psycINFO electronic database. This was supplemented by searching the references of relevant works.

Results and Conclusions

The prevalence rates of both phenomena are extremely high thus there is a vast amount of studies dedicated to researching the risk factors for these phenomena. However, as the predictive ability of single risk factors is limited, future research should be dedicated to developing and testing comprehensive as well as integrative self-harm/suicide theoretical models on different populations. By doing this, we can not only gain a better understanding of these phenomena, but also facilitate the development of appropriate prevention and treatment interventions.

Introduction

This project is intended to increase our knowledge of self-harm in prisoners. The rate of self-harm in prisoners (100 per 100,000) is significantly higher than in the general population (21 per 100,000) (Fazel, Grann, Kling, & Hawton, 2011). Despite this, there are very few studies attempting to understand self-harm in prisoners via testing existing self-harm theories/models on the prison population, and even fewer studies researching protective factors in the prison population. Consequently, we aimed to fill this critical research gap by: a) testing the applicability of a comprehensive theoretical model of self-harm (Integrated Motivational-Volitional (IMV) Model of Suicidal Behaviour (O'Connor, 2011a)), originally developed for the general population, on a prison population, and b) adding an additional, new protective factor to the model. This was done using the conventional cross-sectional study design where prisoners completed self-report measures that mapped onto the model's factors as well as the new protective factor. We then analysed how controls, ideators of self-harm, and enactors of self-harm differed from each other on the above factors. Overall, this project has four overarching aims: 1) inform our understanding of self-harm in prisoners, 2) expand the IMV model in order to 3) lay the groundwork to test the final model longitudinally in the future, and 4) utilise the model in prisons to aid in the development of appropriate prevention and treatment interventions for prisoners who self-harm. The following conceptual review will critically and comprehensively review and synthesise the essential research and theoretical background that inspired this project. The review will start with a discussion on the terminology and definition debate, evaluate the research on risk factors, and end with a synthesis of the most prominent theories/models as well as the current state of self-harm/suicide research.

Terminology and Definition of Suicide, Suicide Attempt, and Self-Harm

Unclear and inconsistent terminologies and definitions of concepts can lead to problems in research, clinical practice, and public health (De Leo, Burgis, Bertolote, Kerkhof, & Bille-Brahe, 2006). For instance, without consistent terminologies and definitions, research studies are unable to be compared, and assessments as well as measures of concepts cannot and will not be valid or reliable. Consequently, it is crucial to begin this conceptual review by examining current terminologies and definitions of suicide, suicide attempt, and self-harm.

Suicide has been defined as “the act of deliberately killing oneself” (WHO, 2014, p. 12). The grey area and debate focus on the terminologies and definitions of suicide attempt and self-harm. Besides the terms “suicide attempt” and “self-harm”, other common terminologies include: deliberate self-harm, deliberate self-injury, intentional self-harm, intentional self-injury, self-injury, self-injurious behaviour, non-suicidal self-injury, self-mutilation, self-wounding, self-poisoning, self-inflicted violence, parasuicide, non-fatal suicidal behaviour, and instrumental suicide-related behaviour. Depending on the terminology used, the definition differs as well.

There are many reasons as to why there is much debate about this. One of the main reasons has to do with the issue of intent to die. While some define self-harm as having no intent to die or kill oneself (Klonsky, Oltmanns, & Turkheimer, 2003; Mangnall & Yurkovich, 2008), others define it as harm to self regardless of intent due to the fact that suicide intent can be difficult to assess and determine (WHO, 2014). In fact, the National Institute for Clinical Excellence (NICE) defines “self-harm” as “self-poisoning or self-injury, irrespective of the apparent purpose of the act” (2004, p. 16), and subsequently does not discriminate between suicide attempt and self-harm (James, Bowers, & Van Der Merwe, 2011). Another reason for this

debate around the terminologies and definitions of suicide attempt and self-harm is due to the mixed research evidence regarding the psychological processes that underpin these two phenomena. For example, Simpson (2006) criticises the NICE (2004) definition of self-harm and review and argues that even though these two phenomena may be related, they are underpinned by different psychological processes and hence require different clinical interventions. Conversely, current research does not make this distinction and has accepted the NICE (2004) definition of self-harm. For instance, two recent papers exploring the epidemiology of self-harm in the U.K. included all self-harm, irrespective of motivation (Carr et al., 2016; Geulayov et al., 2016), and a literature review on self-harm and attempted suicide in psychiatric inpatient care (James et al., 2011) found that 78% of the papers that constituted the review also followed the NICE (2004) definition of self-harm. Lastly, service user preferences contribute to this debate as well. According to NICE's (2004) review, many service users object to using the words "deliberate" or "intentional" to prefix self-harm because these words convey that the individual intentionally self-harmed when in fact research has shown that some individuals, especially those who have experienced childhood abuse, can non-intentionally self-harm during dissociative states and afterwards are unaware of any conscious intent to harm themselves.

Given the importance of having clear and consistent terminologies and definitions, many researchers have attempted to propose nomenclatures or classification systems for suicide, suicide attempt, and self-harm (Brenner et al., 2011; De Leo et al., 2006; Silverman, Berman, Sanddal, O'Carroll, & Joiner, 2007a; Silverman, Berman, Sanddal, O'Carroll, & Joiner, 2007b). However, from a recent review of the literature, it seems as though there is still no agreement on terminology

or definitions within or between nations, there remains much confusion and debate, and there is still “a strong need for a cross-cultural, internationally applicable nomenclature” (Silverman & De Leo, 2016, p. 85; see also Cipriano, Cella, & Cotrufo, 2017). Consequently, this conceptual review will consider all terminologies and definitions for the purposes of inclusivity and comprehensiveness. This conceptual review will also explicitly state the terminology and definition utilised by each theorist to ensure clarity and prevent ambiguity.

Risk Factors for Suicide and Self-Harm

A risk factor is a factor or characteristic that precedes and is associated with a higher likelihood of an outcome of interest (SAMHSA, 2019). Generally, risk factors are crucial to research and identify as it helps with prediction, assessment, prevention, identification of targets for intervention, and the development of theories/theoretical models (Welton, 2007).

From an extensive search in psycINFO, there appears to be many common risk factors between suicide and self-harm, with varying magnitudes of association with each phenomenon (Butler & Malone, 2013; Forrester & Slade, 2014; Mars et al., 2014; May & Klonsky, 2016; Muehlenkamp, 2014). As such, these risk factors will just be reported once altogether. It is important to note that whether it is suicide or self-harm, there are multiple contributing factors and causal pathways to each complex phenomenon (WHO, 2014). The following is a summary of general risk factors for the general population and they often act in combination with one another to increase one’s vulnerability to suicide and/or self-harm:

Community and Relationship Risk Factors

- History of and/or current trauma and/or abuse (Gvion & Levi-Belz, 2018; Liu, Scopelliti, Pittman, & Zamora, 2018; NICE, 2004; Ng, Yong, Ho, Lim, & Yeo, 2018; WHO, 2014, 2018a)
- Sense of isolation and/or lack of social support (Calati et al., 2019; Gvion & Levi-Belz, 2018; NICE, 2004; WHO, 2014, 2018a)
- Relationship problems, conflict, discord and/or loss (Gvion & Levi-Belz, 2018; NICE, 2004; WHO, 2014, 2018a)

Individual Risk Factors

- Previous suicide attempt and/or self-harm (Chan et al., 2016; Mental Health Foundation, 2016; Ribeiro et al., 2016; WHO, 2014, 2018a)
- Mental disorder (Bentley, Cassiello-Robbins, Vittorio, Sauer-Zavala, & Barlow, 2015; Gvion & Levi-Belz, 2018; Huang, Fox, Ribeiro, & Franklin, 2018; NICE, 2004; WHO, 2014, 2018a; Yates et al., 2019)
- Harmful use of alcohol and/or other substances (Gvion & Levi-Belz, 2018; Moller, Tait, & Byrne, 2013; NICE, 2004; WHO, 2014)
- Job and/or financial loss (Fliege, Lee, Grimm, & Klapp, 2009; Gvion & Levi-Belz, 2018; Mental Health Foundation, 2016; WHO, 2014, 2018a)
- Disadvantaged in socio-economic terms (NICE, 2004; Samaritans, 2017)
- Hopelessness (Fox et al., 2015; Gvion & Levi-Belz, 2018; NICE, 2004; WHO, 2014)
- Negative thought content/Negative information processing biases/Rumination (Cha, Wilson, Tezanos, DiVasto, & Tolchin, 2019; Rogers & Joiner, 2017)
- Impulsivity/Emotional dysregulation (Gvion & Levi-Belz, 2018; Hamza, Willoughby, & Heffer, 2015; Wolff et al., 2019)

- Chronic pain and illness (Chan et al., 2016; NICE, 2004; WHO, 2014, 2018a)
- Family history of suicide, suicide attempt and/or self-harm (Ribeiro et al., 2016; WHO, 2014)
- Exposure (Maple, Cerel, Sanford, Pearce, & Jordan, 2017; Ribeiro et al., 2016)

While risk factors are crucial and helpful to research and identify (WHO, 2012), a recent and thorough meta-analysis of 50 years of research in this field found that single risk factors are weak and limited in their ability to accurately predict future self-harm/suicide (Franklin et al., 2017). As previously discussed, it is the complex interaction and combined effects of multiple risk factors that is important and what future research should focus on (Franklin et al., 2017). Moreover, the equifinality of self-harm/suicide (Franklin et al., 2017; WHO, 2014) means that experts in the field will need to develop separate algorithms for different populations (e.g., prisoners; older adults; veterans; patients with psychosis) instead of using a one-size-fits-all approach (Franklin et al., 2017). Given all this, it is of grave importance for researchers to develop and test theories/theoretical models of suicide/self-harm for different populations.

Theories/Theoretical Models of Suicide and Self-Harm

There are many theories and theoretical models of suicide and self-harm. The following section is a critical synthesis and comparison of the most prominent of these. Basic postulates, evidence for and against, as well as strengths and weaknesses will be delineated for each suicide and self-harm theory/model. This section will also demonstrate the progression of suicide and self-harm theories/models over the years up to the current state. Although Nock's recently published book (Nock, 2014)

contains two chapters on suicide and self-harm theories/models, our review expands on this by being more inclusive (e.g. Nock only examined non-suicidal self-injury whereas this review will consider all terms and definitions of self-harm) and incorporating more recent theories/models. All theories and theoretical models that are reviewed below were identified through an extensive psycINFO search that focused solely on peer-reviewed articles and books. For applicability and generalisability reasons, only the most prominent and general theories/theoretical models were selected. Scholarly works that discussed theories/theoretical models developed for specific disorders (e.g. bipolar) and/or specific ethnic groups (e.g. Native Americans) were excluded from this review. It is important to acknowledge that biological and sociological theories/models will only be briefly discussed as the focus will be on psychological theories/models.

Biological Theories of Suicide

The main premise of biological theories of suicide is that there is an inherited genetic predisposition and physiological risk component to suicide (Selby, Joiner Jr., & Ribeiro, 2014), also known as a diathesis. While some theories focus exclusively on genetics and biological processes, other theories and models include these as one of the many contributing factors to suicide (Karthick & Barwa, 2017). This section will review the former and the latter types of theories and models will be discussed later.

To date, there has been a substantial amount of research on the important role serotonin plays in suicide. Several researchers have found that suicide is due to the dysregulation of the serotonergic system – specifically, reduced serotonergic neurotransmission and polymorphisms in the serotonin transporter gene (5-HTT) (Arango et al., 2001; Asberg, Träskman, & Thorén, 1976; Caspi et al., 2003;

Karthick & Barwa, 2017; Mann, 2003; Oquendo & Mann, 2000; Selby et al., 2014). Another neurotransmitter system that has been found to play a role in suicide is the noradrenergic system – specifically, having high levels of noradrenaline and decreased α -adrenergic bindings in the prefrontal cortex (Mann, 2003). While the dopaminergic system has been investigated, results have been inconclusive (Mann, 2003). In terms of brain structure, research has shown that problems in the ventromedial prefrontal cortex can lead to suicidal behaviour (Mann, 2003; Selby et al., 2014; Van Heeringen, Bijttebier, & Godfrin, 2011).

It is undisputed that “pure” biological theories of suicide are informative. These theories can help us identify possible predispositions to suicide, determine who might be at an increased risk for suicide early on, and potentially provide “objective” measurements of suicide risk (Selby et al., 2014). However, there are several weaknesses to biological theories of suicide. First, it is rather simplistic, and it does not account for psychosocial factors, which play an undeniable role in suicide (Roths & Henriques, 2017). Second, recent neuroplasticity research has demonstrated that the physiology of our brains is not static and that our biological pathways can be altered by psychosocial context, environmental factors and life experiences (Goldsmith, Pellmar, Kleinman, & Bunney, 2002; Hjelmeland, 2011; Pascual-Leone, Amedi, Fregni, & Merabet, 2005; Roths & Henriques, 2017). Lastly, biological theories lack specificity in predicting suicide (Selby et al., 2014). For instance, biological diatheses such as serotonergic system dysfunction are common in depressed individuals (Caspi et al., 2003), yet not all those with depression will attempt or die by suicide (Bostwick & Pankratz, 2000; Selby et al., 2014). Evidently there are quite a few weaknesses to biological theories of suicide – in fact, some researchers have even gone so far to say that “the tendency for

‘biologization of suicidology’ and medicalization of suicidal behaviours may result in an epistemic retrogression movement” (Rothes & Henriques, 2017, p. 157; see also De Leo, 2011; Hjelmeland, 2011). More research is clearly required within “pure” biological theories to achieve the specificity needed in predictions of suicide (Selby et al., 2014); however, perhaps researching theories and models that include genetics and biological processes as one of the many contributing factors is the better way forward.

Sociological Theory of Suicide

The first and most prominent sociological theory is Durkheim’s sociological theory of suicide (1897). Briefly explained, Durkheim viewed suicide as not a personal or individual act, but rather caused by societal forces – specifically, social integration and moral regulation. According to Durkheim, social integration is “the degree to which the individual is integrated into society in terms of bonds with others and society as a whole” (Selby et al., 2014, p. 290) and moral integration is “the degree to which society regulates the beliefs and behaviours of individuals through mechanisms such as societal norms and the legal system” (Selby et al., 2014, p. 290). Based on these two societal forces, Durkheim proposed four types of suicide: egoistic, altruistic, anomic, and fatalistic. The type of suicide most common in public perception is egoistic which is caused by low social integration where the individual feels like he or she has no place in society and experiences a prolonged sense of loneliness.

Durkheim’s theory has several weaknesses. Like the shortcomings of biological theories of suicide, this theory lacks the necessary specificity – in other words, this theory does not explain why some may elect to die by suicide and others may not despite living in the same society and being influenced by the same societal

forces. Evidently there are other individual causal factors at play here that mitigate these societal forces and conditions (Selby et al., 2014). This leads to the second weakness which is the fact that Durkheim dismissed all psychological explanations and causal factors at the individual level, which we know should not be dismissed as they are instrumental in helping us fully understand the phenomenon of suicide.

Despite the above, Durkheim's theory has contributed greatly to our understanding of suicide. Not only was it the first theory to highlight the importance of societal factors in suicide, but it was also the first theory to identify different types and reasonings for suicide (Selby et al., 2014). Many current theories have in fact used Durkheim's theory as a foundation and incorporated his ideas (Selby et al., 2014).

Simple Composite Models of Suicide

Biopsychosocial Model. This model is the simplest and broadest model that current theories have utilised as a foundation. Due to his frustration with the limited, insufficient yet dominant biomedical model at the time, George Engel developed the biopsychosocial model in 1977 (Bolton & Gillett, 2019; McCutcheon, 2006). As the name states, Engel stressed the importance of examining biological, psychological, and social factors when assessing and treating any illness or disease. Although Engel did not develop the model specifically for suicide, it has been applied to suicide (Engel, 1980; Karthick & Barwa, 2017). In 1988, Susan Blumenthal and David Kupfer elaborated on Engel's ideas and specifically developed the "overlap model" for suicide – a biopsychosocial model with five domains of risk factors that are organised in a matrix or multi-axial way. The five domains are: psychiatric disorder; personality traits; psychosocial factors, social supports, life events, and chronic medical illness; family history and genetics; and neurochemical and biochemical

variables (biological factors). Within this model, Blumenthal and Kupfer (1988) proposed that the greater overlap of the risk domains, the higher the risk of suicide.

Although this model contrasted the leading model at the time, it was a significant step in the right direction. The biopsychosocial model not only moved us away from reductionism and the overreliance on biological factors, but also illustrated the importance of taking a more holistic view on the suicide phenomenon (McCutcheon, 2006). However, examining this model now, there are quite a few limitations in that the model is too general, too vague, abstract, and lacks specific guidance (Bolton & Gillett, 2019; McCutcheon, 2006). In fact, there is a debate over whether the biopsychosocial model should even be used as a guide to clinical decision-making (Bolton & Gillett, 2019; Frazier, 2020).

Diathesis-Stress Model. Related to the biopsychosocial model is the diathesis-stress model. This model posits that suicide occurs as a result of an interaction between a diathesis (i.e. predisposing vulnerability factors, trait-dependent characteristics) and stress (i.e. state-dependent characteristics) (Barzilay & Apter, 2014; Rothes & Henriques, 2017). More specifically, the model proposes that a diathesis alone is “a necessary but not sufficient condition” (McCutcheon, 2006, p. 163) and it is the stress factors which trigger the latent diathesis. Again, the diathesis-stress model was not developed specifically for suicide, but several theorists have used it to develop their own diathesis-stress model explicitly for suicide.

There are three simple diathesis-stress models for suicide. Given that the underlying premise of these models are the same, they will only be briefly explained. The first is the social problem-solving vulnerability model (Schotte & Clum, 1982; 1987) which postulates that cognitive rigidity in problem solving is the diathesis and when an individual experiences life stress, the individual won't be able to find

alternative solutions to their problems, will feel hopeless, and this therefore increases their risk for suicide (Barzilay & Apter, 2014). Alternatively, the biological-clinical model of suicide (Brent & Mann, 2006; Mann et al., 2005; Mann, Waternaux, Haas, & Malone, 1999) proposes that inherited impulsive aggression (either through genetics or an abusive family environment) is the diathesis and when under stress it will make one more likely to act on one's suicidal ideation (Barzilay & Apter, 2014; Selby et al., 2014). Lastly, Plutchik and colleagues also utilise this impulsive aggression concept in their two-stage model of suicide and violence (Apter, Plutchik, & van Praag, 1993; Plutchik, 1995; Plutchik, van Praag, & Conte, 1989). However, unlike the biological-clinical model, this model posits that "suicide and violence are expressions of the same underlying aggressive impulse, and it is the presence or absence of other variables that determine what direction the aggression will take" (Barzilay & Apter, 2014, p. 303). For instance, if the stressors are recent psychopathology symptoms then the risk of aggression will most likely be towards the self (suicide), and if the stressors are problems with the law, the risk of aggression will most likely be towards others (violence) (Barzilay & Apter, 2014).

Unfortunately, all these models have mixed and inconsistent support within the field (Barzilay & Apter, 2014). This highlights that while the diathesis-stress model is helpful because it reminds us to consider biological, psychological and social factors when evaluating suicide, it seems to have broad and ever-changing definitions of what a diathesis or stressor is, leaving room for interpretation by many theorists (Barzilay & Apter, 2014; McCutcheon, 2006). Nevertheless, since the main premise of this model is still a useful framework, several theorists have either built upon it or included it in their more comprehensive models – these will be discussed below.

Psychodynamic Theories of Suicide

The three main psychodynamic theorists are: Freud (1917), Menninger (1938), and Hendin (1991). Freud frequently theorised about suicide or what he referred to as self-directed aggression. Through his drive theory (1917), Freud proposed that when one experiences melancholia, there may be ambivalence towards a “lost object” (Goldblatt, 2014). When this happens, the ego splits and part of the ego identifies with the “lost object” (Freud, 1917; Goldblatt, 2014). In this way, hostility towards the “lost object” continues but is now redirected towards oneself (one’s own ego) so when the individual attacks or kills himself, the individual also attacks or kills the ambivalent “lost object” (Barzilay & Apter, 2014; Freud, 1917; Goldblatt, 2014; Karthick & Barwa, 2017).

Menninger (1938) elaborated on Freud’s theories and stated that suicide involves three unconscious wishes: a wish to kill, a wish to be killed, and a wish to die – the suicidal triad (Barzilay & Apter, 2014; Goldblatt, 2014; Karthick & Barwa, 2017; Selby et al., 2014). Essentially Menninger (1938) postulated, like Freud, that the wish to kill is usually towards loved ones and this later gets introjected into one’s ego (Barzilay & Apter, 2014; Goldblatt, 2014; Karthick & Barwa, 2017). However, the individual then feels guilt and experiences self-hate/self-blame for having these murderous urges so the individual wishes to be killed as punishment (Barzilay & Apter, 2014; Goldblatt, 2014; Karthick & Barwa, 2017; Menninger, 1938; Selby et al., 2014). Furthermore, the ego continues to get destroyed by the guilt and self-hate/self-blame to the point that depression and hopelessness arise and the wish to die then evolves (Barzilay & Apter, 2014; Goldblatt, 2014; Karthick & Barwa, 2017; Menninger, 1938).

Hendin (1991) also expanded upon Freud's theories. However, unlike Freud, Hendin (1991) believed that there are both unconscious and conscious aspects to suicide (Selby et al., 2014). Hendin (1991) proposed that to understand suicide, one needs to look at both the affective and cognitive components (Goldblatt, 2014). Affective components refer to those intolerable affective states that make suicide more likely to occur, such as rage, hopelessness, and guilt (Goldblatt, 2014; Hendin, 1991). Whereas cognitive components refer to the meanings one ascribes to the suicide, which can also help clarify the affective states (Goldblatt, 2014; Hendin, 1991). According to Hendin (1991), there are both conscious (cognitive) and unconscious meanings one can give to suicide/death – some common meanings include: death as reunion and death as revenge.

Evidently, all the prominent psychodynamic theories of suicide are similar and seem to build upon Freud's formulations of suicide. Consequently, one could argue that they all have similar strengths and weaknesses. The main strength of psychodynamic theories is that all the intolerable and negative affects involved in suicide have a reasonable amount of current empirical support (Barzilay & Apter, 2014; Goldblatt, 2014; Selby et al., 2014). However, these types of theories are difficult to test empirically (Barzilay & Apter, 2014) as they lack specificity and predictive power (Selby et al., 2014). For example, Menninger's (1938) theory does not explain how one responds to the three unconscious wishes (Selby et al., 2014) and Hendin's (1991) theory does not address who among those that have these affective and cognitive components will attempt or die by suicide – the threshold is unclear (Selby et al., 2014). Nevertheless, these theories are still influential and useful to develop upon (Barzilay & Apter, 2014).

Cognitive Theories/Models of Suicide

The two most prominent cognitive theorists in this area are Beck and Rudd.

The first theory Beck and colleagues developed was the hopelessness theory (1985; 1990) which asserts that hopelessness plays a major role in suicide. More specifically, hopelessness disrupts beliefs about oneself, others, and the future (the cognitive triad), and it is these hopeless cognitions such as “No matter what I do, nothing will change, I will always be a failure” that lead one to suicide (Barzilay & Apter, 2014; Selby et al., 2014). In 2008, Wenzel and Beck then formulated the first comprehensive cognitive model of suicide. This model consists of three main constructs that interact to result in a suicidal act: dispositional vulnerability factors, cognitive processes associated with psychiatric disturbance, and cognitive processes associated with suicidal acts (Wenzel & Beck, 2008). In brief, dispositional vulnerability factors refer to long-standing psychological traits such as impulsivity, aggression, and problem-solving deficits (Barzilay & Apter, 2014; Wenzel & Beck, 2008; Wenzel & Jager-Hyman, 2012). Cognitive processes associated with psychiatric disturbance refer to the maladaptive cognitive processes associated with psychopathology (e.g. maladaptive cognitive contents, information processing biases) (Wenzel & Beck, 2008; Wenzel & Jager-Hyman, 2012). Wenzel and Beck (2008) emphasise that the presence of these processes does not imply an individual will attempt or die by suicide, rather it depends on the frequency and severity of these processes – the more frequent and severe, the higher the suicide risk (Wenzel & Jager-Hyman, 2012). Finally, cognitive processes associated with suicidal acts refer to the maladaptive suicide-relevant cognitive processes that arise during a suicidal crisis (e.g. attentional biases toward suicide-relevant stimuli, attentional fixation on suicide as the only solution) (Wenzel & Beck, 2008; Wenzel & Jager-Hyman, 2012). This model further proposes that whether an individual engages in the suicidal act

after all these constructs interact depends on their own threshold of tolerance (Wenzel & Beck, 2008).

While Beck and his colleagues were refining their theories/models, Rudd was also elaborating on them. Based on some of Beck and his colleagues' ideas, Rudd devised the suicidal mode (Rudd, Joiner, & Rajab, 2000) and later the Fluid Vulnerability Theory (FVT) (Rudd, 2006). Briefly explained, the suicidal mode is built upon Beck's concept of modal processing (Beck, 1996) and is when all four systems (cognitive, affective, behavioural, physiological) become affected by suicide – the cognitive system contains suicidal thoughts and beliefs, the affective system comprises of negative affect, the behavioural system involves suicide-related behaviours like preparing for suicide, and the physiological system encompasses the physiological symptoms that accompany the other systems (Rudd, 2006; Rudd et al., 2000; Selby et al., 2014). In 2006, Rudd developed the FVT as “a way of understanding the onset of episodes of risk, that is, acute activation of the suicidal mode” (p. 358). There are several parts to the FVT but the main ideas from this theory are: suicidal episodes are time-limited; the factors that trigger the episode and contribute to the episode's severity and duration are fluid in nature and duration; baseline risk (determined by a combination of cognitive, biological and behavioural susceptibilities) varies from person to person; the higher the baseline risk is the easier it is to trigger an acute episode; and the severity of the suicidal episode depends on the interaction between baseline risk and aggravating factors (Rudd, 2006).

The FVT is unique as it is one of the first theories to address the process of suicidality and demonstrate that suicide is a dynamic construct. This theory also distinguishes between acute and chronic risk, and consequently assists clinicians with suicide risk assessment and intervention. However, surprisingly, there has not been

any direct examination of the theory (Barzilay & Apter, 2014), unlike Beck's theories/models. In fact, there is a substantial amount of evidence for both of Beck's theories/models described above. Hopelessness has consistently been found to be a risk factor for suicide (Selby et al., 2014) and all three constructs in the comprehensive cognitive model of suicide have a strong empirical basis (Barzilay & Apter, 2014; Wenzel, Brown, & Beck, 2009). Nevertheless, one problem that both the comprehensive cognitive model of suicide and FVT share is that there is still a need to empirically test how specific components interact – how the three constructs interact and how the susceptibilities interact to determine baseline risk (Barzilay & Apter, 2014). Overall, cognitive theories/models have greatly contributed to our understanding of suicide; however, there is still more research to be done.

Advanced Composite Theories/Models of Suicide

Cubic Model of Suicide (Shneidman, 1987). Taking a different approach to the above theorists, Shneidman developed the Cubic Model of Suicide and the concept of psychache (1987; 1993). According to this model, suicide results from the combination of three psychological factors that exist on three different axes (forming a cube) and each can be given a low (1) to high (5) rating. The three factors are unbearable psychological pain (psychache), press (stressors), and perturbation (a combination of being in an emotionally upset state and cognitive constriction). Shneidman stated that an individual will die by suicide when they are at the highest rating level for all three factors – the 5, 5, 5 corner of the cube. Shneidman further stated that not everyone in this cube will attempt or die by suicide, but everyone who does attempt is psychologically in this cube at the time of the act (Jobes & Nelson, 2006). Elaborating further on the psychache concept, Shneidman postulated that psychache develops from thwarted psychological needs – examples being rejection

and loss – and when the pain becomes too much, the individual will turn to suicide to escape or seek relief from it (Barzilay & Apter, 2014; Selby et al., 2014).

Shneidman's model was extremely useful and innovative as it created a 3D way of conceptualising and understanding suicide rather than the one-dimensional list of risk factors researchers and clinicians were using at the time (Jobes & Nelson, 2006). Shneidman's psychache concept was also influential in that it introduced suicide as a problem-solving behaviour and this has consistently shown to be related to suicide (Barzilay & Apter, 2014). However, there is no clear definition of psychache and there have not been any longitudinal studies on psychache to establish it as a causal factor (Barzilay & Apter, 2014). Nevertheless, Shneidman's ideas have not only influenced the terms we use in the field, but also several of the theories/models that will be discussed below (Barzilay & Apter, 2014; Jobes & Nelson, 2006).

Escape Theory of Suicide (Baumeister, 1990). Building on Shneidman's ideas, Baumeister developed his escape theory asserting that the main motivation behind suicide is to escape from "aversive self-awareness" (p. 90). According to Baumeister, there are six consecutive steps that lead one to suicide.

The first is a current situation falling short of one's standards – the larger and more negative the discrepancy between the expected and actuality, the higher the suicidal risk (Barzilay & Apter, 2014; Baumeister, 1990; Selby et al., 2014). The second step is whether one attributes the setback to their own characteristics, making negative self-attributions, which leads to self-blame and feelings of worthlessness (Barzilay & Apter, 2014; Baumeister, 1990; Selby et al., 2014). The theory emphasises that if the individual can make external rather than internal attributions then the motivation to attempt suicide should not arise (Baumeister, 1990; Selby et

al., 2014). The third step states that from the previous two steps the individual will develop high self-awareness (Baumeister, 1990). With this high self-awareness, the individual will compare themselves to an unachieved self or standard and see themselves falling short, which adds to the individual's feelings of inadequacy (Barzilay & Apter, 2014; Baumeister, 1990; Selby et al., 2014). Subsequently, the individual will then develop negative affect (depression and anxiety) in the fourth step (Baumeister, 1990; Selby et al., 2014). As the negative affect becomes increasingly aversive, the individual will attempt to escape it in the fifth step, through cognitive deconstruction (Baumeister, 1990; Selby et al., 2014). According to Baumeister (1990), cognitive deconstruction comprises of constricting one's focus on the present (time perspective), focusing on the immediate rather than broader ideas and emotions (concreteness), and one's actions are targeted toward immediate rather than long-term goals (proximal goals) (Selby et al., 2014). Essentially, cognitive deconstruction is a numb state where the individual avoids meaningful thoughts (Baumeister, 1990; Selby et al., 2014). In the final step of the theory, Baumeister (1990) postulates that cognitive deconstruction will result in four consequences: disinhibition, passivity, absence of emotion, and irrational thought. Disinhibition refers to "a removal of inner restraints" (Baumeister, 1990, p. 102), passivity refers to one's passive attitude toward the current situation or suicide, absence of emotion refers to the lack of or subdued affect from cognitive deconstruction, and irrational thought refers to one being vulnerable to unrealistic thoughts. While the other three consequences are important, Baumeister (1990) states it is the disinhibition that separates an individual from suicidal ideation versus enactment – the disinhibition makes one "willing to engage in actions that violate

normal patterns of behaviour” (p. 102) and engage in impulsive or unrestrained behaviours (Selby et al., 2014).

Baumeister’s (1990) theory appears reasonable and adequately demonstrates the development of suicidality. Additionally, his theory is consistent with Shneidman’s ideas of suicide being an escape from psychological pain, and cognitive constriction playing a key role in suicide (Barzilay & Apter, 2014). However, direct empirical evidence for this theory is scarce (Barzilay & Apter, 2014; Selby et al., 2014), though there are studies that provide indirect evidence (Dean & Range, 1999; Hunter & O’Connor, 2003; O’Connor & O’Connor, 2003; Tassava & Ruderman, 1999). One reason for the lack of direct empirical evidence could be that there are several steps involved which makes it difficult to test the whole theory (Selby et al., 2014). Another drawback is that it doesn’t address other potential factors that could lead one from one step of the theory to another (e.g. poor problem-solving skills) (Barzilay & Apter, 2014). Nevertheless, Baumeister’s escape theory (1990) has provided a base for other theorists to develop upon (Barzilay & Apter, 2014).

Biosocial Theory (Linehan, 1993). Combining ideas from other theorists, Linehan’s biosocial theory (1993) is unique in that although it was originally developed to explain chronic suicidal behaviour in borderline personality disorder (BPD), it has also been successfully used to understand self-harm (Brown, 2006). Consequently, this theory will only be discussed once and in a manner that is applicable to both phenomena.

Linehan (1993) asserted that while there are multiple causal pathways to dysfunctional behaviours like suicide and self-harm, emotion dysregulation is a major causal factor (Brown, 2006; Selby et al., 2014). Specifically, Linehan (1993) proposed that people with BPD or people that self-harm/attempt suicide have

biological vulnerabilities (caused by genetics or brain trauma) that can engender the following emotional difficulties, characterised by emotional dysregulation (Brown, 2006; Jacobson & Batejan, 2014; Selby et al., 2014):

1. Emotions are experienced as highly intense and long-lasting
2. Emotions are easily elicited as there is increased sensitivity
3. A slow return to baseline following emotional arousal

Linehan (1993) further proposed dysregulated behaviours are used as a way of regulating, extinguishing, or distracting oneself from negative affect (Brackman & Andover, 2017; Jacobson & Batejan, 2014; Selby et al., 2014). Fundamentally, self-harm and suicide are viewed as a skill deficit (Brown, 2006; Karthick & Barwa, 2017) and are “the product[s] of a biological vulnerability to emotion dysregulation and harmful childhood environments” (Brown, 2006, p. 92). The harmful childhood environments Linehan (1993) refers to are emotional invalidation – e.g. criticism, trivialising, or punishment of emotional expression (Selby et al., 2014).

Linehan’s theory appears to be a blend of the biopsychosocial model, diathesis-stress model, Shneidman’s psychache theory, and Baumeister’s escape theory. Her theory has received significant indirect validation through empirical support for the therapy she developed, Dialectical Behaviour Therapy (DBT) (Brown, Comtois, & Linehan, 2002; Feigenbaum, 2010; Koons et al., 2001; Linehan, 1993; Linehan et al., 2006; Selby et al., 2014; Vernheul et al., 2003). DBT reduces self-harm/suicidal behaviours by teaching individuals skills to cope with emotional dysregulation. While Linehan’s influence in this field is undeniable, it is worth highlighting that emotional dysregulation is a common symptom in several psychological disorders and many with a psychological disorder have also

experienced emotional invalidation, but not everyone self-harms or attempts suicide. Thus, this theory is missing some important causal factors (Selby et al., 2014).

Cry of Pain (CoP) Model of Suicide (Williams, 1997; Williams & Pollock, 2001). A more current model is the CoP model where Williams and Pollock (2001) propose that suicide should be viewed as a ‘cry of pain’ rather than a ‘cry for help’. This model is built on the diathesis-stress model, biopsychosocial model, Shneidman’s model, Baumeister’s escape theory, and the arrested flight phenomenon (Gilbert, 1989; Gilbert & Allan, 1998). The CoP model is an entrapment-based model (Rasmussen et al., 2010) and posits that suicide is a response to feeling trapped and defeated in a stressful situation where the individual believes there is no escape and no rescue (Williams & Pollock, 2001). Thus, suicide is seen as a means to escape from an unbearable situation (Rasmussen et al., 2010; Slade & Edelman, 2014). According to the model, four components need to be in place in order for an individual to be at risk of suicide: presence of stressors; presence of defeat; perception of entrapment (no escape); and perceived absence of rescue factors (no rescue). When all four components are present, a “biologically mediated helplessness script” (Slade & Edelman, 2014, p. 83) is activated causing the individual to feel as if they have no control, are powerless to escape, and are hopeless, leading to an increased risk of suicide (Barzilay & Apter, 2014; Gunn, 2017; Slade & Edelman, 2014). Additionally, the model suggests that entrapment mediates the defeat-suicide relationship, and rescue factors (e.g. social support, positive future thinking) moderate the entrapment-suicide relationship (Barzilay & Apter, 2014; Rasmussen et al., 2010).

The CoP model has received substantial empirical support in recent years (O’Connor, 2003; Rasmussen et al., 2010; Slade & Edelman, 2014). More

specifically, the defeat and entrapment components of the model have a strong empirical basis (Barzilay & Apter, 2014; Johnson, Gooding, & Tarrier, 2008; Owen, Dempsey, Jones, & Gooding, 2018; Slade & Edelman, 2014; Taylor, Gooding, Wood, & Tarrier, 2011). Another strength of this model is that the emphasis on rescue factors playing a moderating role has led to the development of interventions, specifically working on developing positive future thinking (Johnson et al., 2008). However, there are some important limitations. First, it is unclear whether the concepts of defeat and entrapment are mutually exclusive and independent contributors to suicide (Johnson et al., 2008). Second, the model lacks clarity in separating the constructs of hopelessness, depression, suicidal ideation, and suicide (Johnson et al., 2008). Lastly, although there is a strong relationship between all the components of the model, it is unclear what the actual pathway is (Johnson et al., 2008).

Ideation-to-Action Framework Theories/Models of Suicide

The main commonality between the theories and models discussed thus far is the lack of specificity in the pathways to the development of suicide. Consequently, there has been a recent movement towards developing and researching ideation-to-action framework theories/models. In fact, Klonsky & May (2014) propose that this type of framework should guide all future suicide theory and research. Briefly explained, an ideation-to-action framework theory/model posits that “the (a) development of suicide ideation and (b) progression from ideation to suicide attempt should be viewed as distinct processes with distinct explanations” (Klonsky & May, 2015, p. 115). In other words, the factors for suicidal ideation are different to behavioural enactment (suicide attempt/suicide) (O’Connor & Portzky, 2018). As this is a new movement, the two prominent theories/models within this framework are:

The Interpersonal-Psychological Theory of Suicide and the Integrated Motivational-Volitional Model of Suicidal Behaviour.

Interpersonal-psychological theory of suicide (IPTS; Joiner, 2005). The IPTS is the pioneering ideation-to-action theory and postulates that an individual will only attempt suicide if they have both the desire to die and the capability to act on that desire (Joiner, 2005; Van Orden et al., 2010). Two interpersonal constructs form the desire to die: thwarted belongingness and perceived burdensomeness. Thwarted belongingness refers to a feeling that one is alienated, and perceived burdensomeness refers to a feeling that one is a burden to others and that others would be 'better off' if one was dead (Barzilay & Apter, 2014; Gunn, 2017). This theory asserts that scoring high on these two constructs can lead to suicidal ideation, but they are not enough for lethal behavioural enactment (Barzilay & Apter, 2014; Selby et al., 2014). This is where the third construct of acquired capability for suicide becomes pivotal. According to Joiner (2005), lethal behavioural enactment is not easy, it goes against our intrinsic self-preservation nature, and thus requires an individual to acquire a fearlessness of pain and death through repeatedly experiencing pain via self-harm (i.e. habituation to pain) (Barzilay & Apter, 2014; Selby et al., 2014). Acquired capability for suicide is what transitions an individual from desire to behaviour (Gunn, 2017). Once an individual scores high on all three constructs, the individual is more likely to act on their suicidal thoughts (Gunn, 2017; Joiner, 2005; Van Orden et al., 2010).

The main strength of this theory is that it is the first to draw a distinction between those who have suicidal ideations and those who act on these ideations (Barzilay & Apter, 2014; Selby et al., 2014). Another strength is that it explains why people with a history of self-harm are more likely to attempt suicide (Barzilay &

Apter, 2014). However, one limitation is that this theory doesn't consider other important factors like comorbid psychopathology (Barzilay & Apter, 2014). Additionally, it is unclear how much acquired capability for suicide is required for an individual to attempt suicide (Selby et al., 2014). Despite this, the IPTS has a vast and ever-growing amount of empirical support and is the most supported theory out of all the suicide theories/models discussed in this review (Barzilay & Apter, 2014; Gunn, 2017; Selby et al., 2014). Empirical support for the theory can be found in various groups: undergraduates (Van Orden, Witte, Gordon, Bender, & Joiner, 2008), adolescents (Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006), young adults (Joiner et al., 2009), outpatient (Van Orden et al., 2008), psychiatric inpatient (Brown, Mitchell, Roush, La Rosa, & Cukrowicz, 2019), and female prisoners (Ireland & York, 2012). However, it is important to note that the majority of research has been limited to cross-sectional study designs (Barzilay & Apter, 2014). Moreover, according to a recent systematic review, the relationship between perceived burdensomeness and suicide ideation is the most supported, while other parts of the theory are less supported (Ma, Batterham, Calear, & Han, 2016).

Integrated Motivational-Volitional (IMV) Model of Suicidal Behaviour (O'Connor, 2011a). Combining the key components of the theories and models already reviewed, the IMV model is currently the most comprehensive ideation-to-action framework model in the field. The IMV is a tri-partite model that clearly delineates the pathway from the context in which suicidal behaviours may occur (pre-motivational phase), to the development of suicidal ideation (motivational phase), and finally the translation of suicidal thoughts into suicidal behaviours (volitional phase) (O'Connor, 2011a; Wetherall et al., 2018). Briefly, the pre-motivational phase consists of background factors and triggering life events that set

the biosocial context (O'Connor, 2011a). The motivational phase is focused on how defeat and entrapment can lead one to develop suicidal ideation and intent (O'Connor, 2011a). More specifically, the transition from the defeat stage to the entrapment stage is determined by *threat to self moderators* (TSM) (e.g. memory biases, ruminative processes), and the transition from the entrapment stage to suicidal ideation/intent is determined by *motivational moderators* (MM) (e.g. thwarted belongingness, burdensomeness) (O'Connor, 2011a). The last phase, the volitional phase, is concerned with the translation of thought into action where the transition is determined by *volitional moderators* (VM) (e.g. impulsivity, fearlessness about death). Similar to Linehan's theory, O'Connor also intended the IMV model to be applicable to both suicide and self-harm – hence the usage of the term “suicidal behaviours” (Dhingra, Boduszek, & O'Connor, 2015). However, from an extensive search in psycINFO, it is evident that further research is needed into its applicability, specifically to self-harm.

The IMV model has quickly garnered a growing body of evidence (Dhingra et al., 2015), although most of the supporting research has been conducted by the developer and his colleagues, and it has focused mainly on student and adolescent populations. Thus, the model could be considered limited in its generalisability and there is a need for further research on other populations (Barzilay & Apter, 2014). Despite this, there are several key strengths. First, this model is one of the very few that has successfully incorporated biological, psychological, environmental, and cultural factors, as well as distinguished ideators and enactors in a single theoretical framework. Second, this model views suicide and self-harm as behaviours rather than a by-product of mental disorders (O'Connor, 2011b). Finally, the model “yields

testable hypotheses and points to opportunities for potential intervention and prevention” (O’Connor, 2011b, p. 296).

Latest Theories/Models of Suicide

From the extensive search conducted in psycINFO, there were at least 14 other theories and models of suicide developed in recent years. Upon review of these, we found:

- There wasn’t a general direction of where suicidological research was heading;
- Most either focused on a particular factor or population;
- Very few researched protective factors;
- There was only one conceptual model that included qualitative data (Aherne, Coughlan, & Surgenor, 2018);
- There was only one new ideation-to-action framework model (Three-Step Theory (3ST); Klonsky & May, 2015).

Since these new theories and models have little to no supporting evidence, they will not be discussed further.

Biological Theories of Self-Harm

Similar to above, this section will review theories that focus exclusively on genetics and biological processes, and the theories and models that include these as one of the contributing factors to self-harm will be discussed later.

The only two biological theories that are similar between suicide and self-harm involve the serotonergic and dopaminergic systems. Specifically, researchers have found that people and monkeys who engage in self-harm have reduced serotonergic neurotransmission (Jacobson & Batejan, 2014; New et al., 1997; Simeon et al., 1992; Tiefenbacher, Novak, Lutz, & Meyer, 2005). As for the

dopaminergic system, the results have also been inconsistent – some studies have found evidence that abnormalities in the dopaminergic system can lead one to self-harm (Blasco-Fontecilla et al., 2016; Breese, Criswell, & Muehller, 1990; Jacobson & Batejan, 2014; Lloyd et al., 1981; Selby et al., 2014) and others have not (Groschwitz & Plener, 2012; Stanley et al., 2010).

Related to the dopaminergic system is the endogenous opioid system. Research has widely demonstrated that endogenous opioids (endorphins) play a major role in self-harm – specifically, people who self-harm appear to have altered or lowered endogenous opioid levels, which explains why people self-harm (as endorphins are released when one self-harms) and why some find self-harm to have an “addictive quality” (Blasco-Fontecilla et al., 2016; Groschwitz & Plener, 2012; Jacobson & Batejan, 2014; Nixon, Cloutier, & Aggarwal, 2002; Stanley et al., 2010). As for brain activity, recent research has found that people who self-harm have amygdala hyperactivity (Donegan et al., 2003; Herpertz et al., 2001; Jacobson & Batejan, 2014).

It is important to state that from the above studies mentioned, most researchers have preferred to utilise the term and definition of “nonsuicidal self-injury”.

Strengths and weaknesses of biological theories of suicide have been discussed above and they can also be applied to biological theories of self-harm. However, one weakness to emphasise is that biological theories lack specificity in predicting self-harm and have difficulty differentiating who will engage in self-harm versus attempt suicide (Selby et al., 2014). While more research linking specific biological dysfunctions to specific behaviours is needed (Selby et al., 2014), again,

perhaps the better way forward is to research theories and models that include genetics and biological processes as one of the many contributing factors.

Sociological Theories/Models of Self-Harm

Unlike suicide, there doesn't appear to be a distinct sociological theory or model of self-harm. Instead, sociologists have utilised and applied existing sociological theoretical frameworks, such as the deviance approach, to understand self-harm (Brossard, 2014; Chandler, 2012; Hodgson, 2004; Taylor & Ibañez, 2015; Thio, Taylor, & Schwartz, 2013). However, psychologists cannot deny the important role social context plays in self-harm (i.e. the social functions of self-harm) and thus have incorporated it as one of the contributing factors in other theories/models discussed below.

Simple Composite Models of Self-harm

Given the broadness of the biopsychosocial and diathesis-stress models, researchers have also applied these models to understand, assess, and treat self-harm (Askew & Byrne, 2009; Mann, 2003; O'Connor, Rasmussen, & Hawton, 2010; Royal College of Psychiatrists, 2010; Tracy et al., 2015). Consequently, these models won't be reiterated in this section. Instead, the only other simple composite model that is different to the suicide models is Nock and Prinstein's (2004) four-function model (FFM) of non-suicidal self-injury.

The FFM (Nock & Prinstein, 2004) is a dual interpersonal-intrapersonal conceptualisation of self-harm that integrates the social functions (i.e. social reinforcement; interpersonal) and affect-regulating functions (i.e. automatic reinforcement; intrapersonal) of self-harm within a matrix of positive and negative reinforcement contingencies (Brackman & Andover, 2017; Selby et al., 2014). The four possible functions of self-harm that Nock and Prinstein (2004) propose are:

social positive reinforcement, social negative reinforcement, automatic positive reinforcement, and automatic negative reinforcement. Utilising behavioural principles, an example of social positive reinforcement is an individual self-harming to gain attention or care from others, whereas social negative reinforcement is an individual self-harming to cease or alleviate an unwanted social experience. Conversely, an example of automatic positive reinforcement is an individual self-harming to feel an emotion, whereas automatic negative reinforcement is an individual self-harming to reduce negative emotions. It is important to note that individuals can endorse multiple functions when engaging in self-harm (Brackman & Andover, 2017; Klonsky & Muehlenkamp, 2007; Muehlenkamp, Brausch, Quigley, & Whitlock, 2013; Nock & Prinstein, 2004; Turner, Chapman, & Layden, 2012).

Currently, most theories and models of self-harm emphasise a functional approach to understanding the phenomenon of self-harm (Brackman & Andover, 2017; Turner et al., 2012). This approach, embodied by the FFM, has led to the model receiving the most amount of empirical support due to its comprehensiveness in incorporating behavioural reinforcement contingencies as well as the interpersonal and intrapersonal consequences that maintain the self-harming behaviour (Bentley, Nock, & Barlow, 2014; Brackman & Andover, 2017; Brown et al., 2002; Klonsky & Glenn, 2008; Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007; Nock & Prinstein, 2004, 2005; Selby et al., 2014). Nevertheless, it appears that there is more support for and endorsement of automatic (affect-regulating) functions than social functions (Brackman & Andover, 2017; Brown et al., 2002; Chapman, Gratz, & Brown, 2006; Franzke, Wabnitz, & Catani, 2015; Heath, Ross, Toste, Charlebois, & Nedecheva, 2009; Klonsky, 2007; Klonsky & Muehlenkamp, 2007; Selby et al., 2014; Turner et al., 2012). In fact, several other theories and models that will be discussed also

include affect-regulating functions. However, more research is still needed as the empirical support of the different components of the model has mostly been correlational (Brackman & Andover, 2017), and there are still several unanswered questions about the model, for instance what specific mechanisms are involved in the automatic negative reinforcement function (see Bentley et al. (2014) for a full list).

Psychodynamic Theories of Self-Harm

The three main psychodynamic theories of self-harm are: Antisucide Theory, Sexual Theory, and Self-Aggression Theory. Importantly, these theories prefer to use the term “self-mutilation” rather than “self-harm” (Selby et al., 2014).

The Antisucide Theory views self-harm as a compromise to suicide (Firestone & Seiden, 1990; Himber, 1994; Jacobson & Batejan, 2014; Menninger, 1938; Selby et al., 2014). Essentially through engaging in self-harm, the individual can “satisfy self-destructive impulses and desires” (Selby et al., 2014, p. 299) without dying by suicide (Firestone & Seiden, 1990; Himber, 1994; Jacobson & Batejan, 2014; Selby et al., 2014). This theory overlaps with the psychodynamic theories of suicide as it also emphasises self-destructive impulses. However, there is little empirical evidence to support this theory (Jacobson & Batejan, 2014; Selby et al., 2014).

The other two theories involve punishment of oneself but for different reasons. The Sexual Theory suggests that individuals self-harm as punishment for having sexual impulses (Daldin, 1988; Jacobson & Batejan, 2014; Selby et al., 2014; Suyemoto, 1998), whereas the Self-Aggression Theory asserts that individuals self-harm to “carry out aggressive impulses towards oneself” (Jacobson & Batejan, 2014, p. 309; see also Bennum, 1984; Erlich, 1978) and to “atone for unacceptable desires, behaviours, feelings, and thoughts” (Jacobson & Batejan, 2014, p. 309; see also

Lane, 2002). There is little to no supporting evidence for the Sexual Theory, but there is some support for the Self-Aggression Theory (Jacobson & Batejan, 2014). For instance, two studies in the last decade found that individuals self-harmed to punish themselves (Nock & Prinstein, 2004; Ross & Heath, 2003) and another study found that over 50% self-harmed due to negative feelings they had about themselves (Laye-Gindhu & Schonert-Reichl, 2005).

Overall strengths and weaknesses of psychodynamic theories have already been discussed and are applicable to the psychodynamic theories of self-harm. However, one idiosyncrasy to note is that although suicide and self-harm psychodynamic theories have similar themes (e.g. self-destruction, punishment), there appears to be less empirical support for self-harm theories.

Cognitive Theories/Models of Self-Harm

Despite some correlational research on individuals engaging in self-harm to suppress unwanted thoughts (Chapman et al., 2006; Favazza & Conterio, 1989; Jacobson & Batejan, 2014; Najmi, Wegner, & Nock, 2007), unlike suicide, there is no “pure” cognitive theory or model of self-harm. However, given that an individual’s thoughts and beliefs are important to understanding any phenomenon, as well as the fact that thoughts and emotions are inextricably linked (Jacobson & Batejan, 2014), psychologists have instead included cognitive factors in other theories/models.

Interpersonal Theories of Self-Harm

As previously discussed, most theories/models of self-harm take a functional approach to understanding self-harm (Brackman & Andover, 2017; Turner et al., 2012). In this section, the theories focusing on interpersonal or social functions will be reviewed, and in the next section the theories/models focusing on affect-

regulating functions. The two main interpersonal theories of self-harm are: communications theory and social learning theory.

The communications theory proposes that individuals engage in self-harm as a means to communicate with others (Jacobson & Batejan, 2014). Favazza (1989) stated that instead of viewing self-harm as being a *manipulative behaviour*, he proposed viewing self-harm as a genuine *cry for help* – the individual experiences negative emotions and self-harms, which leads to attention and soothing from others and in a cyclical manner causes the individual to continue to self-harm to enact others to help soothe themselves again (Jacobson & Batejan, 2014). Himer (1994) also found that the reasons why individuals self-harmed were a *cry for help* or communicating the amount of pain one was in (Jacobson & Batejan, 2014). Thus, over the years, many researchers have continued to investigate the communications theory (Klonsky, 2007; Klonsky & Olino, 2008; Lloyd-Richardson et al., 2007; Nixon et al., 2002; Nock & Prinstein, 2005). However, the only concrete model that was developed that includes this theory is the FFM (Nock & Prinstein, 2004) – specifically the social positive reinforcement and social negative reinforcement aspects – which has already been discussed.

The social learning theory is another interpersonal approach to understanding self-harm (Jacobson & Batejan, 2014). This theory suggests that through observing others self-harm to obtain attention or care, individuals will model their behaviour to obtain the same benefits (Suyemoto, 1998). There are several studies that support this theory and provide evidence for so-called copy-cat cases (Favazza, 1989; Nixon et al., 2002; Nock & Prinstein, 2005). However, it is important to highlight that from these studies, it seems that the adolescent population is most affected by this theory

(by peer influence) (Prinstein, Guerry, Browne, & Rancourt, 2009; Walsh & Rosen, 1985).

Self-harm has had a long history of being viewed as having interpersonal functions (Selby et al., 2014). However, while there is some research on the interpersonal functions of self-harm, there is more empirical evidence for affect-regulating functions (Nock & Prinstein, 2004). A reason for this could be underreporting, where shame could limit a person's ability to explore or admit the interpersonal reasons. Consequently, this is an important area that needs to continue to be researched.

Affect-Regulating Theories/Models of Self-Harm

Unsurprisingly there are many affect-regulating theories/models of self-harm. Linehan's biosocial theory (1993), discussed above, introduced self-harm as an affect-regulation strategy. Similarly, Nock and Prinstein's FFM (2004) also highlighted the automatic negative reinforcement and automatic positive reinforcement functions of self-harm. In addition to these two, four alternative theories/models have been proposed: the feeling generation theory, the antidissociation theory, the Experiential Avoidance Model, and the Emotional Cascade Model.

The feeling generation theory essentially focuses on one aspect of Nock and Prinstein's FFM (2004), whereby individuals self-harm to generate feelings (Selby et al., 2014). There is mixed evidence for this theory; some studies support it (Brown et al., 2002; Laye-Gindhu & Schonert-Reichl, 2005; Nock & Prinstein, 2004; Osuch, Noll, & Putnam, 1999) and others find very little support for it (Nixon et al., 2002; Shearer, 1994). A potential reason for this is that it is a very narrow theory and as we know there are many other factors that can lead one to self-harm.

Alternatively, the antidissociation theory proposes that individuals self-harm to inhibit dissociation (Selby et al., 2014). According to several theorists, dissociation can be caused by extreme emotional states and a shocking stimulus (e.g. physical pain, sight of blood) can stop one from dissociating (Gunderson, 1984; Himber, 1994; Simpson, 1975). However, like the feeling generation theory, there is mixed evidence for this theory with some supporting it (Armey & Crowther, 2008; Brown et al., 2002; Favazza & Conterio, 1989), and others failing to support it (Laye-Gindhu & Schonert-Reichl, 2005; Nock & Prinstein, 2004). The main reason for this is because dissociation can be considered as an extreme form of negative emotion so it is unclear whether the self-harming individual is experiencing extreme negative emotions or actually dissociation (Selby et al., 2014).

Another model is the Experiential Avoidance Model (EAM; Chapman et al., 2006). Drawing upon Shneidman's concept of psychache (1987; 1993), Baumeister's escape theory (1990), Linehan's biosocial theory (1993), and part of the FFM (Nock & Prinstein, 2004), the EAM (2006) posits that individuals self-harm (the authors use the term deliberate self-harm) to reduce or escape from intolerable internal states (thoughts, emotions, physiological sensations) (i.e. experiential avoidance) (Jacobson & Batejan, 2014; Selby et al., 2014). Chapman et al. (2006) propose the following sequence of events: An emotional stimulus will cause an individual to experience strong negative emotions, which will lead the individual to utilise self-harm to escape the emotion, providing relief from the negative emotion, ultimately negatively reinforcing self-harm (Jacobson & Batejan, 2014; Selby et al., 2014). Chapman et al. (2006) further propose that with repetition, self-harm becomes an automatic, conditioned first response to any negative emotional experience (Jacobson & Batejan, 2014; Selby et al., 2014). There is substantial empirical support for the

EAM, especially through the research on the link between thought suppression and self-harm (Brackman & Andover, 2017; Cheavens et al., 2005; Howe-Martin, Murrell, & Guarnaccia, 2012; Jacobson & Batejan, 2014; Najmi et al., 2007; Rosenthal, Cheavens, Lejuez, & Lynch, 2005; Selby et al., 2014). However, like some other theories/models, the EAM provides a simplistic explanation for self-harm and it is unclear why an individual would specifically choose self-harm to regulate negative emotions over other, less painful, behaviours (Bresin & Gordon, 2013; Jacobson & Batejan, 2014).

To address some of the weaknesses of the EAM, Selby, Anestis, and Joiner developed the Emotional Cascade Model in 2008. The Emotional Cascade Model consists of the following sequence of events: An emotional stimulus will cause an individual to experience an emotional cascade where the individual will ruminate on negative affect resulting in an intense, amplified state of negative affect (Moberly & Watkins, 2008; Selby et al., 2014). The individual will then choose self-harm to distract oneself from rumination and negative affect, as well as obtain emotional relief (Selby et al., 2014). Selby et al. (2008) proposed that individuals will choose self-harm (over other less painful behaviours) to avoid negative affect because “among emotionally dysregulated individuals, less intense methods of distraction (e.g., a cold shower) are unsuccessful in regulating intense emotions” (Bresin & Gordon, 2013, p. 62). Thus, Selby et al. (2008) asserted that only strong physical sensations (e.g. pain, sight of blood associated with self-harm) will be able to successfully distract an individual (Bresin & Gordon, 2013; Selby et al., 2014). This is similar to the antidissociation model. Although this model is new, there is some supporting evidence for it as several researchers have found a link between rumination and self-harm (Arney & Crowther, 2008; Hilt, Cha, & Nolen-Hoeksema,

2008; Selby, Connell, & Joiner, 2010; Selby et al., 2014). However, research linking emotional cascades to self-harm in particular has only been produced by the developers of the model (Selby, Anestis, Bender, & Joiner, 2009; Selby & Joiner, 2013). While this model attempts to explain the choice of self-harm, it doesn't explain why an individual chooses self-harm over strong alternatives like alcohol (Selby et al., 2014). A recent study proposed that perhaps combining this model and the IPTS discussed above may be the answer as the researchers found that individuals are more likely to self-harm if they have a high tendency to ruminate and have high acquired capability (i.e. less afraid to use pain) (Selby et al., 2010; Selby et al., 2014).

As previously stated, out of all the self-harm theories/models, the affect-regulating theories/models have received the most amount of empirical support (Jacobson & Batejan, 2014). This makes sense as emotions play an undeniable role in the phenomenon of self-harm. However, the methodologies used have largely been self-report and retrospective so more studies using other methodologies (e.g. prospective) are required (Brackman & Andover, 2017; Jacobson & Batejan, 2014).

Integrated Theoretical Model of Self-Injury (Nock, 2009)

Unlike suicide, there is currently no ideation-to-action framework model of self-harm. Each theory/model reviewed above appears to only account for one piece of the complex puzzle of self-harm (Jacobson & Batejan, 2014). None are able to fully explain the development and pathway of self-harm, answer when and why individuals choose self-harm, nor are they able to account for engagement in repeated self-harm (Brackman & Andover, 2017; Jacobson & Batejan, 2014). As a response to this critical gap, Nock developed the Integrated Theoretical Model of

Self-Injury in 2009. It is important to note that Nock's definition of self-harm is the absence of suicidal intent.

Building on several of the theories/models above, the Integrated Theoretical Model of Self-Injury is the first fully integrative model which delineates the development and maintenance of self-harm. Starting with distal risk factors (i.e., genetic predisposition for high emotional/cognitive reactivity, childhood abuse, familial hostility), Nock (2009) posited that these factors can lead one to develop intrapersonal and interpersonal vulnerabilities (proximal risk factors). Intrapersonal vulnerabilities include high aversive emotions, high aversive cognitions, and poor distress tolerance. Interpersonal vulnerabilities include poor social problem-solving and communication skills. Nock (2009) then suggested that these vulnerabilities can cause an individual to struggle to effectively respond to stressful life events, so in response to stress, the individual may use self-harm to provide social and affect regulation. Additionally, Nock (2009) made two propositions along with the model:

1. Self-harm is maintained because of its efficacy and immediacy in regulating one's affective experience and/or influencing one's social environment.
2. Self-harm is chosen over other behaviours because of NSSI-specific vulnerability factors (i.e. social learning hypothesis, self-punishment hypothesis, opiate hypothesis).

Due to how new this model is, it has limited empirical support (Ren et al., 2018; You, Lin, & Leung, 2015; Zerkowicz, Porter, Heiman, & Cole, 2017).

However, many experts in the field have voiced that they found this model to be an impressive and useful framework (Brackman & Andover, 2017; Jacobson & Batejan, 2014) – though Jacobson and Batejan (2014) have suggested some modifications.

Overall, Nock's model is currently the most complete, comprehensive model in the field and future research should be focused on testing the pathways and interactions in this model (Brackman & Andover, 2017).

Latest Theories/Models of Self-Harm

Since Nock's model, there has only been one new integrated model of self-harm developed in the last decade (Lewis, Rosenrot, & Santor, 2011). Unlike Nock's though, this integrated model incorporated a broader conceptualisation of self-harm as it included all self-harm irrespective of intent. Besides this new integrated model, there was only one other conceptual model of self-harm found through the extensive search conducted for this review (Muehlenkamp, Claes, Smits, Peat, & Vandereycken, 2011). This conceptual model was specifically for non-suicidal self-injury in eating disordered patients. Again, since these two models currently have no supporting evidence, they will not be discussed further. It is important to highlight that there are fewer new theories/models of self-harm compared to suicide, which could be because self-harm researchers are more inclined to test existing theories/models rather than develop new ones.

Overall Comparison: Suicide vs. Self-Harm Theories/Models

While comparisons were made throughout this review, there are some more to highlight. Although experts in the field have deemed suicide and self-harm as distinct phenomena, this review found that there are actually some theories and models that overlap. Specifically, under the biological perspective, both the serotonergic and dopaminergic systems are postulated to be involved. Suicide and self-harm also share the biopsychosocial and diathesis-stress models, but this is perhaps due to the broadness of these models. From a psychodynamic perspective, both phenomena incorporate the ideas of self-aggression and punishment. Lastly, the

only two theories/models that have been successfully applied to both suicide and self-harm is Linehan's Biosocial Theory (1993) and the IMV Model (O'Connor, 2011a). A potential reason for the overlap could be that similar affects and risk factors are related to both phenomena. Another similarity between the theories/models of the two phenomena is that they rarely incorporate cultural or protective factors, despite their indisputable roles (Rothes & Henriques, 2017). Despite the high prevalence and vast amount of data we have on both phenomena (Cipriano et al., 2017; McManus, Bebbington, Jenkins, & Brugha, 2016; Naghavi, 2019; Office for National Statistics, 2018a, 2018b; Simms & Scowcroft, 2018; Swannell, Martin, Page, Hasking, & St John, 2014; WHO, 2018b, 2018c), a final similarity the theories/models share is that there is no universally accepted explanatory theory/model of either and there is still much more research to be done – specifically, on the development of more complete, integrative theories/models (Rothes & Henriques, 2017). In comparison, the IPTS has the most empirical support for suicide, and the affect-regulating theories/models have the most for self-harm.

However, suicide and self-harm theories/models for the most part are dissimilar. For instance, examining the social aspects, self-harm theories/models tend to view self-harm as a method of soliciting a desired social outcome, whereas suicide theories/models tend to view suicide as a consequence of intolerable social conditions (Durkheim, 1897) or loss of connection (Joiner, 2005) (Selby et al., 2014). Another dissimilarity is the concept of ideation, which is distinguished in the phenomenon of suicide but not self-harm – there is no theory/model that highlights self-harm ideation. A final observation is that from the extensive search conducted for this review, there are more suicide theories/models than self-harm. A potential reason is that suicide is regarded as more severe than self-harm and therefore has

more resources dedicated to it. However, despite the vast amount of research on suicide, it lacks a general direction, whereas the research on self-harm, though less extensive, is concentrated on a few concepts. Regardless, both phenomena are equally important to research.

Conclusion

While there is an ongoing debate over the terminologies and definitions used, it is indisputable that suicide and self-harm are major global public health problems that affect people across the lifespan and in every population (Franklin et al., 2017). Despite advances in psychological science, these phenomena continue to have devastating impacts (Franklin et al., 2015) and have extremely high prevalence rates. Consequently, there has been a vast amount of research dedicated to studying the risk factors for these phenomena. Unfortunately, although risk factors are important to research, the meta-analysis conducted by Franklin et al. (2017) found that the predictive ability of single risk factors are limited and weak. Thus, it has been highlighted by us and other researchers that there is a need to dedicate future research efforts to examining the complex interaction and combined effects of multiple risk factors via developing and testing theories/models of suicide and self-harm in different populations.

Given that this was a conceptual review and not a systematic review, the collection of theories/models discussed in this paper is not exhaustive. However, this review has demonstrated that there are many theories/models of suicide and self-harm. Although diversity is usually positive and healthy for a young field, it is not a positive sign for the suicide/self-harm research field which has been around for at least 100 years (Franklin et al., 2017). Consequently, even after all this research, given the current theoretical diversity, one could argue that the field is still in a

preparadigmatic phase (Franklin et al., 2017) and there is still much more to be done in order to agree on a dominant paradigm. As Franklin et al. (2017) have stated, “for the field to progress to a paradigmatic phase, empirical data must be employed to winnow the accurate theories or accurate theory elements from the less accurate theories” (p. 188). One way to assist this winnowing process, and to determine which theory/model is the most accurate, is to test existing comprehensive, integrative suicide/self-harm theoretical models, such as the IMV model, on different populations. The reasons why the IMV model is specifically chosen are because it is currently the most comprehensive, holistic, and integrative model in the field, and its ideation-to-action framework allows researchers and clinicians to achieve the specificity needed in the predictions and developmental pathways of suicide/self-harm ideation and enactment. One important aspect to highlight is that most theories/models, including the IMV, do not incorporate protective factors (Franklin et al., 2017), thus this is another critical research gap which requires closing in order for the field to progress to a paradigmatic phase.

The short answer to what methodology should be employed to empirically test existing theoretical models on different populations is all. However, studies so far have mainly been correlational, retrospective, self-report, quantitative, and cross-sectional in design. While there is a clear need for other types of methodologies, especially longitudinal studies, the above methodologies are a good first step as they provide an easy, fast, simple way of obtaining a large amount of quantifiable data and investigating the relationship between model factors and the phenomenon.

Overall, this conceptual review has illustrated that there are several critical research gaps that need to be filled. The following empirical paper attempts to address some of these gaps by testing the applicability of the IMV model on a sample

of prisoners, and adding an additional, new protective factor to the model.

Specifically, the study will employ the common methodologies above to examine how controls, ideators of self-harm, and enactors of self-harm differ from each other on the IMV model factors as well as the new protective factor. Since current research has employed the common methodologies above, this study will follow suit to maintain precedent and because the prison population is a difficult population to test – not only is it difficult to observe and follow up with prisoners, but also many prisoners are reluctant to disclose current self-harm/suicide thoughts and behaviours for fear of unwanted consequences. As previously stated, this is the first step in a long queue of future research, but we hope this research will increase our understanding of self-harm in prisoners so that appropriate prevention and treatment interventions can be developed.

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Part Two: Empirical Paper

Differences Between Controls, Ideators, and Enactors of Self-Harm in a Sample of Transferred Prisoners Through the Lens of the Integrated Motivational- Volitional (IMV) Model

Abstract

Aims

This empirical study generally aimed to test the applicability of a comprehensive theoretical model of self-harm (Integrated Motivational-Volitional (IMV) Model of Suicidal Behaviour), originally developed for use within the general population, to a sample of male transferred prisoners. Specifically, this study aimed to examine how prisoners with no historical thoughts or historical acts of self-harm (controls), prisoners with historical thoughts but no historical acts of self-harm (ideators), and prisoners with both historical thoughts and historical acts of self-harm (enactors) differed on the IMV model's factors (perceived entrapment, brooding rumination, social support, impulsivity, fearlessness about death, discomfort intolerance). This study also explored how these groups differed on depression, hopelessness, and a new protective factor of resilience.

Method

This was a cross-sectional study that was conducted at a male Category C prison. Through opportunistic sampling and oversampling methodologies, 106 adult male prisoners participated in this study. Participants completed a battery of self-report measures that mapped onto the above factors as well as clinical and prison-specific factors (e.g. most recent offence, how many times the individual has been to prison). One-way Analysis of Variances (ANOVAs) and Welch's tests were conducted to compare the three groups on the above factors (perceived entrapment, brooding rumination, social support, impulsivity, fearlessness about death, discomfort intolerance, depression, hopelessness, and resilience).

Results

The IMV Model was partially supported in the data analyses. Given that the ideator group was rather small compared to the other two groups, the ideator group results were interpreted with caution. However, there was robust evidence to support a significant difference between controls and enactors on the above factors.

Conclusions

Despite only partial support for the IMV Model, this study furthered our understanding of self-harm in male prisoners and supports the use of an ideation-to-action framework model to assess this phenomenon. Clinical implications and future research directions are discussed.

Introduction

Self-harm is a significant global public health problem, particularly in prisons. International statistics show that the rate of self-harm in prisoners (100 per 100,000) is significantly higher than in the general population (21 per 100,000) (Fazel, Grann, Kling, & Hawton, 2011; Hawton, Linsell, Adeniji, Sariaslan, & Fazel, 2014; Slade, Edelmann, Worrall, & Bray, 2014). According to the Ministry of Justice (2018), the rate of self-harm in prisons, specifically in the U.K., has continually risen and reached a record high of 151 per 1,000 prisoners in 2018. This overall increase in self-harm in prisons is attributable to a significant increase among male prisoners in particular, where the rate of self-harming individuals per 1,000 prisoners in 2018 has almost tripled since 2004 (from 57 to 143) (Ministry of Justice, 2018). Additionally, recent studies have shown that being transferred between prison estates can significantly increase the risk of self-harm (Martin, Dorken, Colman, McKenzie, & Simpson, 2014; Prisons and probation ombudsman, 2014a). However, despite all this, there is a paucity of research on self-harm in male transferred prisoners. Given that self-harm is a known risk factor for suicide in prison (Hawton et al., 2014), it is crucial that we dedicate research efforts towards understanding self-harm in this high-risk group.

Terminology and Definition of Self-Harm

There is currently worldwide debate regarding the terminology and definition of self-harm (Cipriano, Cella, & Cotrufo, 2017; Silverman & De Leo, 2016). From service-users to professionals, it seems as though there is still no single universal consensus. However, this issue does not need to be an impediment to research on self-harm. Instead, researchers should from the outset, explicitly state the terminology of self-harm and define how self-harm will be conceptualised in their

research. In line with this, to be standardised and inclusive, this study adopted the National Institute for Clinical Excellence (NICE)'s widely accepted terminology of "self-harm" and definition that "self-harm is self-poisoning or self-injury, irrespective of the apparent purpose of the act" (2004, p. 16).

Risk Factors for Self-Harm in Prisoners

While there has been previous research examining the risk factors for self-harm in prisoners, studies have often focused on static factors such as age (young age, less than 30 years) and ethnicity (white) (Dixon-Gordon, Harrison, & Roesch, 2012; Hawton et al., 2014). Although it is helpful to know these static factors, since they are unchangeable, they cannot be used to inform the development of preventive interventions and/or treatments for self-harm. Consequently, in the last decade, there has been a push towards researching dynamic factors that are amenable to interventions (Hawton et al., 2014; Slade & Edelman, 2014). However, a recent and very thorough meta-analysis of 50 years of research found that single risk factors (static or dynamic) are weak and limited in their ability to accurately predict future self-harm (Franklin et al., 2017). In fact, it is the complex combination and interaction of multiple risk factors that is important (Fazel, Ramesh, & Hawton, 2017; Franklin et al., 2017; Slade et al., 2014). Given the above, there is now a critical need to develop and test comprehensive as well as integrative theoretical models of self-harm on the prison population, a population on which research to date has mostly been atheoretical (Slade & Edelman, 2014; Slade et al., 2014). It is only through the use of a comprehensive and integrative explanatory theoretical framework that we can fully understand self-harm in prisoners (Slade & Edelman, 2014; Slade et al., 2014).

Theoretical Models of Self-Harm: General and Prison Population

From an extensive search of the literature, there is only one comprehensive as well as integrative ideation-to-action framework model that has been successfully applied to self-harm (Dhingra, Boduszek, & O'Connor, 2015; O'Connor, Rasmussen, & Hawton, 2012), and only one theoretical model that has been developed specifically for self-harm in prisoners (Dear, 2008). Currently, most of the research efforts are dedicated to developing and testing comprehensive as well as integrative theoretical models of suicide in the general population. In fact, Dear's model (2008) has not received any empirical support since its development. Thus, it appears that we are still in the beginning stages of not only self-harm research, but also self-harm research in prisons. From the limited studies on self-harm in prisoners, it seems that the general direction of research is to test and apply general population theories/models to the prison population rather than develop new theories/models specifically for prisoners. This is sensible because, as O'Connor (2011a) has alluded to, we should build upon the growing body of international research on suicide/self-harm and integrate the disparate empirical and theoretical evidence, rather than constantly starting at the beginning, "reinvent[ing] the wheel or throw[ing] the proverbial baby out with the bathwater" (p. 295). Consequently, to advance the research on self-harm in prisoners, we must start by testing and applying existing comprehensive as well as integrative theoretical models of self-harm that is originally developed for the general population on the prison population.

Integrated Motivational-Volitional (IMV) Model of Suicidal Behaviour (O'Connor, 2011b)

As previously mentioned, the only comprehensive and integrative ideation-to-action framework model that has been successfully applied to self-harm is the IMV Model of Suicidal Behaviour (O'Connor, 2011b; see also Dhingra et al., 2015;

O'Connor et al., 2012). The reason why an ideation-to-action framework model is preferred over just an integrated theoretical model like Nock's (2009) is because it clearly delineates the pathway to ideation formation and then the progression from ideation to behavioural enactment in a single theoretical framework (Klonsky & May, 2014). In particular, Nock's (2009) model completely forgoes the 'ideation formation' aspect and solely focuses on factors that lead one to enact self-harm. Essentially, an ideation-to-action framework model allows researchers and clinicians to achieve the specificity needed in predicting who will have self-harm thoughts and who will engage in self-harm.

The IMV is a tri-partite model that recognises the complex interplay of biopsychosocial factors associated with self-harm ideation and behaviour, and elegantly provides an explanation for how self-harm ideation can develop as well as how ideation can translate into self-harm behaviour (O'Connor, 2011b). This model integrates major factors from other theories/models such as the Cry of Pain (CoP) model of suicide (Williams, 1997; Williams & Pollock, 2001), the diathesis-stress hypothesis (Schotte & Clum, 1987), and the theory of planned behaviour (Ajzen, 1991). Briefly explained, the first part of this model is the pre-motivational phase which is comprised of background factors and triggering life events that set the biosocial context in which self-harm may occur (O'Connor, 2011b). The second part of this model is the motivational phase or the ideation/intention formation phase which outlines how ideation and intent can develop (O'Connor, 2011b). This part mainly focuses on the constructs of defeat and entrapment and suggests that the transition from the defeat stage to the entrapment stage is determined by *threat to self moderators* (TSM; e.g. ruminative processes), and the transition from the entrapment stage to ideation/intent is determined by motivational moderators (MM) (e.g.

burdensomeness) (O'Connor, 2011b). The third and last part of this model is the volitional phase which is concerned with the translation of ideation into behavioural enactment and highlights that this transition is specifically determined by volitional moderators (VM) (e.g. impulsivity) (O'Connor, 2011b).

Although rather new, the IMV model has quickly garnered a growing body of evidence (Dhingra et al., 2015). This is not surprising as this model is the most comprehensive ideation-to-action framework model to date, it “yields testable hypotheses, and [it] points to opportunities for potential intervention and prevention” (O'Connor, 2011a, p. 296). However, empirical support for utilising this model to understand self-harm is still limited, and the research samples have mostly been students and adolescents (non-clinical populations). The developer of the model has also acknowledged that the list of motivational and volitional factors in his model is not exhaustive, and that the model lacks protective factors that could potentially impede the various transitions (Dhingra et al., 2015; O'Connor, 2011a; O'Connor et al., 2012). Consequently, there is a need to conduct further research on the IMV model, especially on self-harm and with other populations in different settings, in order to generate a more definitive list of factors and improve the model (Barzilay & Apter, 2014).

Research has shown that resilience is a protective factor against the development of psychiatric symptoms when faced with stressful life events (Campbell-Sills, Cohan, & Stein, 2006; Hjemdal, Friborg, Stiles, Rosenvinge, & Martinussen, 2006). Consequently, it is sensible to investigate the relationship between resilience and self-harm/suicide. There are currently limited studies looking at resilience and self-harm/suicide. However, among the existing studies, the most common definition and measure of resilience used is Wagnild and Young's (1993)

Resilience Scale (RS), which would be beneficial to add to the IMV model.

According to Wagnild and Young, the definition of resilience includes the following five characteristics (1993, p. 167-168; Wagnild, 2009):

- Equanimity: A balanced perspective of one's life and experiences
- Perseverance: The act of persistence despite adversity or discouragement
- Self-reliance: A belief in oneself and one's capabilities
- Meaningfulness: The realisation that life has a purpose and the valuation of one's contributions
- Existential aloneness: The realisation that each person's life path is unique and that some experiences must be faced alone

Current Study

To address the above critical research gaps, this cross-sectional study had three main aims. The first aim was to test the applicability of the IMV model on a sample of male transferred prisoners through testing the model's theory-driven hypotheses about the factors associated with the development of self-harm thoughts versus those associated with self-harm acts. More specifically, this study sought to examine how prisoners with no historical thoughts or historical acts of self-harm (controls), prisoners with historical thoughts but no historical acts of self-harm (ideators), and prisoners with both historical thoughts and historical acts of self-harm (enactors) differed on the IMV model's factors. For comparative consistency, these factors were measured through a series of self-report measures that the developer (O'Connor) also utilises in his research of the model (Dhingra et al., 2015; O'Connor et al., 2012; Wetherall et al., 2018).

Given that the list of factors in the IMV model is not exhaustive and the model lacks protective factors, this study also aimed to expand the model and

address one of its limitations by including an additional, new protective factor of resilience. Relatedly, given that there are only two prison studies examining resilience and self-harm/suicide (Slade & Edelman, 2014; Slade et al., 2014), and that there is currently a dire need to investigate why some prisoners do *not* self-harm (Forrester & Slade, 2014), the third aim of the study was to address this gap by exploring the relationship between resilience and self-harm in prisoners. More specifically, to examine how controls, ideators, and enactors differed on the new protective factor of resilience. To build on the existing literature, Wagnild and Young's (1993) definition and measure of resilience was used in this study.

Based on the central tenets of the IMV model, we hypothesised that 1) ideators and enactors would differ significantly from controls on the motivational phase factors (entrapment, brooding rumination, and social support), but there would be no differences between ideators and enactors on these factors, and 2) ideators and enactors would differ significantly from controls on the volitional phase factors (impulsivity, fearlessness about death, and discomfort tolerance), but ideators would also differ significantly from enactors on these factors. Additionally, we hypothesised that 3) all three groups would differ significantly from each other on the new protective factor of resilience, with controls having a higher resilience score than ideators and enactors, and ideators having a higher resilience score than enactors. Furthermore, given that depression and hopelessness are well-documented factors associated with self-harm ideation and behaviour, it was also hypothesised that 4) enactors would have increased feelings of depression and hopelessness compared to ideators and controls, and 5) ideators would have increased feelings of depression and hopelessness compared to controls.

To our knowledge, this is the first study to test a comprehensive and integrative ideation-to-action framework model of self-harm on a sample of prisoners.

Method

Setting

This study was conducted at a London men's prison that housed Category C prisoners. Category C prisoners were "prisoners who cannot be trusted in open conditions but who do not have the resources and will to make a determined escape attempt" (House of Commons Library, 2015). All of the prisoners at this prison came on a transfer from another estate, with a small proportion being within the early stages of their sentence. The population of this prison was approximately 850 prisoners when this study was conducted.

Ethical Considerations

Ethics. Ethical approval and permission to conduct this study were granted by the Cambridge East Research Ethics Committee (REC reference 16/EE/0360; see Appendix A for favourable opinion letters), the National Offender Management Service (NOMS reference 2018-311; see Appendix B for correspondences), and the Deputy Governor of the prison (see Appendix C). Please note that this study was based on (but substantially amended from) a previous UCL DCLinPsy proposal that could not be completed for unknown reasons – hence why the first letter from the REC states that it was for an amendment. Please also note that the reason why there are two correspondences from both REC and NOMS is because we submitted an amendment during the study. The rationale for this amendment is outlined below under 'Procedure'.

Researcher safety. Researchers attended key trainings (e.g. personal protection training, key talk/radio/security training, managing suicide and self-harm (SASH) training) at the prison prior to commencing the study. Researchers also adhered to the lone working policies of UCL and the prison.

Risk. The ACCT (Assessment, Care in Custody and Teamwork) is part of the National Offender Management Service (NOMS) suicide and self-harm prevention procedure (Prisons and probation ombudsman, 2014b). Both researchers were trained in ACCT prior to commencing the study. An ACCT can be opened by any member of staff at any time during a prisoner's stay when a risk is identified. The researchers opened an ACCT for any participant that disclosed ideation, intent, and/or plans to self-harm or engage in suicidal behaviour during the study.

Participants

Out of 187 male prisoners invited to participate, 106 prisoners participated, 12 were transferred and/or released after agreeing to partake in the study, 67 declined, and two participants did not fully complete the study. Reasons for declining included: the research conflicted with their work schedule, length of time required to partake, no perceived direct benefits of participation, were currently experiencing acute symptoms of a mental disorder and/or were currently engaging in self-harm and did not want to talk about it in the context of a research study. We had to discard the two participants' partial data (prior to data analysis) as one did not fully complete all measures stating it was because the measures were too long, and the other was visibly intoxicated so testing was discontinued almost immediately.

Of the 106 prisoners that participated, the ages ranged from 18 to 55 years old, with the majority of participants within the 26 to 30 years old range (31.1%, n = 33) – though, two participants' age were missing. In regard to ethnicity, 42.5% were

White (n = 45), 31.1% were Black (n = 33), 11.3% were Asian (n = 12), 8.5% were Mixed (n = 9), and 5.7% identified as other (n = 6) – we were missing one participant’s ethnicity. As for religion, 36.8% identified as being Christian (n = 39), 32.1% Muslim (n = 34), 18.9% atheist (n = 20), 8.5% other (n = 9), 0.9% Buddhist (n = 1), and 0.9% Hindu (n = 1) – again, we were missing two participants’ religion. All of the participants identified as heterosexual. The two possible reasons why we were missing some demographic data were because the participants either did not want to disclose this information or simply forgot to answer it. Overall, we had very few missing data because most participants elected for us to read the questions aloud to them and we tried to double check all the measures for those that opted to complete the measures on their own.

As for other demographics, most participants reported not having a physical disability (84%, n = 89) or learning disability (84.9%, n = 90). 53.8% of the sample self-reported that they had been diagnosed with a mental health problem (n = 57) and 46.2% self-reported that they had not been diagnosed with a mental health problem (n = 49). By far the most common mental health diagnosis was depression (n = 48), then followed by anxiety (n = 19), psychosis/schizophrenia (n = 11), and PTSD (n = 11). Other diagnoses included personality disorder, ADHD, bipolar, and OCD. The majority of participants had more than one mental health diagnosis.

In terms of forensic demographics, 84.9% of participants were sentenced (n = 90), 14.2% were on license recall (n = 15), and there was only one immigration detainee. The most common recent offence was related to drugs (33%, n = 35), then followed by dishonesty (e.g. robbery, fraud) (29.2%, n = 31), violence (28.3%, n = 30), and other (9.4%, n = 10). There was quite a large range in length of sentence, ranging from 36 to 648 weeks ($M = 184.73$, $SD = 103.69$), with one participant

sentenced to life and another sentenced to EPP (extended sentence for public protection). There was also quite a large range for the number of days participants had resided in the current establishment, ranging from 1 to 408 days ($M = 74.96$, $SD = 89.20$). As for how long participants had left at the current establishment, it ranged from 6 to 2495 days ($M = 242.97$, $SD = 256.36$). And lastly, the range for how many times participants had been to prison was from 1 to 50 ($M = 7.24$, $SD = 9.48$) with the most common being first- and second-time offenders (21.7%, $n = 23$ and 13.2%, $n = 14$ respectively). Interestingly there were also quite a few participants reporting that the current sentence was their tenth time in prison (11.3%, $n = 12$); however, we noticed that participants would report ten as an average as they had lost count themselves.

Service User Consultation

During the design stage of this study, we asked all six male prison health care representatives (i.e. prisoners employed by the prison to conduct duties to assist the effective running of the healthcare department) (aged between 23 to 38) to consult on the study and provide feedback on the following topics:

- The administration of the measures packet
- Formatting/ordering of the measures packet
- If the instructions for each measure were clear and easy to understand
- General comments on how open and honest prisoners will be when they partake in this study

We then utilised their feedback to shape our measures packet and the study's procedure. These health care representatives were subsequently excluded from participating in the study.

Materials/Measures

Demographic information sheet. An information sheet that inquired about a participant's age, ethnic classification, religion, sexuality, physical disability, learning disability, mental health, current legal status, most recent offence, length of sentence, how long the individual has served under the current sentence, how long the individual has been at the current establishment, and how many times the individual has been to prison (see Appendix D).

Grouping questions. We assessed for both current/recent and historical self-harm ideation and acts. To assess for current/recent self-harm, participants were labelled as a "current/recent enactor" if he answered 'yes' to the following question: *'Since you arrived at this new prison, have you taken an overdose (e.g. of pills or other medication) or tried to harm yourself in some other way (such as cut yourself)?'* Participants were labelled as a "current/recent ideator" if he answered 'no' to the previous question but 'yes' to the following question: *'Since you arrived at this new prison, have you seriously thought about taking an overdose or trying to harm yourself but not actually done so?'* Participants were labelled as "no current/recent risk" if he answered 'no' to both questions.

To assess for historical self-harm, participants were labelled as an "enactor" if he answered 'yes' to the following two questions: *'Aside from any thoughts mentioned above, have you ever seriously thought about taking an overdose or trying to harm yourself?'* and *'Aside from any attempt mentioned above, have you ever taken an overdose (e.g. of pills or other medication) or tried to harm yourself in some other way (such as cut yourself)?'* Participants were labelled as an "ideator" if he answered 'yes' to the first question and 'no' to the second question. Participants were labelled as "control" if he answered 'no' to both questions.

These questions were selected as they were used to categorise participants in O'Connor et al.'s 2012 study that applied the IMV model to self-harm in adolescents. Additionally, if a participant disclosed that he is currently, recently, or has previously self-harmed, we asked follow-up questions around the method, severity, lethality, frequency, and intention of self-harm in order to gain a better understanding of the extent of the individual's self-harm. The follow-up questions were as follows:

- *Method: How did you harm yourself?*
- *Did you require medical attention/assistance when you harmed yourself? If so, what happened?*
- *How many times have you harmed yourself since you arrived at this new prison? /How many times in your life have you harmed yourself?*
- *How often do you harm yourself since you arrived at this new prison? /How often did you harm yourself?*
- *As much as you can recall, at the time you harmed yourself, what final outcome did you most intend and expect?*

The Depression, Hopelessness and Suicide Screening Form (DHS; Mills & Kroner, 2003). The DHS was used in this study to assess for depression and hopelessness. The DHS was developed on a Canadian offender population and is a screen for depression, hopelessness, and indicators of historical and current risk of suicide. It is a self-report measure containing 39-items and participants are asked to rate whether they agree ('True') or disagree ('False') with each statement (e.g. "I feel my situation is hopeless"). Higher scores indicate increased presence of depression, hopelessness, and/or suicide risk. This measure was selected because it has shown to be reliable and valid for offender samples – more specifically, it has good internal

consistency ($\alpha=.90$), construct validity, and criterion validity (Mills & Kroner 2003, 2004, 2005; Slade et al., 2014). In the current study, Cronbach's α was .83.

Entrapment Scale (Gilbert & Allen, 1998). The Entrapment Scale is a 16-item self-report measure that assesses for perceived external entrapment (10 items) (e.g. "I am in a situation I feel trapped in") and internal entrapment (six items) (e.g. "I feel trapped inside myself"). Items are rated on a 5-point Likert scale ranging from 0 ("not at all like me") to 4 ("extremely like me"); higher scores suggest more feelings of entrapment. This measure maps onto the motivational phase factor of entrapment in the IMV model. This measure was chosen because it is consistently utilised by the developer in his research of the IMV model (Dhingra et al., 2015; Dhingra, Boduszek, & O'Connor, 2016) and it has shown to have good psychometric properties – more specifically, it has good internal consistency ($\alpha=.96$) and criterion validity (Griffiths, Wood, Maltby, Taylor, & Tai, 2014). In the current study, Cronbach's α was .92.

Response Styles Questionnaire (RSQ) (Nolen-Hoeksema, 1991). The RSQ is a self-report measure that assesses for cognitive response styles to negative moods. Similar to previous studies (Dhingra et al., 2015, 2016), this study only used the five items that assesses for brooding rumination. Each item is scored on a 4-point Likert scale ranging from 1 ("almost never") to 4 ("almost always"). Higher scores reflect an increased tendency to brood. This measure maps onto the factor of ruminative processes (a *threat to self moderator* (TSM)) in the IMV model. The brooding rumination aspect of the full measure has shown to have good internal consistency ($\alpha=.78$). In the current study, Cronbach's α was .83.

Social Support Appraisals (SS-A) Scale (Vaux, Phillips, Holly, Thomson, & Williams, 1986). The SS-A is a 23-item self-report measure that assesses an

individual's appraisal of support from family, friends, and others. Participants are asked to rate how much they agree/disagree with a statement on a 4-point scale ranging from 1 ("strongly agree") to 4 ("strongly disagree"). Higher scores indicate a lower perceived level of social support. This measure was selected because it is reliable (Cronbach's $\alpha=.92$), valid, there are no other valid prison-specific measures, and it has been used in previous prison studies (Slade & Edelman, 2014; Slade et al., 2014). In the current study, Cronbach's α was .73. This measure maps onto the factor of social support (a motivational moderator) in the IMV model.

Impulsivity. Consistent with previous studies done on the IMV model (Dhingra et al., 2015, 2016; O'Connor et al., 2012), this study measured impulsivity using two items based on the Plutchik Impulsivity Scale (Plutchik, van Praag, Picard, Conte, & Korn, 1989): 'I do things on the spur of the moment' and 'I do things impulsively'. Items are rated on a 4-point scale ranging from 0 ("never") to 3 ("very often"); higher scores indicate greater impulsivity. This measure maps onto the factor of impulsivity (a volitional moderator) in the IMV model. From Dhingra et al.'s 2015 study, Cronbach's α was .61 for these two items. In the current study, Cronbach's α was .90.

Fearlessness about death (FAD). Consistent with previous studies done on the IMV model (Dhingra et al., 2015, 2016), this study measured FAD using the seven-item Acquired Capability for Suicide Scale - Fearlessness About Death scale (ACSS-FAD; Ribeiro et al., 2014). Participants were asked to rate each statement on how much the statement describes him on a 5-point scale – 0 ("not at all like me") to 4 ("very much like me"). Higher scores indicate greater FAD. This measure maps onto the factor of capability (FAD; a volitional moderator) in the IMV model. From

Dhingra et al.'s 2015 study, Cronbach's α was .83. In the current study, Cronbach's α was .75.

Discomfort intolerance. Consistent with previous studies done on the IMV model (Dhingra et al., 2015, 2016), this study measured discomfort intolerance using the Discomfort Intolerance Scale (DIS; Schmidt, Richey, Cromer, & Buckner, 2007; Schmidt, Richey, & Fitzpatrick, 2006). The DIS is a five-item self-report measure that assesses the extent to which an individual can tolerate physical discomfort. Participants were asked to rate items on a seven-point scale ranging from 0 ("not at all like me") to 6 ("extremely like me"). Higher scores indicate greater discomfort intolerance. This measure maps onto the factor of physical pain sensitivity (a volitional moderator) in the IMV model. From Dhingra et al.'s 2015 study, Cronbach's α was .73. In the current study, Cronbach's α was .38.

Resilience Scale-25 (RS-25; Wagnild & Young, 1993). As previously mentioned, the 25 item self-report RS was used to measure resilience in this study. Participants were asked how much they agree/disagree with each statement on a seven-point scale ranging from 1 ("strongly disagree") to 7 ("strongly agree"). Higher scores indicate higher levels of resilience. This measure was selected to be consistent with previous prison studies (Slade & Edelman, 2014; Slade et al., 2014). As resilience is new factor, its position is yet to be determined in the IMV model. From the two prison studies mentioned previously, Cronbach's α was .92. In the current study, Cronbach's α was also .92.

File information. Information regarding the participants' demographics, date of arrival at the prison, current legal status, length of current sentence, medical/psychiatric notes, and any previous/current ACCTs were viewed and

obtained from the prison computer system. This information acted as a validation tool for this study.

Procedure

After ethical approval and permission to conduct this study were obtained from the necessary governing bodies, the researchers had to undertake several preparatory tasks before data collection could begin. These tasks included: attending key trainings, consulting service users (prison health care representatives), and introducing the research project to all necessary staff to obtain their assistance with the project. The two main teams involved were the prison reception team and mental health team (more specifically the lead clinical psychologist and assistant psychologist). Both teams helped with the recruitment phase of the project as it was decided that the researchers should not directly approach potential participants in order to prevent any undue pressure being applied on them to participate. Given the nature of the study, opportunistic sampling and oversampling (Mercer, 2016; Vaughan, 2017) methodologies were utilised.

Inclusion Criteria

- Any “new” prisoner that is housed in the prison’s general population. A “new” prisoner was defined as any prisoner who had been at the current establishment for less than 90 days. The reasoning behind the 90-day timeframe was because according to the statistics the Ministry of Justice (2017) published on self-harm in prisons in England and Wales between 2004 and 2016, the number of incidents of self-harm was consistently shown to be highest in the first 31-90 days of arrival at a prison – the risk of self-harm is highest in the early stages of imprisonment or transfer to a new estate. However, after several weeks of struggling to obtain enough

participants, we had to submit an amendment to the necessary governing bodies to rid the “new”/90-day timeframe criteria, and expand the criteria to include all prisoners at the prison, regardless of arrival date.

- All sentence types (except for sexual offence) and mental health diagnoses were included in this study.
- If a participant had a sufficient understanding of spoken English but not written English, he was included in this study and everything was read aloud to them by the researchers.

Exclusion Criteria

- Prisoners housed on the vulnerable persons wing (those convicted of sex offences) and the London Pathways Unit (LPU) (high risk offenders diagnosed with a personality disorder who have gotten ‘stuck’ in their sentence and whose release into the community has been complicated by their personality disorder) (Independent Monitoring Boards, 2019). Given that prisoners on the vulnerable persons wing and LPU were isolated in the prison, let out of their cells at different times than the general population, and received significantly different provisions of care (e.g. greater staff to prisoner ratio), they were excluded from the study in order to control for potential prison environmental factors – by concentrating on the general population, our sample of prisoners were more or less subjected to the same environment.
- Prisoners who were experiencing acute symptoms (mania) or exhibiting severe behavioural difficulties.

- Prisoners who had difficulty understanding both written and spoken English were also excluded from this study as there was no funding available for interpreters.

With the above criteria, the prison reception team helped approach “new” prisoners during their arrival ‘check-in’, while the mental health team helped approach all general population prisoners after checking the prisoner’s file information (specifically medical/psychiatric notes and previous/current ACCTs). Both teams then provided the researchers with a weekly list of potential prisoners interested in finding more about the study. Within seven days, the researchers then located and met with the prisoner to explain the study, provide him with a Participant Information Sheet (PIS; see Appendix E), and inquire if he wanted to partake in the study. At this point, potential participants were presented with four options: request more time to think about participating, decline, consent but request to participate at another day and/or time, or consent and complete the battery of measures on the same day. To protect confidentiality, the study was conducted on a one-to-one basis in a private room or office, but when a private room or office was not available, the study was conducted as far away from other prisoners on the wing. Those who agreed to participate completed a written consent form (see Appendix F).

All participants were first given a standardised introductory briefing (see Appendix G) prior to completing a battery of measures. The battery of measures was in paper format and took between 30 to 90 minutes to complete. Afterwards, the researcher double checked that all measures were filled out correctly, and all participants were given a standardised debriefing (see Appendix G). Time was spent with the participant if the participant exhibited any signs of distress during their participation. If the participant disclosed any potential risks to themselves or others,

the researchers consulted as well as notified the appropriate professional(s) in line with the prison's safety protocol (including the mental health team), and an ACCT was opened or edited if deemed necessary.

As a form of validation, the researchers checked the participant's answers against their file information provided by the mental health team.

Please note that as this was a joint thesis with another doctoral trainee (Miller, 2019), there were additional measures given to participants besides those mentioned in the 'Materials/Measures' section above. To ensure consistency, both trainees met with the same participant simultaneously to obtain informed consent and administer the measures at the beginning of the study; however, after a few participants, the trainees separately met with different participants. Please see Appendix H for a joint research statement detailing each trainee's contribution to the research project.

Data collection took place between November 2018 and March 2019. To protect each participant's identity, all data was anonymised before the measures were scored and entered into an SPSS database for data analysis. Measures were scored only by the researchers, but a UCL undergraduate student assisted the researchers with data entry. All data was stored in line with the Data Protection Act.

Design/Statistical Analysis

This was a cross-sectional study utilising an independent measures design. Data were first examined to determine whether the assumptions of parametric statistical tests were met. If all assumptions were met, parametric statistical tests were conducted. If assumptions were violated, both parametric and nonparametric statistical tests were conducted to compare results. Depending on the above and the specific research question, independent samples t-tests, Mann-Whitney U tests, one-

way Analysis of Variances (ANOVAs), Welch's tests, and/or Kruskal-Wallis tests were conducted. Essentially, statistical tests were conducted to examine how controls, ideators, and enactors differ on the following nine factors: depression, hopelessness, perceived entrapment, brooding rumination (response style), social support, impulsivity, fearlessness about death, discomfort intolerance, and resilience. To control for the number of comparisons and to protect from Type I error, we utilised the Bonferroni correction method. Descriptive statistics were also examined.

Results

Ninety-Day Criteria Change Issue

Given that the inclusion criteria was slightly modified during the study, it was pertinent to first examine whether this affected the results. In other words, is there a significant difference between participants based on how long they have been at the current establishment (i.e. those who have been there for less than 90 days versus those who have been there for more than 91 days)? Out of the 106 male prisoners that participated, 92 had been there for less than 90 days and 14 had been there for more than 91 days. Independent samples t-tests and Mann-Whitney U tests were conducted between the two groups on the nine outcomes and tested against a Bonferroni-adjusted alpha level of 0.006 (0.05/9). There were no significant differences between those who have been there for less than 90 days versus those who have been there for more than 91 days on any of the outcome variables (see Appendix I for details). It was thus deemed reasonable to combine the ≤ 90 and >91 days groups.

Descriptive Statistics

Of the 106 male prisoners that participated, 82 (77.4 %) were "no current/recent risk", 14 (13.2%) were "current/recent ideators", and 10 (9.4%) were

“current/recent enactors”. Conversely, 45 (42.5%) were controls (no historical thoughts or historical acts of self-harm), 13 (12.3 %) were ideators (historical thoughts but no historical acts of self-harm), and 48 (45.3%) were enactors (historical thoughts and historical acts of self-harm). Given that there were not enough current/recent ideators and enactors as well as the fact that the sample sizes for the current/recent risk groups were extremely uneven, current/recent risk groups were not analysed further and the focus was on historical groups. This was also the focus in O’Connor’s research on the IMV model (Dhingra et al., 2015; O’Connor et al., 2012; Wetherall et al., 2018). Descriptive statistics by group membership (i.e., controls vs. ideators vs. enactors) are reported in Table 1 below.

Power Analysis

Prior to the start of the study, a power calculation was conducted using G Power (Faul, Erdfelber, Lang, & Buchner, 2007) for sample size estimation. For the historical risk groups, with an alpha level of .05, a power level of .80, and an effect size of $F = .30$ (a medium effect size according to Cohen’s 1988 criteria) in line with similar studies (Dhingra et al., 2015; O’Connor et al., 2012; Slade & Edelman, 2014; Slade et al., 2014), a minimum of 37 participants was needed for each group to achieve adequate power. Given that the ideator group does not meet the required minimum number of participants and is very small ($n=13$) compared to the other two groups, the ideator group results should be interpreted with caution.

Group Comparisons

To answer the research hypotheses, a series of one-way ANOVAs were conducted to compare the three groups (controls vs. ideators vs. enactors) on all continuous outcome variables. The classic ANOVA was the preferred parametric statistical test, but when the data violated the homogeneity of variance assumption, in

addition to the existing unequal sample sizes issue, Welch's test was used instead. Post-hoc comparisons were also conducted. As previously mentioned, Bonferroni corrected/adjusted p -value was utilised - alpha level of 0.006 (0.05/9). The results of the ANOVA, Welch's, and post-hoc tests (Bonferroni corrected) are provided in Table 1.

Hypothesis One. For the factor of perceived entrapment, the one-way ANOVA revealed there was a statistically significant difference between the three groups, $F(2, 103) = 14.56, p < .001$. Post-hoc tests showed that only the enactor group differed significantly from the control group on perceived entrapment. There was no statistically significant difference between the other comparisons.

For the factor of brooding rumination, the one-way ANOVA revealed there was a statistically significant difference between the three groups, $F(2, 103) = 9.03, p < .001$. Post-hoc comparisons showed that the average brooding rumination score was significantly higher in the enactor group than the other two groups (ideators and controls). There was no statistically significant difference between the average brooding rumination scores of the ideator and control groups.

And for the factor of social support, the one-way ANOVA revealed there was a statistically significant difference between the three groups, $F(2, 103) = 13.81, p < .001$. Post-hoc comparisons showed that both the enactor and ideator group differed significantly from the control group on social support. There was no statistically significant difference between the average social support scores of the enactor and ideator groups.

Hypothesis Two. For the factor of impulsivity, Welch's test revealed there was a statistically significant difference between the three groups, $F(2, 32.70) = 12.27, p < .001$. Post-hoc tests showed that only the enactor group differed

significantly from the control group on impulsivity. There was no statistically significant difference between the other comparisons.

For the factors of fearlessness about death and discomfort intolerance, one-way ANOVAs revealed there was no statistically significant difference between the three groups for either factors, $F(2, 103) = .14, p = .87$ and $F(2, 103) = 1.38, p = .26$ respectively.

Hypothesis Three. As for the new factor of resilience, the one-way ANOVA revealed there was a statistically significant difference between the three groups, $F(2, 103) = 7.76, p = .001$. Post-hoc tests showed that only the enactor group differed significantly from the control group on resilience. There was no statistically significant difference between the other comparisons.

Hypothesis Four and Five. For the factor of depression, the one-way ANOVA revealed there was a statistically significant difference between the three groups, $F(2, 103) = 17.54, p < .001$. Post-hoc comparisons showed that the average depression score was significantly higher in the enactor group than the other two groups (ideators and controls). However, there was no statistically significant difference between the average depression scores of the ideator and control groups.

And lastly, for the factor of hopelessness, Welch's test revealed there was a statistically significant difference between the three groups, $F(2, 31.95) = 9.59, p = .001$. Post-hoc tests showed that only the average hopelessness score was significantly higher in the enactor group than the control group. There was no statistically significant difference between the average hopelessness scores of the enactor and ideator groups or between the average hopelessness scores of the ideator and control groups.

Table 1

Descriptive Statistics and Group Comparisons for Controls (n = 45) vs. Ideators (n = 13) vs. Enactors groups (n = 48).

Variable	Controls (C)		Ideators (I)		Enactors (E)		<i>F</i>	Post-Hoc Significant Differences
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Perceived Entrapment ^a	14.49	11.77	19.69	12.03	29.83	15.86	$F(2, 103) = 14.56, p < .001^*$	C < E
Brooding Rumination ^a	9.91	3.42	9.77	2.77	12.90	4.02	$F(2, 103) = 9.03, p < .001^*$	C < E; I < E
Social Support ^a	39.71	9.45	49.00	9.81	51.56	12.64	$F(2, 103) = 13.81, p < .001^*$	C < I; C < E
Impulsivity ^b	2.29	1.36	2.85	1.77	3.98	1.87	$F(2, 32.70) = 12.27, p < .001^*$	C < E
Fearlessness about Death ^a	18.78	7.51	17.54	8.24	18.88	9.17	$F(2, 103) = .14, p = .87$	
Discomfort Intolerance ^a	13.38	7.14	9.69	6.12	13.13	7.62	$F(2, 103) = 1.38, p = .26$	
Resilience ^a	147.18	21.39	139.77	20.77	128.81	23.97	$F(2, 103) = 7.76, p = .001^*$	C > E
Depression ^a	5.18	4.20	6.46	4.94	10.21	3.90	$F(2, 103) = 17.54, p < .001^*$	C < E; I < E
Hopelessness ^b	1.36	2.12	2.62	3.04	3.73	3.03	$F(2, 31.95) = 9.59, p = .001^*$	C < E

Note.

a = ANOVA was used.

b = Welch's was used (When data violated homogeneity of variance assumption).

* $p < 0.006$.

Bonferroni correction applied.

Additional Analyses. Given the unequal sample sizes and violations of parametric statistical test assumptions, all of the analyses above were repeated using the non-parametric alternative to the one-way ANOVA (the Kruskal-Wallis H test). Since the two sets of findings (p values) were consistent, only the ANOVAs and Welch's results are presented here. The equivalent Kruskal-Wallis H test results are presented in Appendix J. To further compare the above results, independent samples t-tests and Mann-Whitney U tests were also conducted between the control and enactor groups (see Appendix K for results). Overall, all statistical tests conducted found the same results.

Discussion

With self-harm being a serious health concern in prisons, especially among male transferred prisoners, it is of utmost importance that we devote research towards understanding this phenomenon in this high-risk group. Given that research on self-harm in prisons have mostly been atheoretical in nature (Slade & Edelman, 2014; Slade et al., 2014), it is crucial that we test and apply existing comprehensive as well as integrative theoretical models of self-harm that are originally developed for the general population on the prison population. This cross-sectional study focused on the IMV Model (O'Connor, 2011b) as it is currently the only comprehensive and integrative ideation-to-action framework model that has been successfully applied to self-harm.

Summary of Main Findings

There were in total five hypotheses for this study. Four of the hypotheses were partially supported, and one was not supported at all. Given that most of the statistical comparisons with the ideator group are not significant, the ideator group results will only be addressed briefly, and the focus of the following summary will

mainly be on the comparisons between the control and enactor groups. A potential reason for why most of the ideator group results were not significant is because of how small the group was, therefore, analysis of this group lacked sufficient power to detect significant effects.

Beginning with the first hypothesis, namely that ideators and enactors would differ significantly from controls on the motivational phase factors (entrapment, brooding rumination, and social support), but there would be no differences between ideators and enactors on these factors – the statistical results above partially support the entrapment and brooding rumination parts of the hypothesis, and fully support the social support part of the hypothesis. Similar to O'Connor et al.'s 2012 study, as a group, enactors (prisoners with historical thoughts and historical acts of self-harm) felt significantly more entrapped, had a higher tendency to brood/ruminate, and self-reported having lower levels of social support than controls (prisoners with no historical thoughts or historical acts of self-harm). Also, ideators (prisoners with historical thoughts but no historical acts of self-harm) self-reported having significantly lower levels of social support than controls. As predicted, there was no significant difference between enactors and ideators on entrapment and social support. Aside from the small size of the ideator group, another potential reason for why some parts of the first hypothesis were only partially supported is because the difference between controls and ideators on the factors of perceived entrapment and brooding rumination is not as large in this population. A notable difference between the current findings and O'Connor et al. 2012 study's findings is that there was a significant difference between enactors and ideators on brooding rumination. Conceptually this makes sense as the more an individual tends to brood/ruminate, the more likely the individual will act on their thoughts of self-harm. Thus, perhaps

brooding rumination should be considered a volitional moderator (VM) in the IMV model. However, revision of the model would depend on replication in an adequately powered study.

Moving to the volitional phase of the IMV model, the related hypothesis was that ideators and enactors would differ significantly from controls on the volitional phase factors (impulsivity, fearlessness about death, and discomfort tolerance), but ideators would also differ significantly from enactors on these factors. We did not find any evidence to support the fearlessness about death and discomfort intolerance parts of this hypothesis, but we did find evidence to partially support the impulsivity part of this hypothesis. From the analyses above, it appears that only enactors were significantly more impulsive than controls. There are several potential reasons as to why our findings are not in line with O'Connor et al.'s findings in their 2012 study. Firstly, the ideator group again was too small to compare. Secondly, replicating O'Connor and his colleagues' method, the factor of impulsivity was only measured by two items in this study, which one could argue is not sufficient to capture the complex concept of impulsivity. In fact, impulsivity is typically assessed using multi-item measures such as the 30-item Barratt Impulsiveness Scale (BIS-11; Patton, Stanford, & Barratt, 1995). However, more importantly, the concept of impulsivity itself is rather unclear. Although there has been an extensive amount of research on the relationship between impulsivity and a variety of externalising problems, some researchers have used the term impulsivity to describe a personality trait, whereas others have used it to describe a state (Ireland & Archer, 2008). This has led to much confusion and a lack of clarity on the conceptualisation of impulsivity and its effect on problems such as self-harm (Ireland & Archer, 2008). While we have traditionally believed that trait impulsivity increases the likelihood of an individual enacting

suicidal/self-harm thoughts (Mann, Waternaux, Haas, & Malone, 1999; Wetherall et al., 2018), a recent meta-analysis found only a small relationship between trait impulsivity and suicidal behaviour (Anestis, Soberay, Gutierrez, Hernández, & Joiner, 2014). Thus, the relationship between impulsivity (trait and state) and self-harm/suicidal behaviour needs to be further examined. Unfortunately, like several of O'Connor's studies, we also failed to differentiate between trait versus state impulsivity, which could have contributed to our lack of significant findings for this particular factor. Similarly, this state versus trait issue could also be the reason why we did not find any evidence to support the factors of fearlessness about death and discomfort intolerance. Given that we compared historical and not current groups, it is reasonable that there would be no difference between the groups on these factors as fearlessness about death and discomfort intolerance could be "state" factors that are only applicable when an individual is about to or is in the middle of self-harm. Perhaps just because an individual self-harmed in the past, does not mean that attitudes towards death and discomfort stay stagnant. Evidently the volitional phase of the IMV model or the acquired capability concept (Joiner, 2005) needs to be researched among those who are about to or currently self-harming.

With regard to the third hypothesis, which was that all three groups would differ significantly from each other on the new protective factor of resilience (with controls having a higher resilience score than ideators and enactors, and ideators having a higher resilience score than enactors), this hypothesis was also only partially supported by our results. Only the control group was significantly more resilient than the enactor group. Though by looking at the means of each group, it appears that the predicted pattern of the means (control > ideator > enactor) was still accurate (however not significant). Thus, perhaps with a larger sample size we would

find significance. Since resilience is a previously unexamined factor, a potential reason for why we did not find evidence to fully support this hypothesis could be that we chose an unsuitable measure and/or definition to capture the concept of resilience in this population. While the existing items in the measure are suitable in general, it could be modified to be more relevant to the prison population by adding items related to being imprisoned – for example, “I am able to accept the consequences of my actions”. Unfortunately, there is currently no widely used measure of resilience within the prison population (Slade et al., 2014) so more research needs to be conducted to determine a suitable resilience measure for prisoners. However, given the direction of our results, we believe that there is a rationale for considering resilience as a factor in future adaptations of the IMV model, either as a motivational or volitional moderator. In fact, O’Connor and his colleagues recently updated the model (Wetherall et al., 2018) and included it as a motivational moderator – though this paper did not discuss if including resilience improved the model. Evidently more research is needed to investigate the relationship between resilience and self-harm in prisoners, how the factor of resilience fits in the IMV Model, and if including resilience in the IMV Model even enhances it.

As for the fourth hypothesis (enactors would have increased feelings of depression and hopelessness compared to ideators and controls), our findings fully support the depression part of the hypothesis but only partially support the hopelessness part of the hypothesis. As we hypothesised, enactors were significantly more depressed compared to ideators and controls. Enactors also significantly felt more hopeless than controls. However, there was no significant difference between ideators and enactors on hopelessness. This was a surprising finding and warrants further research on the emotional experience of being in prison (Slade et al., 2014).

Predictably, due to how small the ideator group was, we found no evidence to support the fifth hypothesis (ideators would have increased feelings of depression and hopelessness compared to controls).

Clinical Implications

Although only four of the hypotheses were partially supported, the findings from this study are still potentially useful and have important implications for clinical practice. From this study, we have found that there is a significant difference between male prisoners who have had historical thoughts and historical acts of self-harm (enactors) versus those who have not (no historical thoughts or historical acts of self-harm/controls). More specifically, those with a history of (historical risk/historic vulnerability) can currently be at higher risk of experiencing depression and hopelessness, perceiving to be more entrapped, brooding/ruminating, self-reporting having lower levels of social support, being impulsive, and less resilient than those with no historical thoughts or historical acts of self-harm. These are all pertinent factors that could potentially make one vulnerable and lead one to self-harm again or even more seriously, attempt suicide in prison. Historical risk of self-harm is important and a predictor of future risk (Chan et al., 2016; Ribeiro et al., 2016). Hence, it is extremely important for prison and clinical staff to inquire about historical thoughts and acts of self-harm, and the IMV model factors when conducting regular assessments so that this information can routinely form part of an ongoing clinical formulation. The presence of any of the above factors should then warrant staff to investigate further and develop appropriate interventions (at both the individual and organisational level) that target these factors in order to prevent an individual from self-harming or attempting suicide in prison – to reduce risk. For instance, cognitive behavioural therapy would be helpful for those who experience

brooding rumination (O'Connor et al., 2012), and a peer support program would be helpful for those who feel they do not have much social support (Slade & Edelman, 2014). While the current ACCT process in prisons does inquire about current risk and some of the IMV model factors like hopelessness, it does not include all the factors discussed in this paper – therefore, the results of this study should also help inform, refine, and improve the current ACCT process. Overall, the findings of the current study and partial support for the IMV model provide the foundation for utilising a theory-based approach for risk assessment and the development of targeted interventions for prisoners.

Strengths

This research project had several strengths. The main strength was that this study successfully tested and applied a comprehensive as well as integrative ideation-to-action framework model to a population where research has mostly been atheoretical (Slade & Edelman, 2014; Slade et al., 2014). By doing this we have advanced the field and advocated for the use of a theory-based approach to understanding self-harm in male prisoners. Another strength of this study is that we addressed some of the original developer's limitations that he mentioned in his research on the IMV Model. For instance, Wetherall et al. (2018) stated that future research would benefit from testing and applying the model on a high-risk population which we did. Also, this study tested and included a new protective factor of resilience, which prior to O'Connor's latest IMV model did not exist. The inclusion of this factor not only improves the IMV model, but is also a step towards helping us understand why some prisoners do not self-harm. Moreover, this study made a clear distinction between current/recent and historical self-harm, which O'Connor's studies and many prison studies have not done (Martin et al., 2014). Though it is

disappointing that while we were able to collect current/recent risk data, there were not enough participants in the groups to analyse the data.

Regarding some methodological strengths, though we would have liked to have a larger sample, the sample that we obtained is adequate for this difficult-to-research population and sensitive topic. Second, unlike the existing research on the IMV model, we were able to implement a validation tool (checking the prisoner's file information), so we are more confident in our results. Third, also unlike the existing research on prisoners (Slade & Edelman, 2014; Slade et al., 2014), participants were able to complete the battery of measures individually and not in a group setting. While this may have taken up more time, we believe that this is the correct method as it granted privacy, questions could be read aloud to those with literacy difficulties, and it helped reduce testing fatigue. Additionally, though there are limitations to using a cross-sectional design, this method allowed us to obtain data that were subject to the same prison culture. In other words, this allowed us to avoid any potential effects or complications stemming from changes within a prison culture. Essentially, the data for this study were collected during a specific period in time where the prison culture was the same – there was low staff turnover rate, prison staff attitudes towards self-harm/suicide were relatively similar, how the ACCT process was treated by staff was the same, and illegal drug/alcohol usage by prisoners was low. Furthermore, although we were worried about changing the criteria during the study, statistical analyses revealed that fortunately this was not something we needed to be concerned about in the end – there was no difference between prisoners who had been at the prison for less than 90 days and in prisoners who had been there for more than 91 days. Lastly, despite having unequal sample sizes, and violations of parametric statistical test assumptions, our statistical analyses

(even with the strict and conservative Bonferroni correction method) all led to the same conclusions.

Limitations

There were also several limitations to this study. The main limitation was the fact that we could only analyse historical and not current risk groups. We believe this limited the applicability of the IMV model because some of the factors, such as the volitional phase factors, are just not present when an individual is not about to or in the middle of self-harm. In other words, the model would have been more applicable had we been able to analyse current risk groups. However, it is important to highlight that it was extremely difficult to recruit participants – specifically, prisoners who were currently self-harming or experiencing self-harm ideation. According to the Ministry of Justice (2017), prisoners are at highest risk of self-harm in the first 31-90 days, but this was not the case at this prison – an unexpected yet positive finding. Even with opening up the criteria and implementing an oversampling methodology, we continued to struggle with recruitment for the current risk groups. Potential reasons for why this occurred include: there is a lot going on in the first 90 days of being transferred into a new prison (intake, getting used to a new environment etc.) so participating in this study was not a priority for them, this prison does not accept risky individuals on ACCTs, and prisoners can be extremely reluctant to report any thoughts or acts of self-harm. This is because once a prisoner does report any expression of vulnerability, there are consequences to personal safety, safety procedures that prisoners may consider ‘punitive’ are put in place (round the clock close supervision), and there may even be restricted communication with family/friends (Ireland, 2005; Slade & Edelman, 2014). In fact, a study conducted by Way, Kaufman, Knoll, and Chlebowski (2013) found that 42% of prisoners would

not report self-harm/suicide ideation to mental health staff. This all goes to illustrate how challenging it is to study current self-harm in this population and why there is not much research on self-harm in prisons. Had we obtained enough prisoners who were currently self-harming or having self-harm thoughts though, we would have liked to analyse how current risk and no current risk groups differ on the IMV model as well as conduct a hierarchical regression to assess if all the IMV model factors combined could predict group membership. It would have also been interesting to compare current and historical risk groups to see how they differ.

Relatedly, a second limitation to this study was that despite our best efforts, even with a sample of over 100 prisoners, we were only able to obtain 13 “pure” historical ideators. Due to this small number, we were unfortunately unable to tap into the dynamic nature of the IMV Model and we were unable to attain confidence in the ideator group comparisons. Though perhaps this is not wholly unexpected given this population. Due to the fact that the nature of the prison population tends to be rather impulsive (trait and/or state) (Ireland & Archer, 2008), it can be difficult to find and research pure ideators of self-harm (historical or current) as individuals are more likely to impulsively act on their self-harm thoughts.

Another limitation to this study was that there could have been a sampling bias in that only those who are stable and open to discussing this sensitive topic participated in this study. In fact, most of the 67 people that declined were generally unstable (e.g. experiencing acute symptoms of a mental disorder), on an ACCT, and had both historical as well as current risk. Unfortunately, this inability to access certain people when researching sensitive topics will be a limitation to any study.

Other limitations to this study were the use of self-report measures which could have contained inaccuracies (e.g. biases) and the fact that we were only able to

test certain factors of the IMV model. Though it may not be completely practical to utilise non-self-report, objective measures like the Personality Assessment Inventory (PAI; Morey, 2007) in addition to other measures in one session in this type of testing environment. Finally, like other studies, there are limits to the generalisability of the results of this study – the results may not be generalisable to female, juvenile or other Category type prisoners.

Conclusion/Future Directions

Despite the limitations, this study was an important step towards demonstrating the usefulness of a comprehensive as well as integrative ideation-to-action framework model, furthering our understanding of self-harm in prisoners, encouraging the field to use a theory-based and dynamic approach to assess self-harm in prisoners, and laying the groundwork for future research to build upon. While several ideas for future directions have already been mentioned above, some other important ones include obtaining a larger sample size (with more participants in the current risk groups), conducting the same study on other types of prisoners, and testing the entire IMV model. Additionally, given that a recent meta-analysis found that single risk factors are limited in their ability to accurately predict future self-harm, future research should move from conducting association-based studies like this one to focus on combining risk factors and developing risk algorithms (Franklin et al., 2017). Consequently, the IMV Model needs to be tested in prospective and longitudinal studies.

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Part Three: Critical Appraisal

Introduction

The following critical appraisal discusses some of the insights that I have gained as well as issues and challenges that I faced during the process of conducting this research project. The first section will cover reflections on some conceptual issues that arose during the study. The main part of the appraisal will highlight the various challenges of conducting research in a prison. And finally, the appraisal will end with some suggested directions for future research.

Reflections on Conceptual Issues

As mentioned in the empirical paper, the general lack of significant findings between the historical risk groups on the volitional factors of the Integrated Motivational-Volitional (IMV) Model of Suicidal Behaviour (O'Connor, 2011; impulsivity, fearlessness about death, and discomfort tolerance) highlighted an extremely important conceptual issue – namely that it is crucial to determine from the outset whether a factor is a ‘state’ or ‘trait’ factor. Reflecting back on this, this is something that we should have noticed and addressed as it was one of the limitations in Wetherall et al.’s 2018 study on the IMV model. Nevertheless, despite this weakness, our findings do potentially suggest that perhaps the volitional factors are in fact ‘state’ factors – or factors that are only applicable when an individual is about to or is in the middle of self-harm – and thus should only be assessed in current and not historical risk groups. This conceptual issue was an important lesson for me to learn and I will certainly keep it in mind when designing studies in the future.

Another conceptual related issue that this project accentuated was the nebulous definition of self-harm. More specifically, the issue was whether excessive recreational drug/alcohol use and accidental overdoses were considered as self-harm. To be standardised, this study adopted both NICE’s as well as O’Connor’s

definitions of self-harm and did not label these instances as self-harm. Looking back, the only reason why we were able to be this specific and achieve this clear, uniform definition of self-harm is because of the additional follow-up questions we asked about a participant's self-harm – i.e. the method, severity, lethality, frequency, and intention of self-harm. Unfortunately, the answers we obtained did not lend themselves to qualitative analysis in any way, but they served the purpose of allowing us to achieve a clear and uniform definition of self-harm. This is something that I was particularly proud of for devising and something that I recommend future research (especially O'Connor's research on the IMV Model) to include so that there is no more debate over the definition of self-harm (Cipriano, Cella, & Cotrufo, 2017; Silverman & De Leo, 2016).

Challenges of Conducting Research in a Prison

While I have had some experience in forensic psychology and have worked with prisoners, this was the first time I conducted research in a prison. Naively, I thought that with my background, there would not be many issues or challenges. Additionally, I thought that my experience working in a prison would be similar to conducting research in a prison. However, I was profoundly wrong on both fronts. The following will be divided into the various challenges that we faced at different steps of the research process. Recommendations are made throughout this section for future researchers to consider if they are interested in conducting research with this population and in this setting.

Setting Up

As with all research, the initial planning and preparation stages are quite labour intensive. However, given that we were targeting a vulnerable population (the prison population), there were additional approvals that we needed to obtain from

necessary governing bodies (e.g. the National Offender Management Service, the Deputy Governor and Head of Safer Custody at the prison) as well as various trainings that we had to attend (that were not regularly scheduled) before we could start the research project. While this was all expected (Bulman, Garcia, & Hernon, 2012), what was not expected was how challenging it would be to get staff at the prison on board with this project. Going into this study, I thought that staff at the prison would be pleased that we were going to attempt to help further everyone's understanding of self-harm at the prison, but instead I was met with indifference. Although management seemed to be excited about this study being conducted at their prison, this was not exemplified by everyone else. Both asking the prison reception team to mention to new intakes that there was a study going on, and asking the mental health team to let us know if there was anyone on their caseload that would be suitable for the study, were extremely difficult tasks. At first this was all very frustrating and disappointing, but then I realised several things. The first thing I realised is that everyone at the prison was stretched thin by their own responsibilities, so it is understandable that adding a simple task to their already full plate would be impractical and interpreted as a burden (Cislo & Trestman, 2013). The second thing I realised is that the mental health team was going through several structural changes during the period this study took place, so it is also understandable why they were not fully cooperative. The third and probably most important question was "who was I to ask staff for help with my project?". Since I was only able to go into the prison once or twice a week, I had limited relations with the staff at the prison. Unfortunately, there is not much one can do about the first two points besides being patient and accepting any help that you can get, but what I would recommend to future researchers is that it is extremely important to establish and build a good

collegial relationship with all staff at the prison quickly (Apa et al., 2012). Unlike when you work somewhere full-time, when you conduct research once a week, you are not given the luxury of getting to know other staff at a leisurely pace. Moreover, although most research projects can be done individually, if you are planning to embark on research in a prison, it is strongly recommended to establish a team – preferably with someone who works at the prison and understands the lay of the land so to speak (Apa et al., 2012; Cislo & Trestman, 2013). Luckily, one of our supervisors already worked at the prison so both him and his assistant psychologist were able to form our team, and assist us in making this project a success when we could not fully depend on the prison reception and mental health teams.

Recruitment

The recruitment stage was probably the most difficult part of the research process. Since we had to rely on the prison reception and mental health teams to help us with recruitment (in order to prevent any undue pressure being applied on prisoners to participate), we naturally struggled with this due to the points mentioned above. However, there were additional issues and challenges that we faced during recruitment. As mentioned in the empirical paper, we were struggling to obtain enough participants with our original criteria (specifically prisoners who were currently self-harming or experiencing self-harm ideation), so we had to submit an amendment during the study to expand the criteria to include all prisoners at the prison. It felt rather uncomfortable having to change the criteria during the study, but it had to be done and thankfully there were no differences in the end between those who had been there for 90 days or less and those who had been there for more than 91 days. Though we had a legitimate rationale for our original criteria, an important lesson to retain from this is to not limit oneself in the inclusion/exclusion criteria.

However, even with expanding the criteria and utilising an oversampling methodology, we continued to struggle with recruitment for the current/recent risk groups. Potential reasons for why this occurred have already been mentioned in the empirical paper, but another reason could be because of the type of prison the study was conducted in. The prison we selected for this study is a Category C sentenced prison rather than a remand prison, the latter of which is where most of the psychopathology is. By the time an individual gets to a Category C prison, the individual is relatively stable mental health wise, so it makes sense why we were not obtaining a lot of 'risky' participants. Consequently, a recommendation for future researchers that are interested in the topics of self-harm and suicide would be to study these in a remand prison where hopefully recruitment of individuals who are currently self-harming and/or experiencing self-harm ideation is not as difficult. However, given the sampling bias we noticed in our study, it is important for future researchers to be aware that it can be quite challenging to get 'risky' individuals to consent to partake in studies as they may be too unstable. Though without a time constraint (such as being on an accelerated course), perhaps researchers will be able to wait and follow up with these 'risky' individuals as soon as they become a bit more stable.

A final unexpected recruitment issue was the fact that it was unbelievably challenging to locate prisoners at the prison. One would think that it would be easy to locate prisoners in a prison as there are only so many places a prisoner can go. In reality, there were some days where most of the day was spent locating prisoners. This became less of an issue towards the end of our study because we implemented several solutions to counteract this problem. First, we made sure to arrive on the wings before prisoners were let off the wing for various reasons, e.g. a medical

appointment or job. Second, we established good relations with the officers on all of the wings so that they could assist us with locating prisoners and let us know when they think a prisoner was going to be off/on the wing. Third, although lockdowns at the prison delayed data collection, we used lockdowns to locate prisoners to obtain their consent and schedule them in to partake in the study. And lastly, we originally limited ourselves to only approaching prisoners on the wings but given that many of them had jobs or classes off the wing, we eased this restriction and approached prisoners wherever we could (within reason of course). With the above solutions and a lot of time as well as patience, locating prisoners for recruitment should not be as challenging in future studies as it was for us. However, it is important to keep in mind that recruitment problems are one of the main reasons why studies in correctional environments can take months and even years longer to complete when compared to similar studies done in the community (Cislo & Trestman, 2013).

Data Collection

Surprisingly, collecting the data itself (i.e. asking participants to complete an extensive battery of measures) was not an issue at all. We tried to make the process as interactive as possible by being genuinely curious about the participant's experience and reading the measures aloud. In fact, there was only one instance where a participant declined to complete the battery because the packet of measures was too long. However, what was an issue was finding a private space to collect the data (Cislo & Trestman, 2013). Originally, we planned to meet participants on a one-to-one basis in a private legal visitation room off the wing, but we encountered several problems with this (e.g. scheduling issues, lack of officer escorts, participants not wanting to go to 'legal' for fear that they 'caught another case') so we had to alter this plan and instead find private rooms or offices on the wing to use whenever

possible. However, officers were generally displeased whenever we asked to use their office, we had to compete with other teams for these limited private consultation rooms on the wings, and towards the middle of the study one of the private consultation rooms that we used (on a wing where most of our participants were located) was converted into a temporary segregation unit. At this point, we finally understood why many prison studies (Slade & Edelman, 2014; Slade, Edelmann, Worrall, & Bray, 2014) typically collect data in a group setting. Nevertheless, we refused to compromise participants' privacy, so we had to become flexible and occasionally conduct the study out in the open (but as far away from other prisoners on the wing) when a private room or office was not available. Though one may argue that the testing environment (private room or office versus out in the open) could potentially impact the results and/or a participant's level of effort, we did not find this to be the case.

Another challenge that we encountered during data collection was the unexpected influx of drugs/alcohol at the prison. In fact, the rate of positive random drug tests in prisons has increased from 7% to 10.6% between 2012/13 and 2017/18 (HM Prison & Probation Service, 2019). Fortunately, this influx occurred towards the end of data collection and we only had one instance where we had to stop testing because the participant was visibly intoxicated. However, this took us by surprise and is an issue that researchers need to prepare as well as assess for in future studies.

A final interesting issue that arose during the data collection phase of this research project was the fact that I had to manage dual roles of being a researcher and a trainee clinical psychologist – two roles that arguably have different responsibilities and guidelines around duty of care, sharing of information etc. There were several instances where I had to step out of the role of a researcher and into the

role of a trainee clinical psychologist to manage the situation, provide brief therapy, and follow up on cases to make sure the individual was being seen by the mental health team. As a word of advice to those interested in conducting this type of research: the above instances are not uncommon as you are doing research in a setting where resources are limited and need is high, so sometimes you could be the only person the participant has expressed their mental health needs to. Consequently, it is important for future researchers to be up front with participants about the existence of both roles and to be ready to switch roles when necessary.

Summary

Overall, the three main takeaways from conducting research in a prison are: it takes a lot of time and patience (Cislo & Trestman, 2013), it is important to have flexibility, and one needs to expect the unexpected. The above are just some of the main issues and challenges we faced, but given the complexity of this population and setting, I am sure that there will be additional issues for future researchers to consider depending on the research topic and type of prison (Cislo & Trestman, 2013). After all, prisons are not all the same and every prison has its own culture and system (Apa et al., 2012).

Future Research Directions

Given the above issues and challenges, it is no wonder that the prison population is under-studied (Cislo & Trestman, 2013). However, this should not discourage future researchers and be an impediment to research. Instead, it is of vital importance to work together to devise solutions to these issues and challenges and continue to conduct research on this population. Some future directions have already been mentioned in the empirical paper but there are a few more to discuss.

Related to the suggestion of incorporating resilience as a factor in future adaptations of the IMV Model, it would be useful to include prison specific factors as well. As demonstrated in the conceptual review, there are additional risk factors for self-harm, such as bullying, that one must take into account for the prison population. Since data for prison specific factors are currently lacking (Bartlett, Frater, & Hyde, 2018), one potential way forward is to conduct a qualitative study to determine which prison specific factors are the most important to incorporate into the IMV model and then test the adapted model (prospectively as well as longitudinally) with the key prison specific factors included. While we were collecting the data for our study, we noticed that many prisoners were eager to discuss their own experiences, share what they have observed, and offer up what they thought contributed to the rise of self-harm in correctional environments. In fact, some were quite disappointed that there were no qualitative questions in our study, and others even believed that quantitative measures would not capture the full picture. Consequently, it would be very interesting to conduct a qualitative study on self-harm in prisoners. However, an important tip to bear in mind is to check for the latest version of the IMV model before testing it and/or adding any factors to it. This was unfortunately a mistake I made with the factor of resilience as I did not realise the developer published a new version of the IMV model in 2018 that had resilience in it (Wetherall et al., 2018). Though in the end, I was glad to discover that my ideas were in line with the developer's.

Another potential avenue for future research is to examine how individuals who repetitively engage in self-harm differ from those who had a single episode of self-harm on the IMV Model's factors. After all, research has shown that those in the former group are at higher risk of suicide than those in the latter group (Zahl &

Hawton, 2004). Nevertheless, before any of the above ideas are executed, the current study needs to first be replicated with a larger sample size looking at current self-harm ideation and behaviour.

Conclusion

This was a challenging and ambitious research project – not only was it difficult to distil all of the theories/models of self-harm and suicide for the conceptual review, but conducting the empirical study was also exigent. However, despite all the obstacles, I am proud of what we were able to achieve in a short amount of time and I learned a lot about the prison population. More importantly, although this study had several weaknesses, I do hope that our findings can not only advance the field, but also help inform clinical practice and research in prisons.

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Appendices

Appendix A

Cambridge East Research Ethics Committee Favourable Opinion Letters

23 July 2018

Sharlene Andrew
University College London
Research Department of Clinical, Educational and Health Psychology
119 Torrington Place, London
WC1E 7HB

Dear Sharlene Andrew

Study title:	Risk factors for suicide ideation in transferred prisoners: investigating perceived entrapment and goal management in the context of the Integrated Motivational-Volitional (IMV) Model
REC reference:	16/EE/0360
Amendment number:	1
Amendment date:	07 February 2018
IRAS project ID:	199539

The above amendment was reviewed by the Sub-Committee in correspondence.

Ethical opinion

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

The sub-committee agreed the amendment did not present any ethical issues.

Approved documents

The documents reviewed and approved at the meeting were:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Copies of advertisement materials for research participants [Recruitment Poster.docx]	1	13 July 2018
Notice of Substantial Amendment (non-CTIMP)	1	07 February 2018
Other [REDACTED]+Deputy+Governor+Approval+Email]		11 April 2018
Other [JarrodCabourne_CV.docx.doc]		18 April 2018
Other [RachaelMiller_CV.docx.doc]		18 April 2018
Participant consent form [Revised+Participant+Consent+Form.docx.doc]	2.0	28 March 2018

Participant information sheet (PIS) [Revised+Participant+Information+Sheet+(PIS).docx.doc]	2.0	28 March 2018
Participant information sheet (PIS) [Track+changes+for+Participant+Information+Sheet.docx.doc]	2.0	28 March 2018
Research protocol or project proposal [Revised+Study+Protocol+v2.docx.doc]	2.0	28 March 2018
Track+changes+for+Consent+Form.docx	2.0	28 March 2018
FaithSchombs_YuenShih_CV		

Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

Working with NHS Care Organisations

Sponsors should ensure that they notify the R&D office for the relevant NHS care organisation of this amendment in line with the terms detailed in the categorisation email issued by the lead nation for the study.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

We are pleased to welcome researchers and R & D staff at our Research Ethics Committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

16/EE/0360: Please quote this number on all correspondence
--

Yours sincerely



Dr Alan Lamont
Chair

E-mail: 

Enclosures: List of names and professions of members who took part in the review

Copy to: Ms Jenise Davidson, University College London (UCL)
Ms Sharlene Andrew



Health Research Authority

East of England - Cambridge East Research Ethics Committee

Attendance at Sub-Committee of the REC meeting

Committee Members:

<i>Name</i>	<i>Profession</i>	<i>Present</i>
Dr Alan Calverd	Scientific Consultant	Yes
Dr Alan Lamont (Chair)	Retired Consultant Oncologist	Yes

Also in attendance:

<i>Name</i>	<i>Position (or reason for attending)</i>
Mr Adam Garretty	REC Assistant

13 February 2019

Sharlene Andrew
University College London
Research Department of Clinical, Educational and Health Psychology
119 Torrington Place, London
WC1E 7HB

Dear Sharlene Andrew

Study title:	Risk factors for suicide ideation in transferred prisoners: investigating perceived entrapment and goal management in the context of the Integrated Motivational-Volitional (IMV) Model
REC reference:	16/EE/0360
Amendment number:	2
Amendment date:	15 January 2019
IRAS project ID:	199539

The above amendment was reviewed by the Sub-Committee in correspondence.

Ethical opinion

The members of the Committee taking part in the review gave a favourable ethical opinion of the amendment on the basis described in the notice of amendment form and supporting documentation.

The subcommittee agreed the amendment did not present any ethical issues.

Approved documents

The documents reviewed and approved at the meeting were:

<i>Document</i>	<i>Version</i>	<i>Date</i>
Notice of Substantial Amendment (non-CTIMP) [AmendmentForm_FINAL VERSION FOR AMENDMENT #2.pdf]	2	15 January 2019
Other [NOMS approval - message from Rachael Miller 30.01.2019.msg]		
Participant information sheet (PIS) [Revised Participant Information Sheet (PIS) for Amendment #2.docx]		
Research protocol or project proposal [Protocol Changes.docx]	1	15 January 2019
Research protocol or project proposal [Study Protocol v3]	3	01 February 2019

Membership of the Committee

The members of the Committee who took part in the review are listed on the attached sheet.

Working with NHS Care Organisations

Sponsors should ensure that they notify the R&D office for the relevant NHS care organisation of this amendment in line with the terms detailed in the categorisation email issued by the lead nation for the study.

Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

We are pleased to welcome researchers and R & D staff at our Research Ethics Committee members' training days – see details at <http://www.hra.nhs.uk/hra-training/>

16/EE/0360: Please quote this number on all correspondence

Yours sincerely

[Redacted signature]

**Dr Alan Lamont
Chair**

E-mail: [Redacted email address]

Enclosures: List of names and professions of members who took part in the review

*Copy to: Ms Jenise Davidson, University College London (UCL)
Ms Sharlene Andrew*



Health Research Authority

East of England - Cambridge East Research Ethics Committee

Attendance at Sub-Committee of the REC meeting

Committee Members:

<i>Name</i>	<i>Profession</i>	<i>Present</i>
Dr Philip Bedford	Retired Study Responsible Scientist	Yes
Dr Alan Lamont (Chair)	Retired Consultant Oncologist	Yes

Also in attendance:

<i>Name</i>	<i>Position (or reason for attending)</i>
Mr Adam Garretty	REC Assistant

Appendix B

National Offender Management Service (NOMS) Approval Correspondences

4th October 2018

Ref: 2018-311

Researcher: Dr Vyv Huddy,
University College London

Dear Dr Huddy,

Research Title: Test of the integrated motivational-Volitional model in a prison sample: examining predictors of suicide ideation and self-harm in prisoners

In response to your request for approval for the above research project, I am pleased to grant approval for this to go ahead in [REDACTED]. This approval is sent on behalf of the London Cluster Lead Psychologist, Julie Aspin, subject to the conditions outlined below.

Conditions:

- Compliance with all security and safety requirements e.g. opening or updating ACCT documents as necessary following interaction with the participants.
- Compliance with the requirements of General Data Protection Regulation legislation.
- Informing and updating the approving body promptly of any changes made to the planned methodology.
- It being made clear to participants verbally and in writing up to what point they may withdraw from the research, the mechanism by which to do this and that this will not have an adverse impact on them (as has already been outlined in the proposal).
- As detailed in the email from the national research committee, once the research is finished, the researcher should complete the attached research summary document for HMPPS (approximately three pages; maximum of five pages) which (i) summaries the research aims and approach, (ii) highlights the key findings, and (iii) sets out the implications for HMPPS decision-makers. The research summary should use language that an educated, but not research-trained person, would understand. It should be concise, well organised and self-contained. The conclusions should be impartial and adequately supported by the research findings. It should be submitted to the NRC.

Provision of the research summary is essential if the research is to be of real use to HMPPS. The form should be completed and submitted once the research project has ended (ideally within one month of the end date).

- If you intend to publish the findings, you are required to seek permission via the Cluster Lead Psychologist (LTVPS@noms.gsi.gov.uk), the Governor of [REDACTED] and the National Research Committee (national.research@noms.gsi.gov.uk), once the findings are finalised.

Yours Sincerely

Elizabeth Hill, C.Psychol, AFBPsS
Chartered and Registered Forensic Psychologist
HMPPS London Psychology Services (based at [REDACTED])

By email – no hard copy to follow

cc: HMPPS National Research Committee



RE: Seeking NOMS approval: (IRAS 199539). Examining predictors of self-harm ideation in prisoners.

Heredge, Elizabeth [HMPS] [REDACTED]
on behalf of
National Research [NOMS] [REDACTED]

Tue 1/22/2019 3:42 PM

To: Schombs, Faith [REDACTED]
Hi Faith,

Thank you for your email.

I can approve your request to extend to all prisoners at [REDACTED] – you have justified why this is required and we are happy with your reasons.

As for your second amendment, the addition of a qualitative element... If a small scale addition, you will have to send us a clear description of what you plan to do, with specific research questions you aim to answer, rationale for adding the qualitative element, and consideration of the demand on resources.

Hope this helps.

With best wishes,

Lizzie



Elizabeth Heredge, on behalf of the NRC
Research Officer
Research & Evaluation | Prison & Probation Analytical Services
10 South Colonnade, Canary Wharf, London, E14 4PU
Find out more on [People Finder](#)

From: Schombs, Faith [mailto:[REDACTED]]
Sent: 13 January 2019 20:54
To: National Research [NOMS] [REDACTED]
Cc: Miller, Rachael [REDACTED] Cabourne, Jarrod [REDACTED]
Subject: Re: Seeking NOMS approval: (IRAS 199539). Examining predictors of self-harm ideation in prisoners.

Dear Richard,

Hope all is well and happy new year!

As our study has progressed, we have encountered a problem with recruitment and we are not getting any participants that are currently self-harming and very few participants that currently have self-harm thoughts/suicidal ideation. After discussing this as a team, we believe that our inclusion criteria of participants needing to be "new" to [REDACTED] (less than 3 months) is acting as a barrier to our recruitment. As such, we were wondering if we could expand our inclusion criteria to include all prisoners at [REDACTED]?

Another amendment we were thinking about was potentially adding a qualitative element to this study which would involve asking participants their thoughts about risk/protective factors for self-harm and suicide ideation in prisons? The reason behind this is because a lot of the participants are

Appendix C

Deputy Governor Approval Email

28/04/2018

Mail [REDACTED]

Fw: Research Confirmation at [REDACTED]

Cabourne, Jarrod

Wed 4/11/2018 5:01 PM

To: Schombs, Faith [REDACTED]; Miller, Rachael [REDACTED]

Cc: Huddy, Vyv [REDACTED]

Dear all,

Good news. After several email chasers and phone calls I finally managed to track down the deputy governor today. She was very apologetic for not getting back to us. I have just sent her my original email again from last month with details of the projects on and you can see her reply below.

In summary, [REDACTED] (Deputy Governor) and [REDACTED] (Governor of Safer Custody) have both confirmed the go ahead for the project at [REDACTED].

[REDACTED]

Regards, Jarrod

Dr Jarrod Cabourne

Clinical Tutor

Doctorate in Clinical Psychology

Research Department of Clinical, Educational and Health Psychology University College London, WC1E 6BT

Website: <http://www.ucl.ac.uk/clinical-health-psychology>

[REDACTED]

From: [REDACTED] [HMPS] [REDACTED]

Sent: 11 April 2018 16:48

To: Cabourne, Jarrod

Subject: RE: Research Confirmation at [REDACTED]

As discussed Jarrod, [REDACTED] and I are more than willing for this research to take place on [REDACTED]

Many thanks

[REDACTED]

Appendix D

Demographic Information Sheet

Please circle your answers.

1. What is your age?

18-20 years	26-30 years	36-40 years	46-50 years	56-60 years
21-25 years	31-35 years	41-45 years	51-55 years	61 years or over

2. What is your ethnic classification?

White British	White Other	Black British
Black Caribbean	Black African	Black Other
Indian	Pakistani	Bangladeshi
Mixed Black Caribbean	Asian Other	Chinese
Mixed Black African	Mixed Black Other	Other (please state)...

3. What is your religion?

Buddhist	Christian	Hindu	Jewish
Muslim	Sikh	No religion/Atheist	Other (please state)...

4. How would you describe your sexuality?

Heterosexual/Straight	Gay/Lesbian	Bisexual	Other
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5. Do you have a physical disability?

Yes	No	Please specify (optional)...
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6. Do you have a learning disability?

Yes	No	Please specify (optional)...
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7. Have you ever been diagnosed with a mental health problem?

Yes	No	Please specify (optional)...
-----	----	------------------------------

8. What is your current status?

Remanded/on trial	Convicted/un-sentenced	Sentenced
License recall	Immigration detainee	Other...

9. What is your most recent offence?

Violence (e.g. murder, ABH, GBH, robbery)
Sexual (e.g. rape, indecent assault)
Drugs (e.g. supply, importation, possession)
Dishonesty (e.g. theft, burglary, fraud, robbery)
Other (please state)...

10. How long is your sentence?

Not convicted	Convicted not sentenced
_____ weeks, _____ months, _____ years	Life
IPP	EPP

11. How long have you been in prison for under your current sentence?

_____ days/weeks/months/years

12. How long have you already been in [REDACTED]?

_____ days/weeks/months/years

13. How many times have you been to prison? _____



PARTICIPANT INFORMATION SHEET FOR [REDACTED]
PRISONERS

UCL Research Ethics Committee Reference: 16/EE/0360

YOU WILL BE GIVEN A COPY OF THIS INFORMATION SHEET

Title of Study: Exploring factors linked to self-harm and suicidal ideation in prisons

Department: UCL Research Department of Clinical, Educational and Health Psychology

Student Researchers: Yuen Shih and Rachael Miller
Research Department of Clinical, Educational and Health Psychology
University College London, Gower Street, London, WC1E 6BT

You are being invited to take part in a research study. This information sheet explains why the research is being done and what it will involve for you. **Before you decide, it is important you take time to carefully read the information below to understand why the research is being done and what taking part will involve.** If anything is unclear, or if you would like more information, please ask. Please take your time to decide whether or not you wish to take part. Thank you for reading this.

The study will be carried out by Yuen Shih and Rachael Miller (student researchers). It will be submitted as their theses, which is part of their Doctorate in Clinical Psychology, a postgraduate degree at University College London.

What is the study about?

As you may be aware, self-harm and suicide is a large problem in U.K. prisons. Since 2012 more people in prisons have been harming themselves or dying by suicide. As such...

- We would like to learn more about what makes some prisoners more likely to have thoughts of suicide and self-harm than other prisoners.
- We would also like to learn more about what makes some prisoners more likely to harm themselves than other prisoners.
- We hope that the information we collect will help us find ways to improve prisoner safety and support.

Why have I been chosen?

- You have been invited to take part because you are a male prisoner at [REDACTED] and do not have a sexual offence as your most recent offence.
- You have adequate understanding of spoken and/or written English.
- You are feeling calm enough to sit with one of the researchers for up to one hour

- All prisoners that meet the above criteria will be asked to take part in this study.

Do I have to take part?

- You do not have to take part if you do not want to.
- Taking part in this study is voluntary.
- You are free to change your mind and decide not to take part at any time without giving a reason.
- If you do decide to take part in this research study, you will be given this information sheet to keep and be asked to sign a consent form.
- If you do decide to take part in this research study, this will not affect any aspect of your care.
- If you decide not to take part or if you leave the study before it is over, this will not affect your care, there will be no penalty or loss of benefits.
- If you decide to leave the study after agreeing to take part, you will be asked what you wish to happen to the information you have given up to that point.

What will happen if I take part?

- If you agree to take part, the student researchers will arrange a time to meet with you privately where they will ask you to complete some questionnaires.
- Before to completing the questionnaires, you will be asked to sign a consent form.
- The questionnaires will ask you about: Your demographics (e.g. age), current legal status, mood, past and current acts or thoughts about harming yourself, past and current acts or thoughts of suicide, social support, thinking styles, goals, impulsivity, exposure to suicidal behaviour, fearlessness about death, how much you can tolerate discomfort, and resilience.
- You can either complete the paper and pen-based questionnaires on your own or the student researcher(s) can read the questionnaires to you.
- The whole process should take no more than 1 hour to finish.
- This is a one-time meeting and you will not be contacted for future research.

What do you do with the information I give and where will it be saved?

- All information collected from you during the research will be kept confidential.
- Confidentiality is limited and if you tell the researcher(s) something that makes her think you or someone else is in danger of significant harm, they may have to discuss this with someone else (e.g. prison staff) for safety reasons.
- All questionnaires will be typed up and made anonymous (that is, your name or any details which could identify you will be changed or deleted) by the student researchers.
- Your responses to the questionnaires will be compared with others and written up into a report.
- You will not be able to be identified in any reports or publications that are written.
- We will store the anonymous questionnaire information in a locked location for 10 years after publishing the results.

What are the benefits of taking part?

- There are no direct or immediate benefits to you, but you may find it helpful to talk about your experiences.
- We hope the research will help to improve prisoner safety and support in the future.

What are the risks of taking part?

- It is possible that answering questions about harming yourself, suicide and your mood could be upsetting. If this happens, you can ask the researcher(s) to take a break or stop the questioning at any time. You do not have to answer any questions that you do not feel comfortable answering.
- **If you tell the researcher(s) something that leads her to think that you or someone else is at risk of significant harm, they may have to break confidentiality and discuss this with someone else (e.g. prison staff) to ensure safety.**

What if there is a problem?

- If you wish to complain or have any worries about how you have been approached or treated by staff to do with this research, there are ways you can make a complaint. If you do you wish to complain, please contact the academic supervisor or the prison healthcare team using the details given below.
- In the unlikely event that taking part in this study harms you, compensation may be available. If you think the harm is the result of the sponsor's (University College London) or the prison service's carelessness, then you may be able to claim compensation. After discussing with the student researcher(s), please make the claim in writing to Dr Vyv Huddy who is the academic supervisor for the research and is based at UCL.
- If you feel that your complaint has not been handled how you would like it to be, you can contact the Chair of the UCL Research Ethics Committee at ethics@ucl.ac.uk

What will happen to the results of the research study?

- The results of this study will be written up as part of the student researchers' doctoral thesis that will be submitted in 2019. It is also intended that the results will be published in a scientific journal in the future. You will not be identifiable in either of these.
- People that take part in the study can request a written summary of the results of the study by contacting the student researchers if they wish.
- The data collected during the project might be used for additional or further research.

Data Protection Privacy Notice

University College London (UCL) control how your data is protected for this study. The UCL Data Protection Office manages UCL activities that involve the processing of personal data and can be contacted at data-protection@ucl.ac.uk. UCL's Data Protection Officer is Lee Shailer and he can also be contacted at data-protection@ucl.ac.uk.

Your personal data will be processed in the ways we have written about in this information sheet. By giving your consent, we can process your data legally. You can provide your consent for the use of your personal data in this project by completing the consent form that has been provided to you.

Your personal data will be processed so long as it is needed for the research project. We will anonymise the personal data you provide and will try to minimise the processing of personal data wherever possible.

If you are concerned about how your personal data is being processed, please contact UCL first, at data-protection@ucl.ac.uk. If you have done this and are still not happy, you can contact the Information Commissioner's Office (ICO).

Contact details, and details of your rights, are available on the ICO website at: <https://ico.org.uk/for-organisations/data-protection-reform/overview-of-the-gdpr/individuals-rights/>

Funding

The UCL Research Department of Clinical, Educational and Health Psychology is funding this research.

Contact for further information

If you would like any more information you can contact:

Yuen Shih
Research Department of Clinical, Educational and Health Psychology
University College London
Gower Street
London WC1E6BT

or

Rachael Miller
Research Department of Clinical, Educational and Health Psychology
University College London
Gower Street
London WC1E6BT

Concerns during the study

If you have any concerns or complaints about the study, please contact:

1) Dr Vyv Huddy, the chief investigator & academic supervisor, at:
Research Department of Clinical, Educational and Health Psychology
University College London
Gower Street
London WC1E6BT

2) Submit an application to speak to a member of healthcare at the prison

Thank you for reading to the end and for considering to take part in this research study!



Study Number: 199539

Participant Identification Number for this trial:

CONSENT FORM FOR PRISONERS IN RESEARCH STUDIES

Title of Study: Exploring factors linked to self-harm and suicidal ideation in prisoners

Department: UCL Research Department of Clinical, Educational and Health Psychology

Student Researchers: Yuen Shih and Rachael Miller,
Research Department of Clinical, Educational and Health
Psychology
University College London, Gower Street, London, WC1E
6BT

Academic Supervisor: Dr Vyv Huddy
Research Department of Clinical, Educational and Health
Psychology
University College London, Gower Street, London, WC1E
6BT

UCL Data Protection Officer: Lee Shailer

This study has been approved by the UCL Research Ethics Committee:
Reference 16/EE/0360

This study has also been approved by HM Prison & Probation Service:
Reference 2018-311

Please complete this form after you have read the Participant Information Sheet and/or listened to an explanation about the research.

Thank you for considering to take part in this research. The person organising the research must explain the project to you before you agree to take part. If you have any questions about the Information Sheet or explanation already given to you, please ask the researcher before you decide whether to join in. You will be given a copy of this consent form to keep.

I confirm that by initialling the boxes below I understand that I will be consenting to that part of the study. I understand that any boxes that are not initialled mean that I DO NOT consent to that part of the

study. I understand that by not giving consent for any one part that it may be decided that I am not able to take part in the study.

I CONFIRM THAT:		Please Initial Box
1	I confirm that I have read and understood the Information Sheet for the above study. I have had an opportunity to think about the information and what will be expected of me. I have also had the opportunity to ask questions and I am satisfied with the answers.	
2	I have had enough time to decide if I want to be included in the study or not.	
3	I understand that taking part in this study is voluntary and that I can decide not to take part at any time without giving a reason, and without my care or legal rights being affected.	
4	I understand that I will be able to withdraw the information I give up to 4 weeks after taking part.	
5	I understand that if I decide I no longer want to take part in the study, any personal information I have given will be deleted unless I agree otherwise.	
6	I understand that all information collected and used for research or publication will remain anonymous (I cannot be identified).	
7	I consent to my personal information being used for the purposes explained to me. This includes demographic information (e.g. age) and answers to questionnaires. I understand that this information will be protected following legal data protection guidance. I understand that all personal information will remain confidential and that all efforts will be made to ensure I cannot be identified.	
8	I understand that confidentiality will be maintained as far as possible, unless the researchers hear/see anything that makes the researchers worried that someone (either myself or others) might be in danger of harm, in which case the researchers might have to let the relevant agencies (prison staff) know about this so that I/others can be kept safe.	
9	I understand that my data gathered in this study will be stored anonymously and securely. It will not be possible to identify me in any publications.	
10	I understand that the data will not be made available to any commercial organisation but is only the responsibility of the researchers carrying out this study.	
11	I understand the potential risks of participating and the support that will be available to me should I become distressed while taking part in the research.	
12	I understand the indirect benefits of taking part in this research.	
13	I understand that I will not receive any money from this study or from any possible outcome it may result in in the future.	

Appendix G

Briefing/Debriefing for Administering Measures Packet

BEGINNING

- Introductions
- Ask if they have any questions about the PIS or any questions before we begin
 - Maybe go over PIS with them again
- The measure packet you're about to fill out is quite long so please let us know if you need to take a break from filling the measures out.
- From the PIS you'll be aware what the study is about and the type of questions you will be asked about – suicide/self-harm. So please also let us know at any time if you want to stop or if you're feeling distressed.
- We recognize you may answer similar questions on the different measures, but unfortunately we are not able to take any questions out as this affects how accurate the measures are
- We are more than happy to read the questions/instructions out loud to you and write down your answers. Would you like us to do this? Give them the option! Be attentive, observe if they're getting tired and then take over
- Please let us know if there is anything you do not understand.
- Limits to Confidentiality: As explained in the PIS, everything you say is confidential but there may be instances where we need to share the information you provide. For instance, if we are concerned about your safety or the safety of someone else, if you commit any behaviours against prison rules, tell us any illegal acts that you have not told anyone before, and tell us anything that makes us concerned about terrorism/radicalization/security issues (mercury reporting). These are the same safety measures every prison follows.
- Any questions before we begin?

DURING

- If participant gives same ratings for each question say: A person is seldom alike with respect to every item and perhaps you might wish to reconsider some of the ratings.

END/DEBRIEF

- Look over their answers when done to make sure got everything!
- Quick look over really risky questions i.e. DHS, Beck questions about having a plan etc.
- I know there were a lot of doom and gloom questions, how are you feeling?
- If you are having thoughts of suicide or self-harm, please contact the mental health team and/or the prison listening service/scheme. (Signpost)
- Answer any and all questions they have about the study
- Thank and inform them that their answers will be fed back to the prison to show them they're helping

Appendix H

Joint Research Statement

This project was conducted as part of a joint thesis with another UCL Trainee Clinical Psychologist, Ms Rachael Miller. Both myself and Rachael independently developed our own research questions/aims, hypotheses, and selected our own questionnaires/measures. We then jointly applied for ethical approval/permission to conduct this research from the necessary governing bodies, devised the procedure for data collection, designed the questionnaire/measure packet, consulted service users/prison health care representatives, and liaised with prison staff. Data collection was also carried out jointly – both myself and Rachael were equally involved in the recruitment, obtaining consent, testing, and follow-up of participants. Though to obtain more participants and maximise our time at the prison, we individually tested one participant at a time. The scoring of questionnaire/measure packets was evenly distributed between myself and Rachael. As for inputting the data into SPSS, the two of us and a UCL undergraduate student worked on this together. However, once all the data was collected, scored, and entered, Rachael and I then analysed our own data and wrote up our own thesis independently.

Appendix I

Statistical Comparisons Between the ≤ 90 and >91 Days Groups

Bonferroni-adjusted alpha level of 0.006 (0.05/9)

Groups: Those who have been there for less than 90 days versus those who have been there for more than 91 days.

For Entrapment:

- Normality assumption not met but homogeneity of variances assumption was met so both parametric and non-parametric tests were conducted
- An independent samples t-test found no evidence of a significant difference between the group means on entrapment ($t(104) = -2.404, p = 0.018, n.s.$).
- A Mann-Whitney U test found no evidence of a significant difference between the groups on entrapment ($U = 397.50, p = 0.021, n.s.$).

For Rumination/Response Style:

- Normality assumption not met but homogeneity of variances assumption was met so both parametric and non-parametric tests were conducted
- An independent samples t-test found no evidence of a significant difference between the group means on response style ($t(104) = -1.144, p = 0.255, n.s.$).
- A Mann-Whitney U test found no evidence of a significant difference between the groups on response style ($U = 546, p = 0.358, n.s.$).

For Social Support:

- Both normality assumption and homogeneity of variances assumption were met so only a parametric test was conducted

- An independent samples t-test found no evidence of a significant difference between the group means on social support ($t(104) = -1.616, p = 0.109, n.s.$).

For Impulsivity:

- Normality assumption not met but homogeneity of variances assumption was met so both parametric and non-parametric tests were conducted
- An independent samples t-test found no evidence of a significant difference between the group means on impulsivity ($t(104) = -1.788, p = 0.077, n.s.$).
- A Mann-Whitney U test found no evidence of a significant difference between the groups on impulsivity ($U = 484, p = 0.115, n.s.$).

For Fearlessness About Death (FAD):

- Both normality assumption and homogeneity of variances assumption were not met so only a non-parametric test was conducted
- A Mann-Whitney U test found no evidence of a significant difference between the groups on fearlessness about death ($U = 480, p = 0.123, n.s.$).

For Discomfort Intolerance:

- Both normality assumption and homogeneity of variances assumption were met so only a parametric test was conducted
- An independent samples t-test found no evidence of a significant difference between the group means on discomfort intolerance ($t(104) = 0.289, p = 0.773, n.s.$).

For Resilience:

- Both normality assumption and homogeneity of variances assumption were met so only a parametric test was conducted
- An independent samples t-test found no evidence of a significant difference between the group means on resilience ($t(104) = 0.040, p = 0.968, n.s.$).

For Depression:

- Normality assumption not met but homogeneity of variances assumption was met so both parametric and non-parametric tests were conducted
- An independent samples t-test found no evidence of a significant difference between the group means on depression ($t(104) = -1.353, p = 0.179, n.s.$).
- A Mann-Whitney U test found no evidence of a significant difference between the groups on depression ($U = 499, p = 0.175, n.s.$).

For Hopelessness:

- Normality assumption not met but homogeneity of variances assumption was met so both parametric and non-parametric tests were conducted
- An independent samples t-test found no evidence of a significant difference between the group means on hopelessness ($t(104) = -0.477, p = 0.634, n.s.$).
- A Mann-Whitney U test found no evidence of a significant difference between the groups on hopelessness ($U = 607.50, p = 0.728, n.s.$).

Appendix J

Kruskal-Wallis H Test Results

For Perceived Entrapment

- A Kruskal-Wallis H test showed that there was a statistically significant difference in entrapment score between the different groups, $H(2) = 23.00$, $p < .001$, with a mean rank entrapment score of 38.17 for controls, 50.62 for ideators, and 68.66 for enactors.

For Rumination/Response Style

- A Kruskal-Wallis H test showed that there was a statistically significant difference in rumination score between the different groups, $H(2) = 14.98$, $p = .001$, with a mean rank rumination score of 43.09 for controls, 42.85 for ideators, and 66.15 for enactors.

For Social Support

- A Kruskal-Wallis H test showed that there was a statistically significant difference in social support score between the different groups, $H(2) = 24.67$, $p < .001$, with a mean rank social support score of 36.31 for controls, 62.77 for ideators, and 67.10 for enactors.

For Impulsivity

- A Kruskal-Wallis H test showed that there was a statistically significant difference in impulsivity score between the different groups, $H(2) = 18.49$, $p < .001$, with a mean rank impulsivity score of 40.92 for controls, 48.62 for ideators, and 66.61 for enactors.

For Fearlessness About Death (FAD)

- A Kruskal-Wallis H test showed that there was no statistically significant difference in FAD score between the different groups, $H(2) = .59$, $p = .75$.

For Discomfort Intolerance

- A Kruskal-Wallis H test showed that there was no statistically significant difference in discomfort intolerance score between the different groups, $H(2) = 2.40, p = .30$.

For Resilience

- A Kruskal-Wallis H test showed that there was a statistically significant difference in resilience score between the different groups, $H(2) = 16.94, p < .001$, with a mean rank resilience score of 66.99 for controls, 53.92 for ideators, and 40.74 for enactors.

For Depression

- A Kruskal-Wallis H test showed that there was a statistically significant difference in depression score between the different groups, $H(2) = 26.75, p < .001$, with a mean rank depression score of 37.92 for controls, 45.65 for ideators, and 70.23 for enactors.

For Hopelessness

- A Kruskal-Wallis H test showed that there was a statistically significant difference in hopelessness score between the different groups, $H(2) = 18.60, p < .001$, with a mean rank hopelessness score of 39.71 for controls, 52.77 for ideators, and 66.63 for enactors.

Appendix K

Statistical Comparisons Between the Control and Enactor Groups

Bonferroni-adjusted alpha level of 0.006 (0.05/9)

Groups: Controls versus Enactors

For Perceived Entrapment

- Both normality assumption and homogeneity of variances assumption were not met so only a non-parametric test was conducted
- A Mann-Whitney U test found a significant difference between the groups on entrapment ($U = 476.50, p < .001$).

For Rumination/Response Style

- Normality assumption not met but homogeneity of variances assumption was met so both parametric and non-parametric tests were conducted
- An independent samples t-test found a significant difference between the group means on rumination ($t(91) = -3.85, p < .001$).
- A Mann-Whitney U test found a significant difference between the groups on rumination ($U = 613.50, p < .001$).

For Social Support

- Both normality assumption and homogeneity of variances assumption were met so only a parametric test was conducted
- An independent samples t-test found a significant difference between the group means on social support ($t(91) = -5.09, p < .001$).

For Impulsivity

- Both normality assumption and homogeneity of variances assumption were not met so only a non-parametric test was conducted
- A Mann-Whitney U test found a significant difference between the groups on impulsivity ($U = 557, p < .001$).

For Fearlessness About Death

- Both normality assumption and homogeneity of variances assumption were met so only a parametric test was conducted
- An independent samples t-test found no evidence of a significant difference between the group means on fearlessness about death ($t(91) = -.06, p = .956, n.s.$).

For Discomfort Intolerance

- Both normality assumption and homogeneity of variances assumption were met so only a parametric test was conducted
- An independent samples t-test found no evidence of a significant difference between the group means on discomfort intolerance ($t(91) = .17, p = .869, n.s.$).

For Resilience

- Both normality assumption and homogeneity of variances assumption were met so only a parametric test was conducted
- An independent samples t-test found a significant difference between the group means on resilience ($t(91) = 3.89, p < .001$).

For Depression

- Normality assumption not met but homogeneity of variances assumption was met so both parametric and non-parametric tests were conducted

- An independent samples t-test found a significant difference between the group means on depression ($t(91) = -5.99, p < .001$).
- A Mann-Whitney U test found a significant difference between the groups on depression ($U = 419, p < .001$).

For Hopelessness

- Both normality assumption and homogeneity of variances assumption were not met so only a non-parametric test was conducted
- A Mann-Whitney U test found a significant difference between the groups on hopelessness ($U = 527.50, p < .001$).