Predicting dynamic risk factors for suicide ideation in prisoners: perceived entrapment and goal management in the context of the 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

This thesis focuses on management of suicide and self-harm in prisoners. The literature review (Part 1) is a narrative systematic review of the impact of psychological interventions on suicide and self-harm outcomes applied with offenders in secure correctional facilities. The review highlights the lack of high quality studies in this area and the vast range of different outcome measures used to assess risk of self-harm and suicide. Evaluation of study quality lends itself to a comprehensive discussion of recommendations for future research.

The empirical research paper (Part 2) is part of a joint research project (Schombs, unpublished thesis). The research describes a cross-sectional questionnaire based study aiming to further investigate the pathway between feelings of entrapment (internal and external) and suicide ideation suggested by the Integrated Motivational-Volitional model (IMV; O'Connor, 2011), within a prison population. It also aims to further our understanding of mechanisms that may contribute to an individual's perception of entrapment, specifically goal adjustment and goal perception (e.g. how important a goal is or how ambivalent someone is about setting and achieving goals). Results of this study offer further insight into the relationship between entrapment and suicide, and more specifically, adds to previous findings of differential effects of internal and external entrapment. Discussion expands on the concept of entrapment and the meaning of this for prisoners.

Part 3, the Critical Appraisal, discusses the challenges and barriers faced in carrying out research with prison populations and the important factors and considerations highlighted during data collection. Finally, clinical implications of the empirical study are discussed within the context of current UK practices in the management of suicide and self-harm in prisons.

Impact Statement

Improvement in the area of prisoner safety in terms of suicide and self-harm has wide implications and the impact of this research can be discussed as spanning three different areas.

Research

This study highlights gaps that future research can address, particularly in improving the quality of psychological intervention studies for self-harm and suicide in prisons, and the need for use of standardised outcome measures. The prison setting introduces challenges that can affect the scientific rigour of studies and suggestions are made for how this can be addressed, for example, through multi-site research, and standardised treatment for control groups.

This research also highlights the importance of considering how entrapment is conceptualised and thus measured within a prison setting, given the restrictive context of the setting. Future research may develop a prison-specific measure of entrapment or use qualitative methods to gain a richer understanding of the meaning of entrapment for prison populations. Results support that there is an important role for entrapment and poor social support in relation to suicide ideation in prisoners and therefore this study adds to a growing literature base for this population. Very little research has investigated prisoner goals and goal adjustment, and this study has highlighted the need for greater attention in this area.

Clinical

This research has shown that psychological interventions in prisons can give some positive results in improving suicide and self-harm outcomes, as well as related psychological factors including depression, anxiety, problem solving deficits and hopelessness. Prison clinicians and/or staff should consider the routine application of

Cognitive Behaviour Therapy (CBT) informed interventions, and other therapies, for at-risk prisoners. Further, feelings of entrapment and poor social support are modifiable factors and therefore can be targeted, where indicated, for those at risk of suicide. Measures of entrapment could be administered by reception staff to new arrivals as part of prevention strategies. Support is offered for the current management practices in prisons i.e. the nationally used Assessment, Care in Custody and Teamwork framework (ACCT). There is also some preliminary evidence to support prisoners to identify and engage with new goals and explore their perceptions of their goals. As an institution, a prison can consider environmental factors that promote social support and limit feelings of entrapment. On a wider scale, these ideas could also be incorporated into policies and training.

Societal

This current research provides insight into the lack of psychological interventions available to prisoners experiencing thoughts of suicide and/or self-harm. Mental health, substance misuse, trauma and other psychological problems have been linked to offence behaviour. Improved knowledge about identifying and treating these issues not only has positive implications for offenders and their families, but also improves the safety of the public. Reductions in suicide and self-harm in prisons would in-turn impact on demands on prison resources and levels of staff burnout, which also has implications for public spending.

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Part 1: Literature Review

1.1 Abstract

Aim: To review psychological interventions for prisoners where the impact of these interventions on suicide and self-harm related outcomes have been indicated. A further aim is to review the methods of measurement used.

Method: An electronic search was conducted using PsycINFO, EMBASE and CINAHL Plus databases from 2000 to January 2019. Reference lists of relevant papers were also examined.

Results: The search identified 2,493 articles, of which 901 were eligible for review, yielding a total of 17 meeting inclusion criteria, including RCT's (n=3) and with control (n=4) and without control pre- to post comparison designs (n=10). Interventions included CBT, social problem solving, DBT, interpersonal therapy, and combined approaches. Interventions that did target suicide and/or self-harm produced promising findings for DBT and CBT in changes in suicide and self-harm behaviours. In studies where suicide and self-harm outcomes were not the primary target, positive results were found for related factors (e.g. hopelessness), but some studies found non-significant changes in suicide and self-harm behaviours. Overall, 11 studies found improvements were significant ($p<0.05$). Quality of studies is addressed, and several methodological limitations were identified that impacted on the studies potential for finding significant results.

Conclusions: A small number of studies, for a large number of interventions (with a lack of consistent outcome measures being used for suicide and self-harm) were identified, therefore making it difficult to present firm conclusions. In general, psychological interventions produced positive effects in targeting self-harm/suicide

behaviours and related psychological outcomes. Recommendations for future research are discussed.

1.2 Introduction

Prisoners have a substantially higher rate of dying by suicide than the general population (NICE, 2018). In 2016, 122 people died by suicide in custody in England and Wales, and there is a continued increase in reported acts of self-harm, with 46,000 incidents documented between March 2017 and March 2018 (Ministry of Justice, 2018). It is likely that the high prevalence of known risk factors in this population plays a part, with substance misuse, psychiatric diagnosis, history of attempted suicide or self-harm, and criminal history being over-represented in prisoners (Cramer, Wechsler, Miller & Yenne, 2017; Fazer, Cartwright, Norman-Nott & Hawton, 2008; Fraser, Gatherer & Hayton, 2009; Rivlin, Hawton, Marzano & Fazel, 2013). Institutional factors, such as high population turnover, overcrowding, single cell occupation and bullying, have also been shown to increase suicide and self-harm behaviour (Baggio et al., 2018; Marzano et al., 2016; Rivlin et al., 2013). Prisoners are protected by the Universal Declaration of Human Rights (UDHR, UN General Assembly, 1948; 2015), and by law should be kept in a safe and secure environment with appropriate clinical care, including access to treatment for suicide prevention (World Psychiatric Association, 2017). Therefore, assessment and management of suicide and self-harm is a high priority for prison services (Her Majesties Prison and Probation Service, HMPPS, 2019). Suicide and self-harm behaviours are also known to negatively impact on the distribution of resources and on prison staff (Smith, 2016), with staff reporting feeling untrained and unskilled to manage these issues (Marzano, Adler & Ciclitira, 2015).

1.2.1 Suicide and self-harm

Suicide and self-harm have been defined as the intentional infliction of injury with the aim of death, and when an individual purposefully injures themselves *without* the intention of ending their life, respectively (Snow, 2006). These constructs can therefore be thought to differ with regards to underlying intentions and motivation factors (Lohner & Konrad, 2006). However, definitions within the literature vary. HMPPS (2011) defines self-harm as an act whereby a prisoner harms him/herself deliberately, irrespective of intent, method or severity, and self-harm and suicide are distinguished only by how fatal the act is. Further, the HMPPS definition of self-harm incudes a range of behaviours, such as use of ligatures, burning, poisoning, scratching and cutting. This is contradictory to some community research that has defined self-harm on the basis of outcome, i.e. requiring hospital admission (Gunnell et al., 2008; O'Connor, O'Carroll, Ryan & Smyth, 2012). Lack of a clear definition is a limitation of research in this area (Klonsky, May & Saffer, 2016) and creates difficulties in the identification and synthesis of evidence. Furthermore, these behaviours have been shown to be closely linked, as a history of self-harm is the most robust predictor of death by suicide (Joiner et al., 2005), and there is an eight-fold increase in death by suicide in prisoners with a history of self-harm compared to those who have not engaged in self-harm (Fazel et al., 2008).

Due to the overlaps in definitions, difficulties establishing intent, and reported links between suicide and self-harm, this review focuses on studies measuring the impact of interventions on suicide and self-harm behaviours.

1.2.2 Secure correctional facilities

There are a variety of secure correctional facilities that are used to provide closed custody to individuals convicted by the criminal justice system. Prisons are the predominant focus of this review, where individuals are held in long-term

confinement in lawful detention (McDougall, Cohen, Swaray & Perry, 2003). Other settings including Youth Offender Institutions (YOI or the equivalent Juvenile Rehabilitation Administrations in the US) accommodate young people aged 15-21 and are often the largest facility for youth offenders. Other facilities vary between country, such as Community Corrections facilities, which provide alternative holding to prisons, and Secure Children's Homes (SCH) that are locked facilities that provide accommodation and care to children sentenced by criminal courts or remanded to secure accommodation. All settings share characteristically secured, locked environments that restrict an individual's liberty due to crimes committed and for protection of the public.

1.2.3 Interventions for suicide and self-harm

There is a growing evidence base for therapeutic interventions for suicide and self-harm in other, non-forensic populations. A large meta-analysis found reduced incidents of suicide attempts and self-harm in a follow up period following various interventions, relative to control groups (28% and 33% comparatively, Ougrin et al., 2015). The largest effect sizes across nineteen Randomised Controlled Trials (RCTs) for self-harming adolescents were found for cognitive-behavioural therapy (CBT), dialectical behaviour therapy (DBT), and mentalisation-based therapy (MBT). In an RCT of ninety adolescents and adults who had recently self-harmed, those receiving CBT treatment in addition to treatment as usual (TAU) showed greater reductions in self-harm and cognitive indicators of suicide, as well as anxiety and depression symptoms (Slee, Garnefski, van der Leeden, Arensman & Spinhoven, 2008). The positive effects of CBT in reducing self-harm behaviour have been found to improve when delivered one-to-one compared to groups, and when compared with TAU rather than an alternative active therapy (Tarrier, Taylor & Gooding, 2008).

However, other studies have found that there have been too few trials of many different interventions to make conclusions about a specific type or nature of intervention that is most effective (Hawton et al., 2016; Hetrick, Robinson, Spittal & Carter, 2016). Further, the limitations to drawing reference from the wider literature is that no clear, generalisable conclusions can be made for prisoners.

There has been a large amount of research into identifying risk factors of suicide and self-harm in facilities such as prisons that can guide prevention strategies and interventions (e.g. Fazel, et al., 2008; Hawton et al., 2014; May & Klonsky, 2016). There is evidence for a range of psychosocial factors, such as hopelessness, depression, anxiety, aggression, impulsivity, low self-esteem, lack of activity, low levels of perceived autonomy and low social support (Favril, Vander Laenen, Vandeviver & Audenaert, 2017; Fliege, Lee, Grimm & Klapp, 2009; Rivlin et al., 2013). Further, linking theory and practice is an approach that is widely advocated in providing evidence-based interventions, thus existing models and theories into suicide and self-harm have also been used as a basis for exploratory research into risk factors. This has increased interest in suicide research into concepts such as thwarted belongingness and perceived burdensomeness (Joiner, 2005), perceptions of entrapment (Williams, 2001), and integration of motivational and volitional factors (O'Connor, 2011). In self-harm research this includes interest in research into negative and positive reinforcement (Nock & Prinstein, 2004), experiential avoidance (Chapman, Gratz & Brown, 2006) and developmental trauma (Lewis, 1990).

Today, a large influence on the management of suicide and self-harm in prisons was the introduction of Assessment, Care in Custody and Teamwork (ACCT) in 2005, which replaced the F2052SH care plan. Prisoners at risk of suicide and self-

harm are monitored via the ACCT process to receive assessment and care planning (HMPPS, 2011). Regular review meetings are held with the prisoner involving, where possible, multidisciplinary staff with the aim of clarifying areas of concern and providing views as to how these can best be resolved (Shaw & Turnbull, 2006). Studies have found a significant reduction in the number of suicide and self-harm acts in prisons following the introduction of ACCT (e.g. Shaw & Humber, 2007).

Existing reviews into interventions for suicide and self-harm with forensic populations have highlighted promising findings for management strategies such as ACCT, intake screening at reception, ongoing assessment, effective communication strategies, determining appropriate housing for suicidal prisoners, peer support programmes, staff training, and some evidence for CBT and DBT (Barker, Kõlves & De Leo, 2014; Dixon-Gordon, Harrison & Roesch, 2012; Shelton, Bailey & Banfi, 2017; Townsend et al., 2010). There has been greater research attention on non-psychological interventions.

Some have argued that non-psychological approaches for suicide and self-harm in prisoners can have preventative features, but ignore risk factors identified in the literature, such as coping, problem solving and hopelessness (Daniel, 2007). They have argued for the need to develop individual formulations with suicidal prisoners, and interventions that target the specific mechanisms that lead to suicide behaviours (Pratt, 2015), speculated to be either diagnosis-specific or trans-diagnostic mechanisms (e.g. hopelessness).

Furthermore, reviews have focused predominantly on non-prisoner forensic populations, such as forensic hospitals, which introduces great variance in setting characteristics, offender typology, staff training and qualifications, and treatment opportunities and aims. One paper reviewed group interventions for offenders with

mental disorders, and included forensic hospital patients only (Duncan, Nicol, Ager & Dalgleish, 2006). Dixon-Gordon et al. (2012) reviewed a combination of populations, predominantly forensic hospital patients, and included a range of interventions, including medication, prevention programmes and psychological interventions, and also included a review of risk factors. Like many of the other reviews, this review did not include a formal quality instrument to assess included studies but did outline clearly the search strategy and inclusion and exclusion criteria. In planning for this current review, the author came across a Prospero registered study into treatment interventions for self-harm in correctional settings (Baharin, Marceau & Grenyer, 2018; CRD42018093311), again planning to include a range of settings, i.e. forensic hospitals, and different types of intervention, i.e. non-psychological. However, this review is not yet complete and no results have been published.

1.2.4 Focus of the current review

Prisons and other correctional facilities can be seen as an opportunity to identify and treat problems in a population who tend not to seek psychological support. Despite this and the implications for public health, there are no evidence-based psychological interventions routinely available to prisoners at risk of suicide or self-harm (Pratt et al., 2015). More information is needed about the research in this area.

There have been a greater number of psychological interventions for mental disorders, rather than suicide and self-harm specifically, applied with incarcerated individuals (e.g. Johnson & Zlotnick, 2012; Townsend, et al., 2010; Yoon, Slade & Fazel, 2017). Due to the well-established links between psychological factors, i.e. depression and hopelessness, with suicide and self-harm (Beck, Steer, Beck, &

Newman, 1993; Beck, Kovacs & Garrison, 1985), these studies may elucidate further evidence of what psychological approaches can be effective for suicide and self-harm outcomes. In light of this, this review aimed to identify the impact of psychological interventions on suicide and self-harm outcomes in prisoners. As part of this, the review also explored what outcomes have been used to assess for change in suicide and self-harm.

1.3 Method

1.3.1 Design

A narrative systematic design was used for this review. Meta-analytic approaches were not deemed appropriate due to the heterogeneity of study samples, interventions and outcome measures.

1.3.2 Population

Adult (aged 18 to 65 years) and juvenile (aged 12 to 17 years) offenders, both male and female. Individuals in prisons, Youth Offender Institutions (YOI), and other restricted populations in the criminal justice system, were included. Forensic hospital settings, detention centres, and post-release prisoners, or those on parole or residing in therapeutic communities (outside of prison) were excluded.

1.3.3 Interventions

Studies reporting any psychological intervention, individual or group, for individuals meeting the above criteria were included. Pharmacological interventions, suicide prevention programmes, management or strategy interventions at a level outside of the individual were excluded, where a clear psychological intervention was not applied.

1.3.4 Comparators

This review has included all studies of change in one intervention group, as well as studies that have included a comparator, such as a treatment as usual (TAU), waitlist control, or an alternative therapy intervention.

1.3.5 Study design

As the interest in this area of research is growing and there is a dearth of RCTs documented, quasi-experimental studies, observational studies (cohort and case control), and pre- and post-intervention studies were also included.

1.3.6 Outcomes

Any clinical outcome related to suicide and/or self-harm behaviours, including, but not restricted to, ceasing self-harm or suicide behaviours, reduction of self-injurious incidents or suicide behaviours, reduction in reported intent or plans to cause harm were included. Studies where improvements on measures of quality of life, depression, hopelessness and other well-established predictors of suicide and self-harm were also included, where authors had stated they were used as psychological pre-determinants of suicide or self-harm. Outcomes can be reported as primary or secondary outcomes.

1.3.7 Additional parameters

The review is limited to full text articles published in English (or translated version available) since the year 2000, in order to ensure the search identified a suitable number of studies that fit the review question, whilst still being recent enough to add to our current understanding of this area. Grey literature, such as student dissertations, was not included.

Table I: Inclusion/Exclusion criteria

Inclusion	Exclusion
Empirical research	Theoretical/conceptual study or review
Psychological intervention applied	Non-psychological intervention applied, e.g. management strategy, or pharmacological
Participants are offenders in a secure correctional setting	Forensic populations in forensic hospitals, post-release prisoners, probation etc.
Assessing the effectiveness of a psychological intervention	No standardised measures applied to assess change from pre- to post-intervention
Outcome data for either suicide or self-harm measures, primary or secondary outcomes	Outcomes not related to suicide or self-harm

1.3.7 Search Strategy

Preliminary searches and consideration of existing reviews in this area informed the decision to utilise three research databases: PsycINFO (psychology, mental health and behavioural sciences), CINAHL PLUS (nurse and allied health professionals), and EMBASE (biomedical and pharmacological). Databases were searched from 2000 to 27th January 2019. A search of citations and references of relevant papers and other systematic reviews was also conducted to identify additional studies not indexed in the databases.

Search terms covered three areas: population/institution terms (prison*, correctional, incarcerat*), self-harm and suicide terms (self-injurious behaviour, deliberate self-harm*, suicid*) and therapy/intervention terms (intervention*,

treatment*, cognitive behaviour therapy). Full list of search terms is included in *Appendix 1*. Search strings varied slightly according to database and availability of subject/mesh terms.

1.3.8 Quality Assessment

Assessment of the quality of included studies was carried out using the KMET tool (Kmet, Cook & Lee, 2004). This tool was chosen because it evaluates a range of study designs, including observational, cross sectional, pre- post studies and RCTs. The included papers were checked against 14 criteria to assess the inclusion of each of these specific factors in their studies. Papers were given a score of 0 (criteria not met), 1 (criteria partially met), or 2 (criteria fully met). A maximum total score of 28 was possible, which was converted into a score between 0 and 1 by dividing the total score by the total possible score depending on study type. This adjustment allows for direct comparison between studies, despite variations in study design. Assessment of quality was used in this review to help ensure that the weight of a study's findings is considered in terms of its quality and to guide interpretation of study findings and implications for future practice and research (Khan, Ter Riet, Glanville, Sowden & Kleijnen, 2001).

1.4 Results

1.4.1 Database search results

The search of PsycINFO, CINAHL Plus and EMBASE returned 2,493 citations. Titles were reviewed for relevance and duplicates removed. The resulting 901 abstracts were reviewed, and for 111 of these a full-text review was carried out against the inclusion and exclusion criteria.

A total of 17 papers were included in the current review; 13 of which were

identified from the database searches, and an additional 4 from hand-searching reference lists (Johnson et al., 2019; Mitchell et al., 2011; Rohde, Jorgensen, Seeley & Mace, 2004; Trupin, Stewart, Beach & Boesky, 2002).

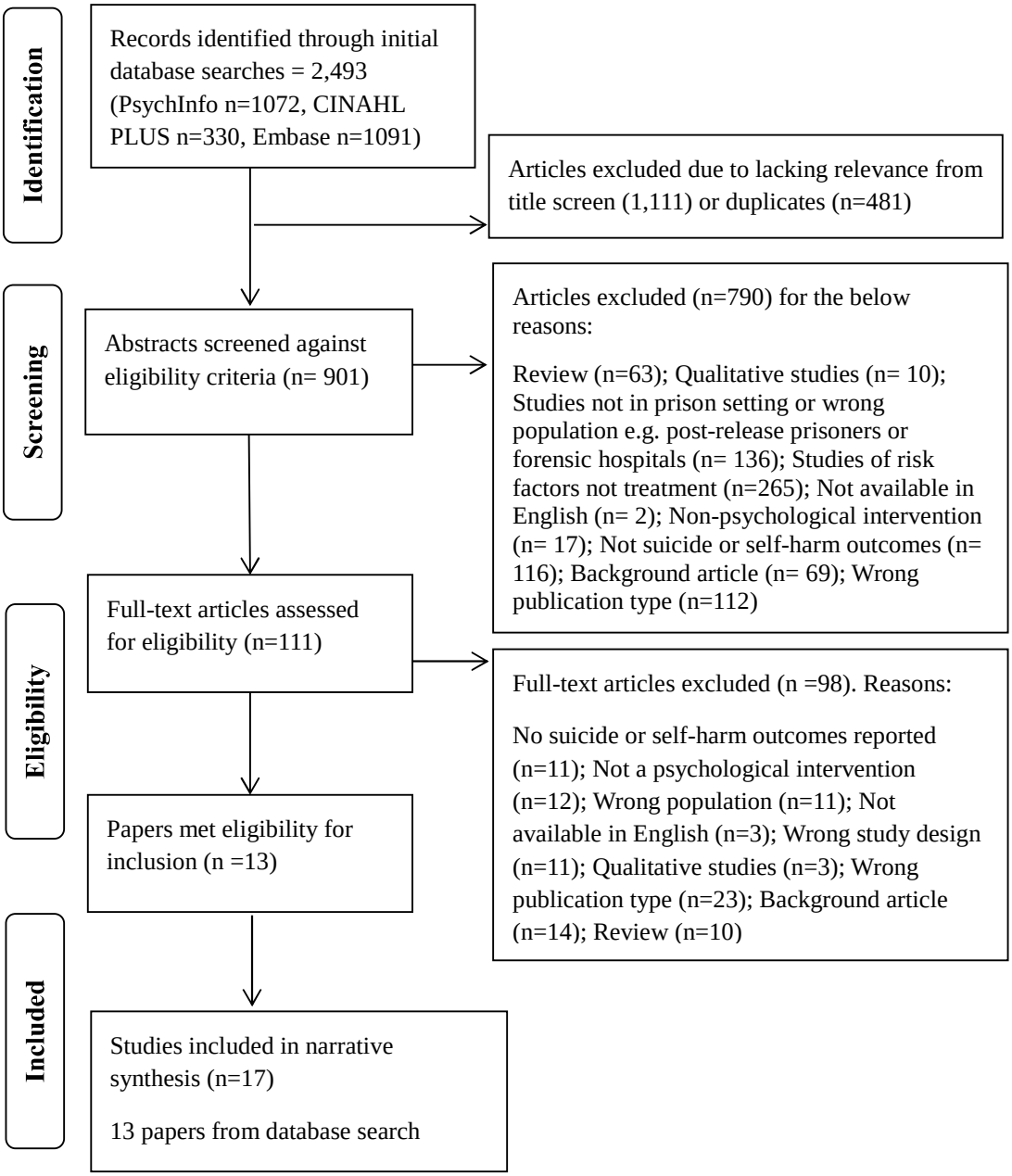

Figure 1: PRISMA flow diagram of search strategy for systematic review

1.4.2 Data Extraction

Characteristics of each study including author, year, participants, objectives, design, interventions delivered and outcomes (i.e. impact on self-harm and/or suicide) were extracted and summarised in Table II.

1.4.3.1 Study design

A wide range of study designs were found, including three RCT studies, with the remaining fourteen studies utilising a pre- and post-intervention design with and without a control condition. Where control conditions were used (n=7), these involved varied use of control comparison groups.

1.4.3.2 Settings

Eleven of the studies were set in adult prisons and six within youth offending settings. The studies including juvenile offenders introduced greater variance in setting; including YOI's (n=3), Juvenile Rehabilitation Administration (JRA) facility (n=1), a combination of YOI and Secure Care Home facilities (SCH) (n=1) and a Youth Correctional Facility (YCF) providing closed custodial care (n=1).

1.4.3.2 Participant characteristics

The adult participants mean age was 34.09 years, SD = 3.94, and within the studies using juvenile offenders the mean age was 17.16 years, SD = 1.96. In terms of gender there was a more even split within the studies using adult populations (male, n=4; female, n=4; mixed, n=3), whereas studies using juvenile offenders were predominantly male (n=5).

Selection criteria for participants varied across studies in terms of clarity in

reporting this. Similarities in criteria included excluding those due to leave the correctional facility prior to completing study or presenting with severe behavioural or mental health issues that would prevent taking part in the interventions being delivered. There was variation across studies in terms of inclusion criteria for comorbid psychiatric diagnoses. Studies included participants that had a diagnosis of Borderline Personality Disorder (BPD, n=2), Major Depressive Disorder (MDD, n=1), range of mental health diagnoses (n=3), general prison population (n=1), a *mental health problems* group and one general population group (n=1), vulnerable individuals i.e. presenting with suicide and/or self-harm behaviours, being bullied or residing on a vulnerable person's wing (n=8), and BPD and vulnerability (n=2). The findings of studies recruiting participants with a diagnosis BPD is not surprising with recurrent self-harm being one of the most common symptoms of BPD (American Psychiatric Association, 1994) and is often the target of interventions for BPD e.g. DBT.

1.4.3.3 Primary outcomes

Due to the nature of this review question, in four studies the treatment could be described as indirect in that suicide and self-harm outcomes were not the primary targets of the intervention (Biggam & Power 2002, targeted dealing with stress; Johnson et al., 2019, Major Depressive Disorder; Mitchell et al., 2011, range of mental health disorders; Rohde et al., 2004, coping skills). However, these were secondary outcomes or the interventions aimed to improve psychological factors associated with increased risk of suicide and self-harm behaviour. Thirteen studies listed reduction of suicide and self-harm behaviours within primary intervention aims.

Table II: Summary of reviewed studies

Authors and Year	Aim	Setting	Participant characteristics	Study design	Intervention and delivery	Suicide and self-harm outcomes (as stated by authors)**	Other outcomes	Quality rating
Black, Blum, McCormick and Allen (2013)	To report results from a study of offenders	USA Iowa Department of Corrections 3 x prisons and 1 x group community corrections	7 groups in total 77 overall participants (n=10 community and n=67 prison) Male 18% Female 82% Mean age 31.4 years, SD 8.6	Pre- and post-intervention	**DBT** STEPPS: group treatment programme for BPD. Combines CBT elements with DBT skills training Psychoeducation about BPD, emotion management skills training, behaviour management skills training Additional systems element – one-time 2 hour session for system members 20 x 2hr weekly sessions	Behavioural ↓ Suicide and self-harm Behaviours*	↓ BEST* ↓ BDI* ↓ PANAS Negative Affectivity* ↓ PANAS Positive Affectivity ↓ Disciplinary Infractions*	0.82
Camp, Joy and Freestone (2018)	To measure the effectiveness of an Enhanced Support Service intervention in reducing recorded incidents of violence and disruption from pre- to post-intervention	England 1 x Male security-category B local prison and 1 x training prison	35 male prisoners Mean age 33.15, SD 7.41 Targeted participants that presented with persistent and severe violent and disruptive behaviour (including self-harm)	One group pre- and post-design	**Combined approaches** 1:1 / 2:1 Enhanced Support Service CBT, MI and psycho-education Included psychoeducation on mental health and personality difficulties, goal setting, CBT skills, coaching, shared problem-solving, emotional regulation skills, and interpersonal effectiveness Average of 8-10 weeks, 2 or more times per week	Behavioural ↓ Self-harming behaviours	↓ IEP warnings* ↓ Positive behaviours ↓ Aggressive Behaviours* ↓ Adjudication	0.79
Eccleston and Sorbello (2002)	To present preliminary quantitative and qualitative outcomes of delivery of an adapted DBT	Australia Remand prison	29 male prisoners in total. Participants had 1) previous diagnosis of BPD 2) or BPD symptoms 3) or history of suicide or self-	Pre and post intervention	**DBT** Adapted DBT for offender population Skills training with individual counselling on as-needs basis.	Psychological ↓ DASS: Stress subscale	↓ Units B, C, E Anxiety and depression ↑ Units A and D Anxiety and depression	0.50

	intervention in prison setting		harming behaviour Unit A - High vulnerability to suicide and self-harm Unit B - violent offenders Unit C - vulnerable first time offenders under 25 Units D and E - offenders requiring protection.		DBT: Cognitive and behavioural interventions, acceptance-based techniques, aimed to teach adaptive skills to manage dysfunctional response patterns and reduce self-harm and suicide behaviours. 20 x 2hr sessions, delivered twice weekly by two facilitators over 10 weeks			
Gee and Reed (2013)	Pilot evaluation of a modified DBT intervention for female prisoners	England Female prison	62 female prisoners. Aged between 18 and 55	Pre and post intervention	**DBT** Group skills training, individual therapy and team consultation meeting. Offered skills coaching for missed sessions in place of 24/7 telephone support. Group content: mindfulness, distress tolerance, emotional regulation, interpersonal effectiveness. Individual therapy started prior to group therapy. Two skills training groups per week for 90minutes; group therapy component was 8 week long modules, two weeks apart; individual therapy for 50minutes weekly; team consultation two hours weekly.	↓ CORE: Risk subscale ↓ ACCT	↓ CORE wellbeing, problems and functioning ↓ Matrix Outcome Data: - Perception of their Lives - Perception of mental Health - Perception of personal relationships with family and friends. ↓ Adjudications	0.59
Glowa-Kollisch et al. (2014)	Evaluated Beyond the Bridge programme designed to provide CBT in jail MOUs	USA New York city jail MOU's	3 groups of mentally ill individuals: Group 1 Adult males detained in 1 of the 3 MOU's for at least 7 days between specified time period and participated in programme Group 2	Pre and post intervention with control	**Combination of approaches** Group and individual Approaches: CBT, motivation enhancement therapy, MI, social learning model, key coping and problem-solving skills for relapse prevention, incentive-driven behavioural management. Topic areas: treatment engagement, medication compliance, coping skills,	<u>Behavioural</u> *Group 1 vs. Group 2* ↓ Time spent on suicide watch* ↓ Acts of self-harm* ↓ Placement on suicide watch* ↓ *Group 1 vs. Group 3* Time spent on suicide watch	*Group 1 vs. Group 2* ↓ Subject to use of force by security personnel* ↓ Being found guilty of infraction* ↓ Recidivism* ↓ *Group 1 vs. Group 3* Subject to use of	0.82

			First control group. In MOU during same period for at least 7 days but did not participate in programme (n=485 for groups 1 and 2) Group 3 Second control group. Adult males in MOU one year previously for at least 7 days and did not participate in programme (n=413) Aged 26-55 years.		triggers, symptom awareness, feelings and choices. 6 week treatment programme	↓Acts of self-harm ↓ Placement on suicide watch*	force by security personnel ↓ Being found guilty of infraction ↓ Recidivism*	
Jackson (2003)	To train prisoners in coping skills to deal with stressful situations and provice a support system for coping with suicidal thoughts, feelings and urges.	Adult prisons in US, Georgia Department of Corrections	Total of 18 prisoners Facility 1 n = 12 Facility 2 n = 6 Male and female; % unknown Participants considered high risk for suicide	Pre- and post-intervention design	**CBT** Group Cognitive therapy techniques to decrease urge to die by suicide Initial program of psychoeducation and coping skills training. Then long-tern therapeutic programme to provide support and reinforce skills learned	<u>Psychological</u> *Facility 1:* Reasons for Living Inventory ↓Surviving and coping beliefs subscale* ↓ Fear of social disgrace subscale* No significant findings for: responsibility to family, child-related concerns, fear of suicide, and moral objections of suicide *Facility 2:* No significant findings		0.50
Johnson et al. (2019)	Evaluate the effectiveness and the cost-effectiveness of an IPT intervention for prisoners with MDD	USA Women's and men's medium security prisons All participants were diagnosed with MDD	181 participants Mean age 39 years (SD = 10.4) 35% female	RCT TAU (n=90) vs. IPT + TAU (91)	**IPT** Group 20 x 90minutes sessions each over 10 weeks with four individual sessions	↓ BHS* LIFE – PSR3+ - Too few participants reported suicide ideation to be meaningful ↓ BSSI – no difference between groups	↓ HRSD*[P] ↓ QIDS* ↓ LEC-PCL*	0.96

Nee and Farman (2005)	To look at the viability of delivering DBT in a prison setting, including impact on BPD symptoms, criminogenic risk and self-harm	UK 3 women's prisons: 2 x closed training prisons (high security) and 1 x local allocation prison All participants diagnosed with BPD, actively engaging in self-harm or other suicide behaviour, all presented a future serious offence risk	14 women 5 waitlist controls Mean age 31, SD 9.7	Pre- and post-design	**DBT** Skills group training, individual therapy, and 24 hour telephone support 2 closed training prisons (high security) - one year programmes 1 local allocation prison – short programmes of 12 to 16 weeks Weekly sessions	<u>Behavioural & Psychological</u> *One year programmes* ↓ Prison self-harm records *Short Programmes* ↓ Prison self-harm records ↓ Reasons for Living Inventory (Surviving and Coping scale*)	*One year programmes* ↓ Borderline Syndrome Index* ↓ Emotion Control Questionnaire – Rehearsal Scale* ↓ Locus of control* ↓ Eysenck's Impulsivity* ↓ Dissociative Experiences Scale ↓ Rosenburg's Self Esteem Inventory ↓ STAXI - Anger Expression, State Anger and Anger Index subscales *Short programmes* ↓ Rosenburg's Self Esteem Inventory* ↓ Dissociative Experiences Scale* ↓ Eysenck's Impulsivity* Remaining questionnaires did not find significant improvement.	0.77

Pratt et al. (2015)	To examine the feasibility of delivering and evaluating cognitive behavioural suicide prevention therapy to prisoners exhibiting risk to self, and establish preliminary estimates of the impact of intervention over TAU	UK 1200 capacity adult male prison All participants managed by ACCT process in month prior to study	62 participants total All male Average age 35.2 years	RCT Two groups: TAU (n=31) vs. CBSP (n=31)	**CBT** Individual CBSP; Cognitive Therapy informed intervention for suicide: Attention broadening; Mood management and behavioural activation; Cognitive restructuring; Problem-solving training; Improving self-esteem and positive schema 20 x 1hr weekly sessions	<u>Behavioural & Psychological</u> ↓ SIB's* ↓ BSSI ↓ SPS	↓ BHS ↓ BDI-II ↓ BAI ↓ Robson Self Concept Questionnaire ↓ BPRS-R ↓ SAPAS	0.86
Riaz and Agha (2012)	To determine the effectiveness of CBT in reducing the frequency of self-harm in female prisoners	Pakistan Women's jail	9 Pakistani inmates Mean age 30.9 years 6 had self-harmed in jail and 3 history of self-harm	One group pre- and post-intervention	**CBT** Group Delivered in 12 sessions over 4 month period, 45-60minutes per session Intervention aims: Identifying self-harm triggering events; recognizing thoughts and feelings produced by these events; accepting the distorted thinking and emotions it led to; developing alternative adaptive coping skills Psycho-education, cognitive restructuring, problem-solving, and relaxation	<u>Behavioural</u> ↓ DSHI	Brief COPE (some small non-significant changes)	0.59
Walker, Shaw, Turpin, Reid & Abel (2017)	To describe a pilot intervention to target women offenders within forensic environments	UK Three closed female prisons	113 women Mean age 29.2 years	Randomised into PIT (n=31) vs. AC (n=45)	**PIT** Individual Aimed to reduce thoughts and actions of suicide and self-harm. Understand the precipitating circumstances to self-harm episode. Bring feelings into the here and now. Develop reasoning that links feelings, problems and relationships. Use shared exploration through the therapist	<u>Behavioural & Psychological</u> ↓ BSSI (both groups improved) ↓ BHS DSHI and SRSHIQ – women in AC self-reported more self-harm and continued repeated self-harming behaviour during intervention periods	↓ BDI (both groups improved)	0.79

					and client clarifying what they were feeling and experiencing. 4-8 sessions weekly, 50 minutes			
Juvenile offenders								
Biggam and Power (2002)	To examine the hypothesis that by improving vulnerable prisoners social problem-solving skills this will improve ability to deal with stresses of incarceration	Scotland Largest YOI	Vulnerable offenders from three inmate categories: (1) suicidal risk inmates (n=33) (2) formal protection inmates (n=6) (3) bullied in circulation inmates (n=7) Total 46 participants Mean age 19.3 years All male	Two factored design; participants allocated to one of two groups: (1) brief, social problem-solving therapy in a group format (n=23) (2) a non-intervention comparison group (n=23)	**Social problem-solving** Skills training programme. 5 general stages of problem solving 5 intervention groups of 4-6 individuals, over five 90-minute sessions	Psychological ↓ BHS	↓ Negative problem orientation ↓ Avoidance style ↓ Rational problem solving ↓ Problem definition and formulation subscale ↓ Generation of alternative solutions ↓ HADS	0.75
Forster and Shaw (2018)	To evaluate the impact of intervention on self-injury and associated psychological distress	UK YOI	12 male young offenders Mean age 19.85 years	Within subjects design with measurements over different time points Independent variable is time point for self-injury behaviours (baseline, 6 months, 1 year) and for self-injury thoughts and distress (baseline and 1 year)	**Interpersonal therapy** Developmental Group Psychotherapy (DGP) was informed by a number of treatment principles, including Cognitive-Behavioural Therapy, Dialectical-Behaviour Therapy and Psychodynamic group therapy. Weekly one hour sessions, two facilitators, minimum of 6 sessions	Behavioural & Psychological ABUSI: ↓ Severity of reported Urges* ↓ Difficulty in resisting self-injury* ↓ Frequency of self -injury thoughts ↓ How much time thinking ↓ Overall urge to self injure	↓ CORE Problems subscale* ↓ CORE Functioning Subscale* ↓ CORE Wellbeing subscale	0.77

				Dependent variables are rates of self-injury, self-injury thoughts and urges and psychological distress		↓ Number of recorded incidents * ↓ Number of days on ACCT plans * ↓ CORE Risk subscale*		
Mitchell (2011)	To assess the viability of delivering a cognitively based intervention to adolescents with mental health problems in secure care, and the effectiveness.	UK YOI (n=1) and SCH (n=4)	YOI (n = 18) and SCH (n=22) All male Mean age 15.58 years, SD 1.59	Multi-site RCT CBT (n=18) vs. TAU (n=20)	**CBT** Individual Also drew on ideas from MI and narrative therapy. 10 weekly sessions, with an option to extend	<u>Psychological</u> ↓ DCP: suicide ideation and self-harm problem severity*	↓ SNASA ↓ YSR – internal* and external ↓ DCP: drug and alcohol, depression and anxiety problem severity* ↓ DCP: drug and alcohol, depression and anxiety coping ability	0.75
Rohde et al. (2004)	To describe the development and preliminary evaluation of a CBT group intervention to enhance general coping and problem solving ability among incarcerated youth	USA Youth correctional facility	76 young incarcerated offenders 62 from second correctional facility control All male Mean age of facility 1 is 16.3 years (SD 1.9) and facility 2 16.8 years (SD 1.7)	Randomised group design Coping Course (n=46) vs. usual care (n=30)	**CBT** To enhance general coping and problem solving skills Based on CWD-A course Attended twice weekly for 16 sessions over 8 weeks	<u>Behavioural & Psychological</u> ↓ Suicide behaviours ↓ LAS Death Related, Self-related and total score*	↓ YSR Externalising* ↓ Sharing with staff* ↓ CBT Knowledge* ↓ Self-Esteem*	0.82
Trupin et al. (2002)	To increase staff's ability to intervene with difficult behavioural and emotional problems of incarcerated female offenders.	USA Juvenile Rehabilitation Administration facility Locked facilities	Total 60 Mental health unit (n=22) and general population unit (n=23). Youth on a third unit served as comparison group (n=15)	Pre- and post-intervention, non-randomised control Two intervention	**DBT** Combination skills training, validation and problem solving. Group format, 60-90 minutes, over 4 weeks, once or twice per week	<u>Behavioural</u> ↓ Behaviour problems* - para suicidal acts included (mental health unit only)	↓ Behaviour problems* (mental health unit only) ↑ Staff punitive actions* (General pop unit; no change on mental health unit)	0.68

			Adolescent female offenders Mean age 15.15	groups and 1 control group			↓Staff punitive actions* (Mental health unit when compared with previous year where no-DBT) ↓CRA* (over time, not between groups)	
Welfare and Mitchell (2005)	Reports results from evaluation of first three Access Courses in a YOI	UK YOI	20 (16 completions) young offenders Aged 15-18 years All male	Pre- and post-intervention	**CBT** Access Course: Aims to improve self-esteem, social skills, mood, problem-solving and reduce self-injury and bullying 12 sessions – 1 hour of classroom work and 1 hour of gym	<u>Behavioural & Psychological</u> ↓BHS ↓Staff perception of self-harm behaviour - although small changes	↓Rosenburg Self -Esteem Scale ↓Locus of control ↓Social Problem Solving Skills: Assertiveness	0.45

Note: **YOI** (Young Offenders Institution); **SPSI-R** (Social Problem Solving Inventory-Revised, D'Zurilla, Nezu, & Maydeu-Olivares, 1996); **HADS** (The Hospital Anxiety and Depression Scale, Zigmond & Snaith, 1983); **BHS** (Beck Hopelessness Scale, Beck, Weissman, Lester, & Trexler, 1974); **MOU** (Mental Observation Unit); **CBT** (Cognitive Behaviour Therapy); **MI** (Motivational Interviewing); **DSM-V** (Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, APA, 1994); **TAU** (Treatment as usual); **CBSP** (Cognitive Behavioural Suicide Prevention, Tarrier et al., 2013); **RCT** (Randomised Controlled Trial); **SAMS** (Schematic Appraisals Model of Suicide, Johnson et al., 2008); **BSSI** (Beck Scale for Suicide Ideation, Beck & Steer, 1991); **SPS** (Suicide Probability Scale, Cull & Gill, 1982); **BDI** (Beck Depression Inventory, Beck, Steer & Brown, 1996); **BAI** (Beck Anxiety Inventory, Beck, Epstein, Brown & Steer, 1988); **BPRS** (Brief Psychiatric Rating Scale, Ventura et al., 1993); **SAPAS** (Standardised Assessment of Personality – Abbreviated Scale, Moran et al., 2003); **ACCT** (Assessment, Care in Custody and Teamwork, Ministry of Justice, 2013); **SIB** (Suicidal or self-injurious behaviour); **DBT** (Dialectical Behaviour Therapy, Linehan, 1993); **BPD** (Borderline Personality Disorder); **DASS** (Depression, Anxiety and Stress Scale, Lovibond & Lovibond, 1996); **CORE** (Clinical outcomes in routine evaluation, Evans et al., 2000); **ABUSI** (Alexian Brothers Urge to Self-Injure, Washburn, Juzwin, Styer, & Aldridge, 2010).)**IEP** (incentive and earned privilege system); **STAXI** (Stait-Trait Anger Expression Inventory); **IDOC** (Iowa Department of Corrections); **STEPPS** (Systems Training for Emotional Predictability and Problem Solving); **BEST** (Borderline Evaluation of Severity Over Time, Pfohl et al., 2009); **PANAS** (Positive and Negative Affect Schedule, Watson & Clark, 1999); **CWD-A** (Coping With Depression course, Clarke, Lewisohn & Hops, 1990); **LAS** (Life Attitudes Scale, Rohde, Lewinsohn, Seeley & Langhinrichsen-Rohling, 1996); **YSR** (Youth Self Report, Achenbach, 1991); **MDD** (Major Depressive Disorder); **HRSD** (Hamilton Rating Scale for Depression, Hamilton, 1980); **QIDS** (Quick Inventory of Depressive Symptoms-Self-Report, Rush et al., 2003); **LEC-PCL** (PTSD Checklist for DSM-5 with Life Events Checklist for DSM-5, Ruggiero, Del Ben, Scotti & Rabalais, 2003); **LIFE – PSR3+** (Longitudinal Interval Follow-Up Examination Psychiatric Status Ratings, Keller et al., 1987); **PIT** (Psychodynamic Interpersonal Therapy); **ZAN-BPD** (Zanarini rating scale for BPD, Zanarini, 2003); **DSHI** (Deliberate Self-Harm Inventory, Gratz, 2001); **SRSHIQ** (Self-Report of Self-Harm Incidents Questionnaire, developed by researchers, Walker et al., 2017); **AC** (active control); **SCH** (Secure Children's Homes); **SNASA** (the salford needs assessment schedule for adolescents, Kroll et al., 1999); **DCP** (Difficulties and Coping Profile, developed for the study, Mitchell et al., 2011); **CRA** (Community Risk Assessment, local site measure of placement and security level)

***** denotes statistically significant improvements, $p<0.05$ ****** If a specific outcome measure is not listed, this is because the data has been gathered through other means

Downward arrows indicate a reduction in the target symptom (i.e. clinical improvement)

1.4.4 Quality of studies

Quality assessment ratings (Table III) ranged from 0.45 to 0.96 (mean = 0.72, SD = 0.15). Second ratings were provided by an independent rater for a random sample of five of the included studies. Joint probability of agreement (Uebersax, 1987) was 84%.

To facilitate comparison, quality scores were divided into three categories: low (0.46–0.59), medium (0.68–0.79) or high quality (0.82–0.96) (Spector, Revolta & Orrell, 2016). There were five high quality studies (Black et al., 2013; Glowa-Kollisch et al, 2014; Johnson et al., 2019; Pratt et al., 2015; Rohde et al., 2004). Four of these studies utilised a between groups design and controlled for confounding variables, and one (Black et al., 2013) used a within subjects pre-post design. These five studies sufficiently reported group characteristics and results in detail. Among the seven medium quality studies (Biggam & Power, 2002; Camp et al., 2018; Forster & Shaw, 2018; Mitchell et al., 2011; Nee & Farman, 2005; Trupin et al., 2002; Walker et al., 2017), sample sizes were small or study power not reported, there was minimal reporting on control of confounding variables and estimations of variance. Despite this the research questions were stated clearly and appropriate designs used, group characteristics well-described, and analyses appropriate for the majority. The five low quality studies (Eccleston & Sorbello, 2002; Gee & Reed, 2013; Jackson, 2003; Riaz & Algha, 2012; Welfare & Mitchell, 2005), were methodologically limited in the areas of consideration of confounding variables, small sample sizes, definition and robustness of outcome variables, and in drawing links to results in conclusions.

Table III: Quality assessment results using KMET tool

	Question/Objective sufficiently described?	Study design evident and appropriate?	Method of subject / comparison group selection described and appropriate?	Subject and comparison group characteristics sufficiently described?	Was random allocation described?	Was blinding of investigators reported?	Was blinding of subjects reported?	Outcome measures well defined and robust?
Biggam and Power (2002)	**	**	**	**	*	x	**	**
Glowa-Kollisch et al. (2014)	*	*	*	**	--	--	--	*
Pratt et al. (2015)	**	**	*	**	**	**	--	**
Eccelston & Sorbello (2002)	**	*	*	*	--	--	--	*
Gee & Reed (2013)	**	*	*	**	--	--	--	*
Jackson (2003)	**	*	*	*	--	--	--	*
Johnson et al. (2019)	**	**	*	**	**	**	--	**
Camp et al. (2018)	**	*	**	**	--	--	--	**
Nee & Farman (2005)	**	**	*	**	--	--	--	*
Riaz & Agha (2012)	**	*	*	**	--	--	--	*
Forster & Shaw (2018)	**	**	*	**	--	--	--	**
Black et al. (2013)	**	**	*	**	--	--	--	**
Rohde et al. (2004)	**	**	**	**	**	*	--	**
Mitchell et al. (2011)	**	**	*	**	*	**	x	**
Walker et al. (2017)	**	**	**	**	**	x	x	**
Welfare & Mitchell (2005)	X	**	*	*	--	--	--	*
Trupin et al. (2002)	*	**	*	**	--	--	--	*

Table III continued

	Sample size appropriate?	Analytic methods described and appropriate?	Some estimate of variance reported for the main results?	Controlled for confounding?	Results reported in sufficient detail?	Conclusions supported by the results?	Quality rating (total sum / total possible sum)
Biggam and Power (2002)	*	*	*	*	**	**	**0.75**
Glowa-Kollisch et al. (2014)	**	**	**	**	**	**	**0.82**
Pratt et al. (2015)	*	**	**	**	**	**	**0.86**
Eccelston & Sorbello (2002)	*	*	x	x	**	*	**0.50**
Gee & Reed (2013)	*	*	*	x	**	*	**0.59**
Jackson (2003)	x	**	*	x	**	x	**0.50**
Johnson et al. (2019)	**	**	**	**	**	**	**0.96**
Camp, Joy & Freestone (2018)	*	**	**	*	**	**	**0.79**
Nee & Farman (2005)	*	**	**	*	*	**	**0.77**
Riaz & Agha (2012)	x	**	*	x	**	*	**0.59**
Forster & Shaw (2018)	*	**	*	x	**	**	**0.77**
Black et al. (2013)	*	**	**	x	**	**	**0.82**
Rohde et al. (2004)	*	**	*	**	**	**	**0.82**
Mitchell et al. (2011)	*	**	x	**	**	**	**0.75**
Walker et al. (2017)	**	**	*	**	*	**	**0.79**
Welfare & Mitchell (2005)	x	*	x	x	**	**	**0.45**
Trupin et al. (2002)	*	*	*	*	**	**	**0.68**

Key: ****** (quality criterion met, score = 2); ***** (quality criterion partially met, score = 1); **x** (quality criterion not met, score = 0); **--** (not applicable)

1.4.5 Interventions

The studies report on a number of psychological interventions that have been applied with juveniles and adults in secure correctional facilities, where the impact on suicide and/or self-harm outcomes have been indicated. The interventions have utilised CBT, social problem-solving, DBT, interpersonal therapies, and combined psychological approaches, discussed in turn below.

1.4.5.1 Intervention characteristics

In 11 studies interventions were offered on a weekly basis, 2 studies reported twice weekly, 3 studies involved a combination (i.e. varying between once or twice weekly or reducing to less frequently after an initial phase), and one study did not include this information. Input was reported to last between 4 to 20 sessions, with the majority of studies offering interventions between 12 or 20 sessions. Most interventions utilised two facilitators, including clinical psychologists (n=6), Physical Education teacher (n=1), trial researchers (n=6), “therapists” not clearly defined (n=1), “group leaders” not clearly defined (n=1), counsellors (n=2), psychiatric practice nurses (n=1), prison and unit staff (n=6), mental health practitioners (n=3), nursing (n=1), occupational therapist (n=1), non-specialist staff e.g. discharge planners (n=2), and clinical social worker (n=1). Four studies applied individual interventions, 7 applied group interventions, and 5 studies used a combination of group and individual sessions, predominantly those using DBT. Intervention modality is described in detail below.

1.4.5.2 Control groups

Seven studies utilised control groups for comparison (Glowa-Killsch et al., 2014; Johnson et al., 2019; Mitchell et al., 2011; Pratt et al., 2015; Rohde et al.,

2004; Trupin et al., 2002; Walker et al., 2017), which enabled more direct measurement of the impact of the interventions. All control groups received TAU and this intervention varied between studies. TAU included ACCT (Pratt et al., 2015), drug and alcohol groups (Rohde et al., 2004), educational, vocational and recreational programs, group meetings and a behavioural modification program (Trupin et al., 2002), individualised nursing interventions for mental health problems (Mitchell et al., 2011), other therapies and antidepressant medication (Johnson et al., 2019), and regular mental health encounters with clinical staff (Glowa-Kollisch et al., 2014). One study involved an active control condition where control participants were taken out of their cell and spent time engaging in activities such as card games or money management (Walker et al., 2017). No emotional topics were discussed, and no support undertaken as part of this control group.

1.4.5.3 Cognitive Behavioural Therapy

Six studies applied CBT interventions (Jackson, 2003; Mitchell et al., 2011; Pratt et al., 2015; Riaz & Agha, 2012; Rohde et al., 2004; Welfare & Mitchell, 2005). All studies involved time-limited, structured interventions, including a focus on identifying, evaluating and changing cognitions associated with suicide or self-harm behaviour, and supporting participants to implement alternative adaptive behavioural coping strategies. Similarities across content of the interventions included relaxation, social skills, cognitive restructuring, communication and problem solving.

Two of the studies made reference to specific models that informed the intervention, and these varied by treatment target i.e. suicide or self-harm, rather than a generic cognitive behavioural approach as seen in other studies e.g. Jackson (2003). Pratt et al. (2015) administered a cognitive-behavioural suicide prevention

(CBSP) intervention, informed by Schematic Appraisals Model of Suicide (SAMS). It focused on viewing suicidality as a result of information processing biases, appraisals and suicide schemas and used cognitive therapy techniques to support prisoners to evaluate their appraisals, and behavioural techniques to implement more adaptive responses to distress. Riaz and Agha's (2012) study with Pakistani female prisoners utilised the Experiential Avoidance Model of self-harm, which understands the function of self-harm as avoidance of difficult cognitions or emotions. Self-harm is seen to relieve an individual from their painful experiences, which becomes negatively reinforced. Four studies utilised generic cognitive therapy techniques, rather than a specific model.

The three CBT studies with juvenile offenders included adaptations to the intervention. In their RCT study, Mitchell et al. (2011) aimed to treat a range of mental health disorders, rather than suicide or self-harm specifically, and adapted the intervention to make it flexible. They aimed to increase motivation and make it accessible to those with limited cognitive or literacy skills. The tools included were either boosting insight or problem solving in nature, and the intervention involved assessment and formulation with each offender to help with relevancy and engagement. The intervention also drew on ideas from Motivational Interviewing (MI) and Narrative Therapy, although it was largely a CBT intervention.

Two studies with juvenile offenders used a classroom-style approach. Rohde et al. (2004) aimed to enhance coping and problem solving skills, but with the primary aim of improving symptoms of depression. This differed to the other studies. Welfare and Mitchell's (2005) study combined a CBT based intervention with physical education (PE). The intervention included a focus on problem solving, communication styles, emotion management and assertiveness skills, rather than

focusing on specific CBT-based interventions such as cognitive restructuring. PE aimed to consolidate learning from the group through physical group activities e.g. a blind-fold trust activity.

Summary of findings from CBT studies.

The outcomes for CBT interventions led to some positive impacts on suicide and self-harm behaviours and attitudes, with all studies finding some improvements on the measures used (discussed below), though few reaching statistical significance.

Three studies found improvements in suicide and self-harm related beliefs and attitudes, however they varied in quality (Jackson, 2003, rated as low quality Mitchell et al., 2011, medium quality, Rohde et al., 2004, high quality). These improvements were found in the death related subscale (e.g. “I have written a suicide note”), and self-related subscale (e.g. “most of the time, I feel confident and assured”) measures of life-extending and life-threatening feelings and actions on the Life Attitudes Scale-Short Form (LAS-SF; Rohde et al., 1996), in Rohde et al. (2004). In another study, improvements were found on the surviving and coping subscale (e,g, “I believe I can find other solutions to my problems”), and the fear of social disgrace subscale (e.g. “other people would think I am weak and selfish”) of the Reasons for Living questionnaire (RFL; Linehan, Goodstein, Nielsen & Chiles, 1983, in Jackson, 2003). The third study found improvements in perceived problem severity of suicide ideation and self-harm, and ability to cope in response to these, on the Difficulties and Coping Profile (DCP) measure, which was a measure developed for the study (Mitchell et al., 2011).

In Jackson (2003) the above changes in the RFL were limited to one out of the two tested prison sites, and they found no significant changes for the remaining

four subscales of the RFL: responsibility to family, child-related concerns, fear of suicide, and moral objections of suicide, however this was a low quality study. This study had high attrition rates (61%) due to transfer and release from prison and found certain factors that acted as barriers to delivery of intervention, such as lack of physical space and low priority compared to other prison institutional schedules, such as administration of medication.

There were mixed findings in relation to changes in suicide and self-harm behaviours. One study found greater reduction in suicide and self-harm behaviours for the CBT group over the control group, with moderate treatment effect, and was a high quality study (Pratt et al., 2015). Despite changes in suicide and self-harm related attitudes, mentioned above, Rohde et al. (2004) found no differences in suicide behaviour between intervention and control group on their five-item questionnaire about current suicide ideation and lifetime suicide attempts, which was a novel measure developed for this study. This was a higher rated study in terms of quality, however there were certain areas that affected its methodological rigour, such as the authors stating the study was underpowered to detect small effects and did not include a follow up to see if effects were sustained. One study found no improvements in staff reports of actual or threatened self-injury on the Staff Assessment Checklist, described in a later section (Welfare & Mitchell, 2005, low quality). General trends of improvements were reported, however, these changes were small as there were few occurrences of these behaviours. Further, the use of staff report is far from an accurate measure of self-harm incident rates.

One study targeted self-harm only and found no significant differences in self-harm behaviours from pre- to post-intervention (Riaz & Agha, 2012). They did report that CBT increased the average time without a self-harm incident (from 7.6

weeks to 14.3 weeks), suggesting potential benefits of CBT in helping prisoners to manage self-harm behaviours, however, this was a low quality study with a very small sample size (n=9). With overall self-harm incidents being few, this was difficult to assess further. Some of the women reported that the group was a break from the "dull" schedule of prison-life, as well as having a space to openly share their feelings. It is important to note that without a control group, firmly concluding that improvements in self-harm were attributable to the intervention is not possible. Further, the mechanisms of change are not conclusive, as outcomes used were unrelated to the EAM intervention model used. Particularly as participants reported the main drivers for self-harm behaviours as feelings of hopelessness and helplessness, and relief from anger and tension, it would have been beneficial to have included measures of these constructs.

There were also mixed findings for changes in psychological factors associated with suicide and self-harm following CBT, with varied study quality. One study found no differences between treatment and control group in suicide ideation, suicide probability, and other psychological determinants of suicide, i.e. depression and hopelessness, anxiety, self-esteem, as both groups showed improvements (Pratt et al., 2015). Suicide ideation was assessed using the Beck Scale for Suicide Ideation (BSSI; Beck, Kovacs & Weissman, 1979), which is among the most empirically supported self-report measures of suicide risk and associated factors (Cramer et al., 2017). As the control group received ACCT, this suggests beneficial effects of existing strategies in the absence of targeted psychological interventions. A greater proportion of participants that received CBT (56% vs. 23%), did reach clinically significant recovery on the Suicide Probability Scale (SPS; Cull & Gill, 1982), however this was not maintained at a six-month follow up. The SPS is a self-report

measure that gives a prediction of an individual's potential for suicide and is also validated with offender samples (Naud & Daigle, 2010). One study found improvements in ability to cope with depression and anxiety for both groups (Mitchell et al., 2011) and one study found improvements in self-esteem (Rohde et al., 2004), however suicide and self-harm were not primary targets in both studies. One study found no significant effects of CBT on improvement in hopelessness scores on the Beck's Hopelessness Scale (BHS; Beck & Steer, 1993), however this was a low quality study (Welfare & Mitchell, 2005).

1.4.5.4 Problem Solving

Studies applying CBT interventions all included some form of problem solving skills training and one study applied a pure social problem solving intervention (Biggam & Power, 2002). Five general stages of problem solving were taught: (a) general orientation, (b) identifying the specific problem and formulation, (c) generating alternative solutions, (d) decision making and implementing chosen solution, and (e) evaluation. The social problem solving element involved group generation of the current social problems they were facing and using these to apply skills learned. This intervention aimed to address the poor problem solving abilities that has been linked to incarcerated populations, in particular avoidant and impulsive problem solving approaches (Porporino, Zamble & Higginbottom, 1988).

Summary of findings from problem solving studies.

This single study was a medium quality study that found a significant reduction in hopelessness scores at 3 month follow up for the intervention group, but not for a non-contact control group. This was measured using the Beck's Hopelessness scale (BHS; Beck et al., 1974). The authors stated that this reduction

took many of the intervention group members (42%) from a hopelessness score high enough to be indicative of psychological problems that are associated with successful suicide attempts, to a group mean within the non-clinical range. They also found improvements in perceived problem solving ability, anxiety and depression. As with many of the studies included in this review, there are questions around generalisability, however, due to use of one prison site and one therapist delivering the intervention. Further, as there was no behavioural measure included in this study it is not possible to make conclusions about whether these skills were generalised to suicide and self-harm behaviour.

1.4.5.5 Dialectical Behaviour Therapy

Five studies applied DBT interventions of varying degrees (Black et al, 2013; Eccleston & Sorbello, 2002; Gee & Reed, 2013; Nee & Farman, 2005; Trupin et al, 2002). These interventions generally applied cognitive and behavioural interventions, acceptance-based techniques, and aimed to teach adaptive skills to manage dysfunctional response patterns and reduce self-harm and suicide behaviours. More specifically, the studies involved teaching emotional regulation, distress tolerance, reality testing, and mindfulness skills, primarily aiming to address self-harm, but also suicide behaviours.

Typically, DBT involves four main components; group skills training, individual psychotherapy, weekly team supervision and 24/7 telephone support with a therapist for emergencies. The intervention is also generally offered for at least 18 months. There was substantial variation across the studies in each of these components. None of the studies reported offering input for the time frames seen in other clinical populations. The interventions ranged from 4 weeks to 20 weeks, and some authors commented this was due to funding and accessibility limitations imposed by

the settings. With regards to the active components of DBT, all five studies included group skills training, one study included group training and individual sessions, although individual sessions were offered as required rather than as a standard component of the intervention (Eccleston & Sorbello, 2002), one of the studies included group training, individual sessions and team consultation (Trupin et al., 2012), and one study included all four components, however concluded that 24/7 telephone support in this setting was "virtually impossible" and recommended using an answer phone machine (Nee & Farman, 2005), and one offered all components with skills coaching for missed sessions in place of 24/7 telephone support (Gee and Reed, 2013).

Largely the studies included similar interventions, although there was some variation. Black et al. (2013) applied the Systems Training for Emotional Predictability and Problem Solving (STEPPS) programme for BPD, which combines DBT skills training with elements of CBT and involves an additional systems element where members of the offenders system joined for a one-time 2-hour session. Further adaptations for the offender population were considered by Eccleston and Sorbello (2002). They simplified aspects of the programme (e.g. the names of modules and handouts) and delivered distress management earlier in the intervention due to the higher than average levels of stress in secure correctional facilities. Adaptations were also made to course materials and examples used to make it more relevant to an offender population. Trupin et al. (2002) applied DBT with adaptations for juvenile offenders including changing behavioural targets to reflect their needs, targeting problems behaviours occurring on the unit, and using individual sessions to explore offense related behaviours.

Summary of findings from DBT studies.

Overall, there were positive improvements in self-harm and suicide behaviours. Two of the three studies that measured changes in suicide and self-harm behaviours found significant reductions following DBT (Black et al., 2013, high quality; Trupin et al., 2002, medium quality). In a third study the authors also noted anecdotally that there was an overall downturn in self-harm, although very few of these behaviours were recorded systematically (Nee & Farman, 2005, medium quality).

One study found a reduction in the number of ACCT plans and a decrease in risk scores as part of a measure of psychological distress (Gee & Reed, 2013). Eccleston and Sorbello's (2002) pilot study found positive qualitative outcomes despite being unable to show significant quantitative differences in self-reported psychological stress between participants receiving an intervention and those on a waiting list. Both studies were low quality and so more research is needed to understand the effect of DBT on psychological distress associated with suicide and self-harm.

Nee and Farman (2005) was the only study in this review to compare different intervention lengths. Their medium quality study found that short-term DBT programmes showed marginally significant improvements in self-reported surviving and coping subscales of the RFL questionnaire (Linehan, 1993), however this was not found in the year-long groups. Further, this was the only study to include a measure of lethality of self-harm attempt at one of the prisons in their sample, using Linehan's (1993) scale. This showed a reduction in most lethal incident from 9 (death highly likely) pre-DBT to 5 (death 50:50) during DBT.

1.4.5.6 Interpersonal Therapies

Three studies utilised interventions based on interpersonal therapeutic approaches (Forster & Shaw, 2018; Johnson et al., 2019; Walker et al., 2017) and were all of medium or high quality. These approaches are informed by the idea that self-harming behaviour in imprisoned individuals serves to support coping with intrapersonal (e.g. strong negative emotions) or interpersonal (e.g. relationship problems) issues.

One study applied one-to-one Psychodynamic Interpersonal Therapy (PIT) for self-harming female prisoners, aiming to reduce suicide and self-harm thoughts and actions (Walker et al., 2017). Participants reflected on the circumstances that triggered self-harm, using shared exploration of these feelings in the here and now and linking feelings with problems and relationships to enhance their understanding of how they relate to the harming behaviour. Any issues between therapist and participant were explored, and a goodbye letter written to the prisoners. Prisoners learned alternative skills to help them to address their distress in a more adaptive way and reduce suicide and self-harm incidents. Therapeutic processes included generating hypotheses about the client's inner world.

Johnson et al. (2019) applied a similar intervention, but whereby Interpersonal Psychotherapy (IPT) enhanced the interpersonal elements via a group format. IPT uses therapeutic exploration of group dynamics, as well exploration with a therapist around changing communication, analysing interpersonal events, and building support networks outside the group (Klerman & Weissman, 1994). IPT views depression as a result of an interpersonal problem or life change. These tools were used to reduce symptoms of depression by addressing relationship difficulties and building social networks. The intervention was active, goal-orientated, present focused and semi-structured. As an RCT, this study applied a rigorous design, including use of a

treatment manual, blinding of investigators to intervention status of participants, recruiting targeted sample size and randomising participants to intervention and control groups.

Using similar relational processes, Forster and Shaw (2018) applied an intervention with young offenders informed by CBT, DBT and Psychodynamic principles. This focused around six themes: depression and self-injury, family problems, prison problems and peers, anger management, relationships and feelings about the future. The therapy was developmental in that it used positive corrective therapeutic relationships to target adolescents that were in prison during an important developmental period. As with other interventions with juveniles, steps were taken to enhance engagement and motivation. Co-development of the group involved participant facilitation of topics and participant suggestion of topics, including coping with anniversaries, grief and loss, and self-esteem. After the six key themes were covered, ongoing weekly sessions focused on group processes.

Summary of findings of interpersonal therapies studies.

One study found strong effects of interpersonal therapy for changes in hopelessness for intervention group over a control group (Johnson et al., 2019, high quality). However, another study found no significant changes in hopelessness between intervention group and an active control (Walker et al., 2017, medium quality).

These two studies also found no significant improvements in suicide ideation. One study used the Longitudinal Interval Follow-up Examination (LIFE, Keller et al., 1987), which uses Psychiatric Status Ratings (PSR), where a PSR of 3 or above on the LIFE indicates suicide ideation. Both studies used the BSSI to measure current ideation. It is an interesting finding that improvements in hopelessness did not

lead to improvements in suicide ideation as the two constructs have been well evidenced in other studies to correlate (e.g. O'Connor & Sheehy, 2000). Both studies found there were low rates of incident reports, time spent in segregation and self-reported suicide ideation, which led to reduced power to detect change in these outcomes.

Despite a small sample size of 12 participants, one study found significant improvement in severity of, and difficulty resisting, self-harm urges on the Alexian Brothers Urge to Self-Injure questionnaire (ABUSI; Washburn et al., 2010). This measure consists of five items, e.g. "at the most severe point, how strong was the urge to self-injure in the past week", where responses range from 0 ("none at all") to 7 ("strong urge and would have self-injured if able to"). Further reductions were found for number of days on ACCT plans, and on a risk subscale of psychological distress measure (Forster & Shaw, 2018, medium quality). However, this study did not include a control group, and the intervention was conducted at a single site and delivered by one team leading to difficulties in attributing these improvements to the intervention.

There were mixed findings for changes in suicide and self-harm behaviour. One study found significant reductions in self-harm acts (Forster & Shaw, 2018). One study found that there were more reports of self-harm from women in the control group and more self-harming behaviour throughout intervention period than in the intervention group but this was non-significant. However, Walker et al. (2017) reported high levels of attrition, which affected final numbers of participants receiving the intervention, and further the authors discussed lack of blinding of research team of participant intervention status when assessing outcome measures, as well as the impact of using only self-reported assessment for self-harm acts.

1.4.5.7 Combined Approaches

Two studies used a combination of psychological interventions and did not indicate that one therapeutic approach was applied primarily (Camp et al., 2018; Glowa-Kollisch et al., 2014). CBT and MI were present in both interventions. Both studies involved the implementation of new services, therefore making it difficult to establish the unique impacts of each intervention. Camp et al. (2018) developed an Enhanced Support Service (ESS) whereby individualised psychological interventions were offered on a 1:1 or 2:1 basis. Additional components included consultation and working with the system, and some level of psycho-social support e.g. employment and/or educational advice. The intervention covered CBT skills, goal setting, shared problem-solving, emotional regulation skills, and interpersonal skills.

Glowa-Killsch et al. (2014) also increased access to clinicians and psychological treatment. They additionally applied motivation enhancement therapy, social learning model, key coping and problem-solving skills for relapse prevention, and an incentive-driven behavioural management program. Intervention topic areas included engagement with treatment and medication, awareness of triggers and symptoms, coping skills, feelings and choices. The CBT elements of the intervention promoted identifying, re-evaluating, and changing dysfunctional emotions and behaviours. MI worked to help participants become more motivated to change their behaviour, and Motivational Enhancement Therapy increased awareness of consequences of behaviour in order to promote change.

Summary of findings of combined approaches studies.

There were mixed findings for reductions in suicide and self-harm and

behaviours, as these were not all statistically significant. One study found that only pre-intervention self-harm rates predicted post-intervention self-harm rates, rather than partaking in the intervention or intervention completion or length (Camp et al., 2018, medium quality). The authors noted that the study likely lacked statistical power to detect an effect, as there was a high attrition rate. A retrospective design was used in this study, with no control group. Data extraction relied on a standard electronic data reporting system, which depended on reporting standards of different individuals and therefore was exposed to variance. The study did find significant improvements in aggressive behaviours and non-compliance.

One study that was rated as high quality did find significant reductions in suicide acts (Glowa-Killsch et al., 2014), when comparing intervention participants with matched participants in the previous cohort without the programme. The number of prisoners placed on suicide watch, and time spent on suicide watch also reduced significantly. However, only time spent on suicide watch remained significantly reduced when they compared the treatment group with a group of the same cohort as treatment programme, who had refused to take part. This indicates there may have been generalisation of positive impacts of intervention to the control group in the same cohort.

1.4.6 Suicide and self-harm outcomes

The studies in this review have included a wide range of different means to assess the impact of interventions on suicide or self-harm outcomes and these have been broadly categorised into behavioural and psychological outcomes, as discussed below. By nature of this review question, the studies differ in their aims and intervention targets and where measurement of psychological factors related to

suicide and self-harm has been carried out, it has been explicitly stated by the authors that this measure has been used to indicate change in suicidality or self-harm.

1.4.6.1 Behavioural outcomes

Five of the studies exclusively used measures of suicide and self-harm related behaviours (Black et al., 2013; Camp et al., 2018; Glowa-Killsch et al., 2014; Riaz & Agha, 2012; Trupin et al., 2002), and eight studies used a combination of behavioural and psychological measures.

Suicide and self-harm incidents.

Seven studies measured the number of suicide or self-harm incidents pre- and post-intervention. A common theme from the studies was the difficulty in measuring behaviour that occurs so infrequently. Many studies adapted their definitions to include both suicide and self-harm, or suicide thoughts and feelings. For example, Black et al. (2013) combined self-harm and suicide behaviours into a single variable for analysis, as there was a low base-rate of these behaviours reported.. One study reported that too few behaviours were reported over the study period, which led to incomplete data being recorded (Nee & Farman, 2005).

There was a discrepancy among studies in definitions of suicide or self-harm incidents. One study included ‘suicide precautions’ (described as a type of restricted punishment used by staff in response to suicide or self-harm behaviour, although not clearly defined), and ‘para-suicidal’ acts including self-mutilation, suicide threats, and suicide attempts (Trupin et al., 2002). The authors created a composite measure, which involved grouping these factors with other indicators of behavioural problems, such as staff punitive acts and classroom disruption. This made it impossible to ascertain from the results the changes specific to suicide and self-harm behaviours.

Similarly, another study classified self-harm as a type of 'disruptive behaviour' (Camp et al., 2018), along with acts of aggression, noncompliance, and positive behaviours. This may say something about the way that self-harm and suicide is viewed in correctional settings i.e. as problematic, or even requiring punishment. Although grouped conceptually, this study did not create a composite measure. Other studies used more widely known definitions, such as NOMS defined self-harm behaviours (Riaz & Agha, 2012).

Only one study included a measure of lethality of attempt at one of the prison sites in the study (Nee & Farman, 2005), despite some definitions of suicide and self-harm being dependent on lethality.

There was variation in the methods of data collection used to measure suicide and self-harm incidents, and a number of the studies did not report in sufficient detail how this was undertaken. Methods included retrospective gathering of data from prison files, staff recordings using standardised shift reports and charts, incidents reported to staff members, and hand trawling of prison self-harm records (e.g. F2052SH forms). One study described extracting behavioural outcomes from National Offender Management Service (NOMS) information system using a coding system where one type of behaviour at one moment in time equated to one occurrence of that behaviour, and each behaviour category was counted manually and double-checked by researchers. These data collection methods are limited by their reliance on accurate record keeping, and some evidence has shown that data recorded in prison notes can be subjective, vague and show great variation (Senior et al., 2007).

ACCT/ suicide watch.

Three studies used a measure of whether an individual was being monitored for risk as an outcome indicator. One study recorded time spent on suicide watch and being placed on suicide watch as outcome measures of their intervention (Glowa-Killsch et al., 2014). Suicide watch involves regular or continuous monitoring of a prisoner who is at current risk of committing suicide. Two studies used whether a participant was on an ACCT plan, and number of days this plan remained open (Forster & Shaw, 2018; Gee & Reed, 2013) to assess outcome, with an assumption being made (perhaps incorrectly) that an ACCT is only closed once the risk has been reduced. These methods of measurement rely on accurate detection and reporting and are therefore exposed to variance through individual differences. It also relies on valid self-report, for example, if a prisoner wanted the ACCT to be closed they may mislead this process, rather than there being an actual reduction in risk. Forster and Shaw (2018) discussed how using ACCTs incorporates not just behaviours, but also urges, distress and other criteria that would lead an individual to be placed on an ACCT, therefore encompassing several outcomes. ACCT plans are themselves management strategies for suicide and self-harm and therefore introduce confounding factors when determining impact of a separate psychological intervention.

Staff assessment of behaviour.

One study measured changes in self-harm through observer ratings (e.g. staff assessments of behavior; Welfare & Mitchell, 2005). A Staff Assessment Checklist developed by the authors was completed by staff who had frequent contact with the participants. Staff rated sixteen items relating to problem solving, self-esteem, mood and social skills. No example items were included in the paper, but items related to participant's actual or threatened self-injury, attendance at the gym, and appearing to

be bullied or coerced by other participants. However, this tool was not validated and this method is highly vulnerable to misreporting and bias, as it relies purely on third-party reporting.

Use of self-harm inventories.

Three of the studies utilised participant self-reported inventories of self-harm or suicide behaviours (Johnson et al., 2019; Riaz & Agha, 2012; Walker et al., 2017). One study used a measure of past suicide ideation as this does not require reporting to prison staff and so aimed to address possible underreporting (Johnson et al., 2019). However, this study still found too few participants reporting suicide ideation to be meaningful. The other two studies gathered data on the number and frequency of self-harming behaviours using the Deliberate Self-harm Inventory (DSHI; Gratz, 2001); a 17-item, behaviour based, self-report measure exploring the type, severity, frequency and duration of self-harm. One of these studies used the DSHI for baseline information, and developed the Self Report of Self-harm Incidents Questionnaire (SRSHIQ; Walker et al., 2017) for use during the intervention. They noted that the DSHI did not capture the full range of self-harming behaviours e.g. ligaturing, and so used a method of recording all self-harming behaviours, including self-poisoning. The DSHI was originally selected over other measures as it was easier to understand and shorter, and had been used previously with prison populations. The authors commented that a limitation to the study was not including a non-self-report, objective measure, such as checking ACCT records.

As this data was gathered via self-report only, there are the typical limitations associated with this methodology i.e. proneness to biased reporting, demand characteristics and Hawthorne effect due to non-blinding of participants. It also seems that

data was limited by options available in the inventories, which highlights the importance of developing inclusive measurement tools that incorporate a comprehensive list of suicide and self-harm behaviours.

1.4.6.2 Psychological outcomes

Three of the studies reported changes in suicide or self-harm outcomes exclusively through changes in psychological factors, such as scale measures of mood, cognitions, and attitudes. Eight of the studies utilised a combination of psychological and behavioural measures, as previously discussed.

Three studies looked at outcomes related to coping and stress. Coping ability can be linked with suicide and self-harm, as these behaviours can be seen as maladaptive responses to problems, stress and negative life events (Dear, Thomson, Hall & Howells, 2002). One study reported changes on the Difficulties and Coping Profile (DCP), developed specifically for the study and measured perceived changes in problem severity and coping, following therapy (Mitchell et al., 2011). This questionnaire included self-harm and suicide ideation as one of the problems measured. Two further studies (Forster & Shaw, 2018; Gee & Reed, 2013) also reported results from a subscale of a larger measure; the risk/harm subscale of the Clinical Outcomes in Routine Evaluations (CORE; Evans et al., 2000). The CORE measures psychological distress and has 34 items, each on a 5 point likert scale.

Seven studies used self-report measures of likelihood of suicide and self-harm, through measuring levels of ideation, probability and urges. Suicide ideation is an important predictor of successful suicide (Beck et al., 1985). These measures of changes in internal processes can potentially indicate longer lasting changes to suicide and self-harm behaviour, through tapping into an individual's thoughts,

feelings, desires and urges to harm themselves, rather than measuring external expressions of the behaviour only. Whether a person thinks about, or wants to, harm themselves is a strong indicator of whether they will engage in the behaviour (Morgan & Stanton, 1997; O'connor, Smyth, Ferguson, Ryan & Williams, 2013). Furthermore, individuals that ideate about suicide are ten times more likely than non-ideators to attempt suicide (Retterstol, 1993). However, for these measures again there is reliance on validity of self-report, mentioned previously. Researchers in this area have found that many prisoners underreport current suicide ideation because the process of being on suicide watch in prison is undesirable (Pratt et al., 2015). Also, despite thinking about suicide or self-harm, most of these individuals do not go on to harm themselves (Dhingra, Boduszek & O'Connor, 2015), and so changes in these outcomes may not necessarily translate to changes in behaviours, as seen in the included studies.

Three studies measured hopelessness, referencing this construct as a psychological factor indicative of psychological morbidity associated with successful suicide. This is in-line with speculation that hopelessness may be a trans-diagnostic factor for increasing likelihood of suicide (Pratt, 2015).

A different three studies measured changes in suicide and self-harm related attitudes: two studies through the surviving and coping subscale of the Reasons for Living Inventory measure (RFL; Linehan, 1993) and one study referenced changes in the death-related and self-related domains of the Life Attitudes Scale (LAS; Rohde et al., 1996) to reflect changes in suicide proneness (Rohde et al., 2004). Negative survival and coping beliefs have been found to be predictive of suicide probability (Mohammadkhani, Khanipour, Azadmehr, Mobramm & Naseri, 2015).

Three studies involved the use of novel measures developed for their respective studies. Where this occurred the studies did not include information about psychometric properties of the measures, such as internal reliability, and as the measures had not yet been validated, no firm conclusions can be made in regards to the outcome they aimed to measure.

1.5 Discussion

To the author's knowledge, this is the first review focusing solely on the impact of psychological interventions on suicide and self-harm outcomes with prisoners that has included an assessment of quality. Seventeen studies were found to meet the inclusion criteria, despite the inclusion of worldwide studies, highlighting the limited research in this area. The psychological interventions applied are in-line with NICE (2012) guidelines for the treatment of suicide and self-harm, which includes treatments incorporating elements of cognitive behavioral, psychodynamic and problem-solving therapies. The majority of interventions were based on a cognitive behavioural approach and delivered as a group therapy.

Summary of overall findings

Overall, there was positive evidence found for psychological interventions improving suicide *and* self-harm behavioural and psychological outcomes in offenders. All studies reported improvement in scores on some of their respective measures, however only eleven of the studies found significant results. This is explained by varied study quality, as the CBT and DBT interventions that did not find significant changes were all of low quality. Further variance in findings was introduced by the way in which outcomes were measured, and as this varied so greatly between studies it is difficult to make firm, generalisable conclusions about the intervention approaches and their impact on suicide and self-harm. There are

national approaches to management of suicide and self-harm in prisons, and other secure facilities, that are strategy and management based, however this review evidences the lack of consistency in healthcare approaches shown by the range of psychological interventions across a relatively low number of studies.

High and medium quality studies showed that CBT and DBT interventions were helpful in reducing the number of self-harm and suicide incidents, and changing attitudes relating to engaging in suicide and self-harm. More specifically, reducing severity of suicide and self-harm thoughts, perceptions of ability to cope, life-extending beliefs, and reasons for living. There are four mechanisms that cognitive and behavioural interventions are said to work through to produce change in suicide and self-harm: cognitive restructuring, therapeutic relationship, emotional regulation, and behavioural skills training (Slee, Arensman, Garnefski & Spinhoven, 2007). Changes in beliefs and attitudes may reflect the cognitive restructuring mechanism. Problem solving was found to be helpful in reducing psychological factors, such as hopelessness, depression and anxiety, as well as improving problem solving skills, however impact on behavioural outcomes is unknown. Interpersonal intervention studies were helpful in reducing behavioural and psychological outcomes of suicide and self-harm, including hopelessness, self-harm urges, self-harm incidents, and number of days on ACCT plans, and less helpful in reducing self-reported suicide ideation. Interventions applied in combination, including CBT, motivational interviewing and motivational enhancement, found mixed findings where one study was helpful in reducing suicide acts and factors related to suicide watch, and the other study did not find significant improvements, but was of lower quality.

This review provides evidence that brief interventions can produce some positive results, even in DBT interventions that are typically of longer duration. This is supported by one study that allowed for direct comparison between shorter and longer term DBT programs. Interestingly, the longer-term intervention of one year, which was the longest intervention in the studies included in this review, found an increase in incidents of self-harm at one point during treatment, which then reduced and remained lower than baseline by the end of treatment. This is a positive finding as DBT has been identified as being difficult to implement in secure facilities due to typical length of intervention and intensity (Gratz, Bardeen, Levy, Dixon-Gordon & Tull, 2015). However, longer follow-ups with the shorter programmes are needed to see if effects are enduring.

Overall, all of the medium or high quality studies included components of CBT, therefore this review provides some evidence for the application of CBT in addressing suicide and self-harm outcomes and related psychological factors, in secure correctional facilities. This is not a surprising finding as the majority of evidence with non-forensic populations has found that CBT is the most effective treatment (Ougrin et al., 2015; Slee et al., 2008, Tarrier et al., 2008). Furthermore, CBT is a brief, time-limited therapy that has been applied to a range of problems, in groups and individually (Tarrier et al., 2008), and these factors make it desirable in a setting like a prison.

In consideration of the research literature into risk factors for suicide and self-harm, which has drawn on existing models and theories of suicide and self-harm, this review found that only a handful of studies clearly referenced a psychological model underpinning the intervention applied. Knowing that there is a range of empirical evidence for models and theories of suicide and self-harm, for

example, thwarted belongingness and perceived burdensomeness (Joiner, 2005), perceptions of entrapment (Williams, 2001), negative and positive reinforcement (Nock & Prinstein, 2004), it is interesting that the outcome measures used rarely map directly onto these constructs. Many of the included studies made reference to overall approaches, such as cognitive behavioural, but not particular models, which have significant variations. This means that where studies did find positive results, the specific mechanisms behind these are still unclear (Slee et al., 2007).

Summary of outcome measures

There were sixteen different outcome measurements used across the studies in this review, plus a larger range of data collection methods. This made it difficult to form general conclusions about interventions. Further, methods of measuring change and data collection were exposed to limitations, such as self-reporting, reliance on data systems and grouping various outcome variables.

There were mixed findings in this review for improvements in suicide self-harm behaviours and in psychological factors e.g. hopelessness, depression and self-esteem. There have been mixed findings for CBT leading to reductions in suicide behaviour *and* associated psychological factors of suicide and self-harm, with some studies finding this effect (Slee et al., 2008), and others finding contrary evidence (Davidson et al., 2006). Where corresponding changes in behaviour are not seen, this can lead to a question of generalisability of the skills developed in psychological interventions. Overall, we know actual rates of suicide and self-harm, especially suicide attempts, have low base rates reported and so behavioural measures need to be accompanied by other psychological measures.

Studies that reported non-significant findings for behavioural outcomes appeared to be due to methodological limitations, as too few incidents of suicide and

self-harm behaviours occurred during the intervention time period to measure change reliably. This was a commonly reported issue within the studies in this review. Many studies had small sample sizes, meaning there was a high possibility of Type 1 error, with studies being unable to detect effects that may have been present. Other steps, such as multi-sites and longer intervention periods can improve number of incidents available for comparison.

1.5.1 Limitations

This review is somewhat limited due to the inclusion of studies of varied quality, a consequence of the limited research in this area at this time. Many of the included studies had small sample sizes, leading to a lack of power to detect possible intervention effects. It may be that significant effects would have been found with larger samples. Low numbers of acts of suicide and self-harm also contributed to a lack of power in many of the studies. Only seven studies included a control, which means where a control group was not used it is difficult to make conclusions about the impact of the intervention. There were also challenges highlighted in the use of control groups and the authors of one study published a later paper (Nee & Farman, 2008), which discussed that generalisation of the positive impact of DBT to non-participating prisoners on the wing was highly probable.

Further limitations included convenience sampling methods and high attrition rates, which introduced potential bias into participant samples. For example, attrition rates can bias samples to include participants more engaged with services. Some of studies with relatively more rigour than other studies, such as RCT's, did not include blinding of participants to treatment conditions and this can lead to a desirability effect in self-report of suicide and self-harm. The typical limitations to self-report are also applicable for the included studies, but may possibly be more salient in the

sensitive area of suicide and self-harm research (e.g. not wanting to report thoughts or acts of suicide or self-harm due to possible repercussions). However, observer reports of incident rates (e.g. staff observations) are also flawed in that they rely significantly on accurate communication and reporting of suicide or self-harm behaviours.

Despite the variance in study design, there are twelve medium or high quality studies included in this review. Additionally, too many different outcomes were found to make comparisons, however this review discusses some positive findings and usefully outlines intervention approaches and content by nature of its narrative design.

Inclusion criteria was kept relatively broad in order to acknowledge the number of different interventions and outcomes used in research. Studies were excluded if they did not include direct or indirect self-harm and suicide outcomes, and where indirect these had to be explicitly identified by the authors. This may have therefore resulted in a selection bias, whereby less clear studies, although relevant, were excluded due to lack of detail. However, study aims and descriptions of outcome measures are key parts of empirical papers (White, 2005), and so this data was largely available. Through inclusion of studies where suicide and self-harm outcomes were indirect outcomes, this review allowed the inclusion of wider literature.

Like many quality assessment tools, the KMET relies on reporting in trials, and so can be a reflection of this rather than issues with validity (Hartling et al., 2012). Therefore, it may be that the studies are of higher quality than reported and so this must be considered when interpreting the quality ratings. Further, there were some areas of study quality that are not covered by this tool, such as the use of

follow-ups post-intervention and generalisability of findings. Although these points were discussed in the body of the review, they were not included in quality ratings. Further, only a proportion of the papers were rated by a second rater, however those double rated were found to have high inter-rater reliability, leading to some confidence in the ratings assigned.

Despite these limitations, strengths of this review include the use of databases covering a range of topic areas, including nursing, psychiatric and medical. The databases were also cross-referenced to ensure they held journals publishing articles relevant to prison and forensic populations. This review's focus is more targeted through the inclusion of studies with a more homogenous sample by excluding forensic hospital patients, and through a focus on psychological interventions only. Individuals in prisons and secure closed facilities have received less research attention than the general population and forensic patients, and despite a great deal of evidence highlighting the high prevalence of psycho-social risk factors, there is the continued application of generic guidance to this population. This review adds to specific knowledge about offender care.

1.5.2 Clinical implications

This review provides guidance for establishments experiencing problems with suicide and/or self-harm, in terms of outline of the content of interventions and characteristics of delivery. Support is offered for the applicability of similar treatments for both suicide *and* self-harm, as most studies that found significant findings impacted positively on both. Insight is also provided into the feasibility of delivering psychological interventions in secure correctional settings and the review overall indicates that time-limited, brief interventions can deliver promising results, and when delivered by non-psychological staff. This is particularly relevant to

initiatives to improve the provision of safe and high quality services for individuals vulnerable to suicide, i.e. prisoners, through reducing incidence of suicide and self-harm behaviours and training staff in management of suicide behaviour (World Health Organisation, 2018).

This review suggests there may be policy implications for the availability of psychological interventions, e.g. CBT, for prisoners identified as at-risk of suicide and self-harm, and promotes avoidance of segregation and confinement. Clearly different settings are implementing different approaches and this review highlights a need for consistency across sites. However, the evidence is somewhat limited as outlined in this review, and so future higher quality studies may wish to replicate positive results first.

The findings of this review suggest the inclusion of adaptations when applying psychological interventions for juvenile offenders at risk of suicide and self-harm, such as including a motivational aspect to the intervention, simplified materials, and offence related modules.

Evidence is provided for the effectiveness of current practices in prisons, such as ACCT plans, in improving suicide and self-harm outcomes, as some studies that utilised TAU comparison groups found improvements in both intervention and control groups. However, ACCT plans remain limited in that they do not address specific risk factors known to be associated with suicide and self-harm, and are predominantly reactive rather than proactive interventions. The inclusion of psychological interventions such as CBT in a multi-faceted management approach for suicide and self-harm in prisons may help in to address the complexity of this issue.

One of the difficulties of measuring suicide and self-harm indirectly (e.g. via reported urges and self-reported ideation), is that not everyone goes on to engage in the behaviours (Dhingra et al., 2015). Acts of suicide and self-harm overall have low base rates reported, and so staff working with these populations must be aware of other indicators of risk, and this review suggests that interventions can also positively effect changes in other outcomes of suicide and self-harm.

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1.5.3 Future research

One of the main findings from this review is that there are a number of shared limitations between the studies. There is clear progression in quality from earlier papers that focused more on clinical practice review, to some of the later studies that have used more rigorous designs such as RCT's, which shows that there is some development happening in this research area, which future research can build upon. Most clearly, the use of larger scale, multi-site designs, with longer data collection periods and control groups is indicated.

To address the potential challenges caused by intervention and control group participants living in close proximity to each other, future research should utilise control groups from different sites or cohorts, as done by two of the studies included in this review. This would allow for stronger conclusions to be made about the impact of intervention.

Due to the potential biases that can arise from prisoner self-report and staff reports a national approach to recording this information would benefit future research. Studies have found higher likelihood of disclosure of suicide and self-harm where there is anonymity and assurance of confidentiality in research (Safer, 1997; Velting et al., 1998) i.e. self-report measures over clinical interviews, however this

review suggests that future research make use of other additional measures of these constructs.

Many of the studies have attributed limitations in methodology to the nature of conducting research in these settings. This speaks to an issue wider than individual studies, and points to a need to address factors that can act as barriers to the running of psychological research in prisons, such as increasing training for staff, and involving prisoners in the design of more studies. There is recognition that these establishments have prioritised aims of safety and security, and so exploring ways that research can exist alongside this is important if any further progress is to be made in this area.

Future research should use consistent, standardised outcome measures, for example, selecting tools used in previous research with established and validated psychometric properties. This will facilitate comparisons between studies and the pooling of data, in order to reach stronger conclusions. Direct measures of suicide and self-harm behaviours should be included, where possible, that do not rely on self or external report, in order to explore whether changes in skills learned within psychological interventions have generalised to behaviour. Particularly as NICE guidelines advise that self-harm interventions should aim for a reduction of self-harming behaviour (NICE, 2012).

Future research should:

1. use, where possible, a higher quality research design (e.g. , multi-site, longitudinal data collection, RCT etc.)
2. select outcome measures based on the theoretical underpinnings or aims of the intervention being delivered.
3. use a validated standardised outcome measure of suicide and self-harm,

4. include a behavioural measure as well as measure of psychological factors of suicide and self-harm
5. use a control group, and, where possible, a control group at another site or comparison to previous cohort data

1.5.4 Conclusion

This review highlights that there has been some useful research into the impact of psychological interventions on suicide and self-harm outcomes in offenders in secure correctional facilities. However, a prominent finding is the lack of high-quality, rigorous research in this area. This points strongly to the need for future research to build on existing studies and address the highlighted research limitations where possible; progressing this field further towards a stronger empirical evidence base that can support the treatment of offenders at risk of self-harm and/or suicide.

References

Achenbach, T. M. (1991). *Manual for the youth self-report and 1991 profile*. Burlington, VT: Department of Psychiatry, University of Vermont.

American Psychiatric Association (1994). *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*. Washington, DC

Baggio, S., Gétaz, L., Tran, N. T., Peigné, N., Chacowry Pala, K., Golay, D., ... & Wolff, H. (2018). Association of overcrowding and turnover with self-harm in a Swiss pre-trial prison. *International Journal of Environmental Research and Public Health*, *15*(4), 601.

Barker, E., Kõlves, K., & De Leo, D. (2014). Management of suicidal and self-harming behaviors in prisons: systematic literature review of evidence-based activities. *Archives of Suicide Research*, 18(3), 227-240.

Baharin, A., Marceau, E.M., & Grenyer, B (2018). *Treatment of self-harm in correctional settings: systematic review.* PROSPERO. Retrieved from: http://www.crd.york.ac.uk/PROSPERO/display_record.php?ID=CRD42018093311

Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: psychometric properties. *Journal of Consulting and Clinical Psychology*, *56*(6), 893.

Beck, S. Kovacs, & Garrison. (1985). Hopelessness and eventual suicide: A 10-year prospective study of patients hospitalized with suicidal ideation. *The American Journal of Psychiatry*.

Beck, A. T., Kovacs, M., & Weissman, A. (1979). Assessment of suicidal intention: the Scale for Suicide Ideation. *Journal of Consulting and Clinical*

Psychology, 47(2), 343.

Beck, A. T., & Steer, R. A. (1988). *Manual for the Beck hopelessness scale*. San Antonio, TX: Psychological Corporation.

Beck, A. T., & Steer, R. A. (1991). *BSI, Beck scale for suicide ideation: manual*. Psychological Corporation.

Beck, A. T., Steer, R. A., Beck, J. S., & Newman, C. F. (1993). Hopelessness, depression, suicidal ideation, and clinical diagnosis of depression. *Suicide and Life-Threatening Behavior*, *23*(2), 139-145.

Beck, A.T., Steer, R.A., Brown, G.K. (1996). *Manual for the Beck Depression Inventory-II*. The Psychological Corporation: San Antonio, TX.

Beck, A. T., Weissman, A., Lester, D., & Trexler, L. (1974). The measurement of pessimism: the hopelessness scale. *Journal of Consulting and Clinical Psychology*, *42*(6), 861.

Biggam, F. H., & Power, K. G. (2002). A controlled, problem-solving, group-based intervention with vulnerable incarcerated young offenders. *International Journal of Offender Therapy and Comparative Criminology*, *46*(6), 678-698.

Black, D. W., Blum, N., McCormick, B., & Allen, J. (2013). Systems training for emotional predictability and problem solving (STEPPS) group treatment for offenders with borderline personality disorder. *The Journal of Nervous and Mental Disease*, 201(2), 124-129.

Camp, J., Joy, K., & Freestone, M. (2018). Does “Enhanced Support” for Offenders Effectively Reduce Custodial Violence and Disruption? An Evaluation of the Enhanced Support Service Pilot. *International Journal of Offender Therapy*

and Comparative Criminology, *62*(12), 3928-3946.

Chapman, A. L., Gratz, K. L., & Brown, M. Z. (2006). Solving the puzzle of deliberate self-harm: The experiential avoidance model. *Behaviour Research and Therapy*, *44*(3), 371-394.

Clarke, G. N., Lewinsohn, P. M., & Hops, H. (1990). *Instructor's manual for the adolescent coping with depression course.* Portland, OR: Kaiser Permanente Center for Health Research.

Cramer, R. J., Wechsler, H. J., Miller, S. L., & Yenne, E. (2017). Suicide prevention in correctional settings: Current standards and recommendations for research, prevention, and training. *Journal of Correctional Health Care*, 23(3), 313-328.

Cull, J. G., & Gill, W. S. (1982). *Manual for the suicide probability scale*. Los Angeles: Western Psychological Services.

D'Zurilla, T. J. (1986). *Problem-solving therapy*. New York: NY, Springer Publishing Co.

D'Zurilla, T. J., Nezu, A. M., & Maydeu-Olivares, A. (1996). *Manual for the Social Problem Solving Inventory—Revised*. North Tonawanda, NY: 0-370.

Daniel, A. E. (2007). Care of the mentally ill in prisons: Challenges and solutions. *Journal of the American Academy of Psychiatry and the Law*, 35, 406–410.

Davidson, K., Norrie, J., Tyrer, P., Gumley, A., Tata, P., Murray, H., & Palmer, S. (2006). The effectiveness of cognitive behavior therapy for borderline personality disorder: results from the borderline personality disorder study of cognitive therapy (BOSCOT) trial. *Journal of Personality Disorders*, 20(5), 450-465.

Dear, G. E., Thomson, D. M., Hall, G. J., & Hall, K. (1998). Self-inflicted injury and coping behaviours in prison. In J. Kosky, H. S. Eshkevarky, R. Hassan, & R. Goldney (Eds.), *Suicide prevention: The global context* (pp. 198–199). New York: Plenum Press.

Dhingra, K., Boduszek, D., & O'Connor, R. C. (2015). Differentiating suicide attempters from suicide ideators using the Integrated Motivational–Volitional model of suicidal behaviour. *Journal of Affective Disorders, 186,* 211-218.

Dixon-Gordon, K., Harrison, N., & Roesch, R. (2012). Non-suicidal self-injury within offender populations: A systematic review. *International Journal of Forensic Mental Health,* 11(1), 33-50

Duncan, E. A., Nicol, M. M., Ager, A., & Dalgleish, L. (2006). A systematic review of structured group interventions with mentally disordered offenders. *Criminal Behaviour and Mental Health*, *16*(4), 217-241.

Eccleston, L., & Sorbello, L. (2002). The RUSH Program—Real Understanding of Self-Help: A suicide and self-harm prevention initiative within a prison setting. *Australian Psychologist*, *37*(3), 237-244.

Evans, C., Mellor-Clark, J., Margison, F., Barkham, M., Audin, K., Connell, J., & McGrath, G. (2000). CORE: Clinical Outcomes in Routine Evaluation. *Journal of Mental Health*, 9, 247–255.

Favril, L., Vander Laenen, F., Vandeviver, C., & Audenaert, K. (2017). Suicidal ideation while incarcerated: Prevalence and correlates in a large sample of male prisoners in Flanders, Belgium. *International Journal of Law and Psychiatry*, 55, 19-28.

Fazel, S., Cartwright, J., Norman-Nott, A., & Hawton, K. (2008). Suicide in prisoners: a systematic review of risk factors. *J Clin Psychiatry*, *69*(11), 1721-31.

Fliege, H., Lee, J. R., Grimm, A., & Klapp, B. F. (2009). Risk factors and correlates of deliberate self-harm behavior: A systematic review. *Journal of Psychosomatic Research*, *66*(6), 477-493.

Forster, O., & Shaw, J. (2018). Self-injury group psychotherapy intervention for young offenders: a pilot study. *The Journal of Forensic Psychiatry & Psychology*, *29*(5), 733-743.

Fraser, A., Gatherer, A., & Hayton, P. (2009). Mental health in prisons: great difficulties but are there opportunities? *Public health*, *123*(6), 410-414.

Gee, J., & Reed, S. (2013). The HoST programme: A pilot evaluation of modified dialectical behaviour therapy with female offenders diagnosed with borderline personality disorder. *European Journal of Psychotherapy & Counselling*, *15*(3), 233-252.

Glowa-Kollisch, S., Lim, S., Summers, C., Cohen, L., Selling, D., & Venters, H. (2014). Beyond the bridge: Evaluating a novel mental health program in the New York City jail system. *American Journal of Public Health*, *104*(11), 2212-2218.

Gratz, K. L. (2001). Measurement of deliberate self-harm: Preliminary data on the Deliberate Self-Harm Inventory. *Journal of Psychopathology and Behavioral Assessment*, 23(4), 253-263.

Gratz, K. L., Bardeen, J. R., Levy, R., Dixon-Gordon, K. L., & Tull, M. T. (2015). Mechanisms of change in an emotion regulation group therapy for deliberate

self-harm among women with borderline personality disorder. *Behaviour Research and Therapy,* 65, 29-35.

Gunnell, D., Hawton, K., Ho, D., Evans, J., O'connor, S., Potokar, J., ... & Kapur, N. (2008). Hospital admissions for self-harm after discharge from psychiatric inpatient care: cohort study. *Bmj*, 337, a2278.

Hamilton, M. (1980). Rating depressive patients. *The Journal of Clinical Psychiatry*, 41, 21–24.

Hartling, L., Hamm, M., Milne, A., Vandermeer, B., Santaguida, P. L., Ansari, M., ... & Dryden, D. M. (2012). *Validity and inter-rater reliability testing of quality assessment instruments.* Rockville, MD: Agency for Healthcare Research and Quality.

Hawton, K., Linsell, L., Adeniji, T., Sariaslan, A., & Fazel, S. (2014). Self-harm in prisons in England and Wales: an epidemiological study of prevalence, risk factors, clustering, and subsequent suicide. *The Lancet*, *383*(9923), 1147-1154.

Hawton, K., Witt, K.G., Salisbury, T.L., Arensman, E., Hazell, P. et al. (2016). Psychosocial interventions following self-harm in adults: a systematic review and meta-analysis. *Lancet Psychiatry*, 3, 740–750.

Her Majesties Prison and Probation Service (2011). *Management of prisoners at risk of harm to self, to others and from others (Safer Custody).* Prison Service Instruction 64/2011. Retrieved from: https://www.gov.uk/guidance/suicide-self-harm-prevention-in-prison

Her Majesties Prison and Probation Service (2019). *Suicide and self-harm prevention in prison*. Retrieved from: https://www.gov.uk/guidance/suicide-self-harm-

prevention-in-prison

Hetrick, S. E., Robinson, J., Spittal, M. J., & Carter, G. (2016). Effective psychological and psychosocial approaches to reduce repetition of self-harm: a systematic review, meta-analysis and meta-regression. *BMJ open*, 6(9), e011024.

Jackson, J. (2003) Outcome research with high-risk inmates. *Behavior Therapy,* 26, 215–6.

Johnson, J., Gooding, P., & Tarrier, N. (2008). Suicide risk in schizophrenia: explanatory models and clinical implications, The Schematic Appraisal Model of Suicide (SAMS). *Psychology and Psychotherapy: Theory, Research and Practice*, 81(1), 55-77.

Johnson, J. E., Stout, R. L., Miller, T. R., Zlotnick, C., Cerbo, L. A., Andrade, J. T., ... & Wiltsey-Stirman, S. (2019). Randomized cost-effectiveness trial of group interpersonal psychotherapy (IPT) for prisoners with major depression. *Journal of Consulting and Clinical Psychology*, Advance online publication, sent by first author.

Johnson, J. E., & Zlotnick, C. (2012). Pilot study of treatment for major depression among women prisoners with substance use disorder. *Journal of Psychiatric Research*, 46(9), 1174-1183.

Joiner, T.E., 2005. *Why People Die by Suicide*. Harvard University Press, Cambridge, MA.

Joiner, T. E., Conwell, Y., Fitzpatrick, K. K., Witte, T. K., Schmidt, N. B., Berlim, M. T., ... & Rudd, M. D. (2005). Four studies on how past and current suicidality relate even when" everything but the kitchen sink" is covaried. *Journal of*

Abnormal Psychology, *114*(2), 291.

Keller, M. B., Lavori, P. W., Friedman, B., Nielsen, E., Endicott, J., McDonald-Scott, P., & Andreasen, N. C. (1987). The longitudinal interval follow-up evaluation: a comprehensive method for assessing outcome in prospective longitudinal studies. *Archives of General Psychiatry*, 44(6), 540-548.

Khan, K. S., Ter Riet, G., Glanville, J., Sowden, A. J., & Kleijnen, J. (2001). *Undertaking systematic reviews of research on effectiveness: CRD's guidance for carrying out or commissioning reviews*. CRD report No. 4 (2nd Edition), NHS Centre for Reviews and Dissemination.

Klerman, G. L., & Weissman, M. M. (1994). *Interpersonal psychotherapy of depression: A brief, focused, specific strategy*. Jason Aronson, Incorporated.

Klonsky, E. D., May, A. M., & Saffer, B. Y. (2016). Suicide, suicide attempts, and suicidal ideation. *Annual Review of Clinical Psychology*, *12*, 307-330.

Kmet, L. M., Cook, L. S., & Lee, R. C. (2004). *Standard quality assessment criteria for evaluating primary research papers from a variety of fields*. Alberta Heritage Foundation for Medical Research, Edmonton, Alberta.

Kroll, L., Woodham, A., Rothwell, J., Bailey, S., Tobias, C., Harrington, R., & Marshall, M. (1999). Reliability of the Salford needs assessment schedule for adolescents. *Psychological Medicine*, 29(4), 891-902.

Lewis, D. O. (1990). Neuropsychiatric and experiential correlates of violent juvenile delinquency. *Neuropsychology Review*, *1*(2), 125-136.

Linehan, M. M. (1993). *Cognitive-behavioral treatment of borderline personality disorder.* New York: Guilford.

Linehan, M. M., Goodstein, J. L., Nielsen, S. L., & Chiles, J. A. (1983). Reasons for staying alive when you are thinking of killing yourself: the Reasons for Living Inventory. *Journal of Consulting and Clinical Psychology*, *51*(2), 276.

Lohner, J., & Konrad, N. (2006). Deliberate self-harm and suicide attempt in custody: Distinguishing features in male inmates' self-injurious behavior. *International Journal of Law and Psychiatry*, *29*(5), 370-385.

Lovibond, S. H., & Lovibond, P. F. (1996). *Manual for the depression anxiety stress scales*. Psychology Foundation of Australia.

Marzano, L., Adler, J. R., & Ciclitira, K. (2015). Responding to repetitive, non-suicidal self-harm in an English male prison: Staff experiences, reactions, and concerns. *Legal and Criminological Psychology*, 20(2), 241-254.

Marzano, L., Hawton, K., Rivlin, A., Smith, E. N., Piper, M., & Fazel, S. (2016). Prevention of suicidal behavior in prisons: an overview of initiatives based on a systematic review of research on near-lethal suicide attempts. *Crisis*.

May, A. M., & Klonsky, E. D. (2016). What distinguishes suicide attempters from suicide ideators? A meta-analysis of potential factors. *Clinical Psychology: Science and Practice*, *23*(1), 5-20.

McDougall, C., Cohen, M. A., Swaray, R., & Perry, A. (2003). The costs and benefits of sentencing: A systematic review. *The Annals of the American Academy of Political and Social Science*, *587*(1), 160-177.

Ministry of Justice, National Offender Management Service. (2013). *Management of prisoners at risk of harm to self, to others and from others (Safer Custody) PSI* 64/2011. Retrieved from: https://www.justice.gov.uk/offenders/psis/prison-service-instructions-2011

Ministry of Justice. (2018). *Safety in Custody Statistics, England and Wales: Update to March 2018.* Retrieved from: https://www.gov.uk/government/statistics/safety-in-custody-quarterly-update-to-march-2018

Mitchell, P., Smedley, K., Kenning, C., McKee, A., Woods, D., Rennie, C. E., ... & Dolan, M. (2011). Cognitive behaviour therapy for adolescent offenders with mental health problems in custody. *Journal of Adolescence*, 34(3), 433-443.

Mohammadkhani, P., Khanipour, H., Azadmehr, H., Mobramm, A., & Naseri, E. (2015). Trait mindfulness, reasons for living and general symptom severity as predictors of suicide probability in males with substance abuse or dependence. *Iranian Journal of Psychiatry*, *10*(1), 56.

Moran, P., Leese, M., Lee, T., Walters, P., Thornicroft, G., & Mann, A. (2003). Standardised Assessment of Personality–Abbreviated Scale (SAPAS): preliminary validation of a brief screen for personality disorder. *The British Journal of Psychiatry*, *183*(3), 228-232.

Morgan, H. G., & Stanton, R. (1997). Suicide amongst psychiatric inpatients in a changing clinical sense. Suicidal ideation as a paramount index of short-term risk. *British Journal of Psychiatry*, 17, 561–563.

National Institute of Clinical Excellence (NICE). (2012). *Self-Harm: Longer-Term Management.* (NICE Clinical Guidelines, No. 133.) Retrieved from: https://www.nice.org.uk/guidance/cg133

National Institute of Clinical Excellence (NICE). (2018). *Preventing suicide in community and custodial settings.* Nice guidelines NG105. Retrieved from:

https://www.nice.org.uk/guidance/ng105/resources/preventing-suicide-in-community-and-custodial-settings-pdf-66141539632069

Naud, H., & Daigle, M. S. (2010). Predictive validity of the suicide probability scale in a male inmate population. *Journal of Psychopathology and Behavioral Assessment*, *32*(3), 333-342.

Nee, C., & Farman, S. (2005). Female prisoners with borderline personality disorder: Some promising treatment developments. *Criminal Behaviour and Mental Health*, *15*(1), 2-16.

Nock, M. J., & Prinstein, M. J. (2004). A functional approach to the assessment of non-suicidal self-injury. *Journal of Consulting and Clinical Psychology*, 72(5), 885-890.

O'Connor, R. C. (2011). Towards an integrated motivational–volitional model of suicidal behaviour. In R. C. O'Connor, S. Platt & J. Gordon (Eds.), *International Handbook of Suicide Prevention: Research, Policy and Practice*. Chicester, UK: John Wiley.

O'Connor, R. C., O'Carroll, R. E., Ryan, C., & Smyth, R. (2012). Self-regulation of unattainable goals in suicide attempters: a two year prospective study. *Journal of Affective Disorders*, 142(1-3), 248-255.

O'Connor, R., & Sheehy, N. (2000). *Understanding suicidal behaviour.* Leicester: British Psychological Society.

O'connor, R. C., Smyth, R., Ferguson, E., Ryan, C., & Williams, J. M. G. (2013). Psychological processes and repeat suicidal behavior: A four-year prospective study. *Journal of Consulting and Clinical Psychology*, 81(6), 1137.

Ougrin, D., Tranah, T., Stahl, D., Moran, P., & Asarnow, J. R. (2015). Therapeutic interventions for suicide attempts and self-harm in adolescents: systematic review and meta-analysis. *Journal of the American Academy of Child & Adolescent Psychiatry*, *54*(2), 97-107.

Pfohl, B., Blum, N., St. John, D., McCormick, B., Allen, J., & Black, D. W. (2009). Reliability and validity of the Borderline Evaluation of Severity Over Time (BEST): A self-rated scale to measure severity and change in persons with borderline personality disorder. *Journal of Personality Disorders*, *23*(3), 281-293.

Porporino, F. J., Zamble, E., & Higginbottom, S. (1988). *Assessing models for predicting risk of criminal recidivism*. Department of Psychology, Queen's University. Kingston, Ontario.

Pratt, D. (Ed.). (2015). *The prevention of suicide in prison: cognitive behavioural approaches*. Routledge.

Pratt, D., Tarrier, N., Dunn, G., Awenat, Y., Shaw, J., Ulph, F., & Gooding, P. (2015). Cognitive–behavioural suicide prevention for male prisoners: a pilot randomized controlled trial. *Psychological Medicine, 45*(16), 3441-3451.

Rettersol, N. (1993) *Suicide: A European perspective*. Cambridge: Cambridge University Press.

Riaz, R., & Agha, S. (2011). Efficacy of cognitive behavior therapy with deliberate self-harm in incarcerated women. *Pakistan Journal of Psychological Research*, *27*(1), pp-21.

Rivlin, A., Hawton, K., Marzano, L., & Fazel, S. (2013). Psychosocial characteristics and social networks of suicidal prisoners: towards a model of suicidal behaviour in detention. *PloS one*, 8(7), e68944.

Rohde, P., Jorgensen, J. S., Seeley, J. R., & Mace, D. E. (2004). Pilot evaluation of the coping course: A cognitive-behavioral intervention to enhance coping skills in incarcerated youth. *Journal of the American Academy of Child & Adolescent Psychiatry*, *43*(6), 669-676.

Rohde, P., Lewinsohn, P. M., Seeley, J. R., & Langhinrichsen-Rohling, J. (1996). The Life Attitudes Schedule Short Form: An abbreviated measure of life-enhancing and life-threatening behaviors in adolescents. *Suicide and Life-Threatening Behavior*, 26(3), 272-281.

Ruggiero, K. J., Del Ben, K., Scotti, J. R., & Rabalais, A. E. (2003). Psychometric properties of the PTSD Checklist—Civilian version. *Journal of Traumatic Stress*, 16(5), 495-502.

Rush, A. J., Trivedi, M. H., Ibrahim, H. M., Carmody, T. J., Arnow, B., Klein, D. N., ... & Thase, M. E. (2003). The 16-Item Quick Inventory of Depressive Symptomatology (QIDS), clinician rating (QIDS-C), and self-report (QIDS-SR): a psychometric evaluation in patients with chronic major depression. *Biological Psychiatry*, 54(5), 573-583.

Safer, D. J. (1997). Self-reported suicide attempts by adolescents. *Annals of Clinical Psychiatry,* 9(4), 263-269.

Senior, J., Hayes, A. J., Pratt, D., Thomas, S. D., Fahy, T., Leese, M., ... & Pearson, A. (2007). The identification and management of suicide risk in local prisons. *The Journal of Forensic Psychiatry & Psychology,* 18(3), 368-380.

Shaw, J., & Humber, N. (2007). Prison mental health services. *Psychiatry*, 6, 465–469.

Shaw, J., & Turnbull, P. (2006). Suicide in custody. *Psychiatry*, *5*(8), 286-288.

Shelton, D., Bailey, C., & Banfi, V. (2017). Effective interventions for self-harming behaviors and suicide within the detained offender population: A systematic review. *Journal for Evidence-Based Practice in Correctional Health*, 1(2), 3.

Slee, N., Arensman, E., Garnefski, N., & Spinhoven, P. (2007). Cognitive-behavioral therapy for deliberate self-harm. *Crisis*, *28*(4), 175-182.

Slee, N., Garnefski, N., van der Leeden, R., Arensman, E., & Spinhoven, P. (2008). Cognitive-behavioural intervention for self-harm: randomised controlled trial. *The British Journal of Psychiatry*, 192(3), 202-211.

Smith, H. (2016). Self-injurious behavior in prison: a case study. *International Journal of Offender Therapy and Comparative Criminology*, *60*(2), 228-243.

Snow, L. (2006). Psychological understanding of self-injury and attempted suicide in prisons. *Psychological Research in Prisons*, 70-94.

Spector, A., Revolta, C., & Orrell, M. (2016). The impact of staff training on staff outcomes in dementia care: a systematic review. *International Journal of Geriatric Psychiatry*, 31(11), 1172-1187.

Tarrier, N., Gooding, P., Pratt, D., Kelly, J., Maxwell, J., & Awenet, Y., (2013). *Cognitive behavioural prevention of suicide in psychosis: a treatment manual*. Routledge: London.

Tarrier, N., Taylor, K., & Gooding, P. (2008). Cognitive-behavioral interventions to reduce suicide behavior: a systematic review and meta-analysis. *Behavior Modification*, *32*(1), 77-108.

Townsend, E., Walker, D. M., Sargeant, S., Vostanis, P., Hawton, K., Stocker, O., & Sithole, J. (2010). Systematic review and meta-analysis of interventions relevant for young offenders with mood disorders, anxiety disorders, or self-harm. *Journal of Adolescence*, *33*(1), 9-20.

Trupin, E. W., Stewart, D. G., Beach, B., & Boesky, L. (2002). Effectiveness of a dialectical behaviour therapy program for incarcerated female juvenile offenders. *Child and Adolescent Mental Health*, *7*(3), 121-127.

Uebersax, J. S. (1987). Diversity of decision-making models and the measurement of interrater agreement. *Psychological Bulletin*, 101(1), 140.

UN General Assembly. (1948*): Universal Declaration of Human Rights*. UN General Assembly.

UN General Assembly. (2015). *The UN Standard Minimum Rules for the Treatment of Prisoners (the Nelson Mandela Rules).* UN General Assembly

Velting, D. M., Rathus, J. H., & Asnis, G. M. (1998). Asking adolescents to explain discrepancies in self-reported suicidality. *Suicide and Life-Threatening Behavior*, 28(2), 187-196.

Ventura, J., Lukoff, D., Nuechterlein, K. H., Liberman, R. P., Green, M. F., & Shaner, A. (1993). Brief Psychiatric Rating Scale (BPRS) expanded version: scales, anchor points, and administration manual. *International Journal of Methods in Psychiatric Research*, *3*, 227-243.

Walker, T., Shaw, J., Turpin, C., Reid, C., & Abel, K. (2017). The WORSHIP II study: a pilot of psychodynamic interpersonal therapy with women offenders who self-harm. *The Journal of Forensic Psychiatry & Psychology*, *28*(2), 158-171.

Washburn, J. J., Juzwin, K. R., Styer, D. M., & Aldridge, D. (2010). Measuring the urge to self-injure: Preliminary data from a clinical sample. *Psychiatry Research*, *178*(3), 540-544.

Watson, D., & Clark, L. A. (1999). *The PANAS-X: Manual for the positive and negative affect schedule-expanded form.* Cedar Rapids: University of Iowa.

Welfare, H., & Mitchell, J. (2005). Addressing vulnerability amongst imprisoned juvenile offenders: An evaluation of the Access course. *International Journal of Prisoner Health*, 1(2/3/4), 171-181.

White, L. (2005). Writes of passage: Writing an empirical journal article. *Journal of Marriage and Family*, 67(4), 791-798.

Williams, J. M. G. (2001). *The Cry of Pain*. London: Penguin.

World Health Organisation (2018). *National suicide prevention strategies.* Retrieved from: https://www.who.int/mental_health/suicide-prevention/national_strategies_2019/en/

World Psychiatric Association. (2017) *Prison public health position statement.* Geneva. Retrieved from: http://www.wpanet.org/uploads/Position_Statement/WPA%20Position%20Statement%20prison%20policy%20fin.pdf

Yoon, I. A., Slade, K., & Fazel, S. (2017). Outcomes of psychological therapies for prisoners with mental health problems: A systematic review and meta-analysis. *Journal of Consulting and Clinical Psychology*, *85*(8), 783.

Zanarini, M. C. (2003). Zanarini Rating Scale for Borderline Personality Disorder (ZAN-BPD): a continuous measure of DSM-IV borderline psychopathology. *Journal of Personality Disorders*, 17(3), 233-242.

Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica*, 67(6), 361-370.

Part 2: Empirical Paper

Predicting dynamic risk factors for suicide ideation in prisoners: perceived entrapment and goal management in the context of the IMV Model

2.1 Abstract

Aims: To investigate internal and external entrapment as risk factors for suicide ideation in a sample of male prisoners. Further, the study aims to investigate the role of goals (i.e. being able to adjust goals, and individual perceptions about goals) in relation to perceptions of entrapment and suicide ideation.

Method: A total of 106 male prisoners took part in this cross-sectional questionnaire-based study over a four month period at a category C prison. Over-sampling was used to recruit higher-risk prisoners.

Results: Univariate analyses showed that several variables significantly predicted current suicide ideation and these were included in a hierarchical logistic regression. Internal entrapment, external entrapment, goal re-engagement and goal ambivalence (i.e. a factor of goal perceptions), as a set, were able to independently predict current suicide ideation over and above established risk factors e.g. hopelessness, χ^2 (6) = 64.42, p <0.01. Internal entrapment, perceived quality of social support and external entrapment made unique statistically significant (p values <0.05) contributions to the model, with odds ratios of 1.42, 1.03 and, interestingly, -0.78, respectively. Interaction terms between goal variables and entrapment variables were not significant in predicting suicide ideation, indicating no moderation.

Conclusions: The results suggest a differential impact of internal and external entrapment on suicide ideation. There are preliminary findings that difficulty in engaging with, and feeling ambivalent about goals may contribute to suicide ideation, however these are not as important as other factors. These findings are discussed in relation to the current literature, along with the clinical implications for identification and management of at-risk prisoners and recommendations for future research.

2.2 Introduction

Suicide is the prevailing cause of death in prisons (World Health Organisation, 2018). Rates of suicide are markedly higher than in the general population, with an average 100 deaths by suicide per 100,000 compared to 21 deaths in the community (Fazel, Grann, Cling & Hawton, 2011). In England and Wales, there are currently 83,000[1] people estimated to be residing in prison (i.e. a closed institution for lawful detention; McDougall, Cohen, Swaray & Perry, 2003). The vast number of people currently incarcerated highlights the importance of investigating what factors increase risk of suicide in prisoners.

Suicide in the prison and probation service is described as a self-inflicted death where an individual appears to have taken his or her own life irrespective of intent (Ministry of Justice, MoJ, 2010). This definition includes accidental death, as it is not always known whether a person intended to die by suicide. Suicide ideation can be a valuable indicator of intent for suicide and is defined as the expression of plans and wishes to die by suicide, not accompanied by any recent overt suicide attempts (Beck, Steer & Ranieri, 1988). Suicide ideation has been widely identified as a reliable risk factor for suicide in the general population and in prisons (Eidhin, Sheehy, O'Sullivan & McLeavey, 2002; Fazel, Cartwright, Norman-Nott & Hawton, 2008). Many studies have shown that suicide ideation precedes completed suicide (e.g. Morgan & Stanton, 1997), and can be used to predict future suicide behaviour (Baca-Garcia et al., 2011; Retterstol, 1993). Indeed, as attempted and completed suicide fortunately still have low base rates being reported, studies into suicide in prisoners have utilised suicidal ideation as a marker of likelihood of suicide.

[1] This number is projected to increase to 86,000 by March 2023 (Ministry of Justice, 2018).

2.1.1 Risk factors for suicide in prisons

Various socio-demographic factors have been found to predict greater suicide risk in prison populations such as being white, male, young age (under 20), as well as having a history of substance misuse problems, history of sexual abuse, history of suicide attempts, psychiatric diagnosis and greater levels of impulsivity (Fazel et al., 2008; Hawton, Linsell, Adeniji, Sariaslan & Fazel, 2014; May & Klonsky, 2016). Static risk factors, such as age and ethnicity are too common among high risk samples and not sensitive to identify those at risk. Further, environmental factors have been identified as increasing risk of suicide, such as being on remand (i.e. waiting to receive sentencing), occupying a single cell, receiving a life sentence, prior incarceration, and reporting negative experiences of imprisonment (i.e. being bullied, threatened with violence and intimidated to hand over belongings; Marzano, Hawton, Rivlin, & Fazel, 2011).

Research has attempted to identify dynamic risk factors for suicide ideation and behaviour in prisons and although this has led to some valuable findings, further exploration is required. One area that has received attention is the high prevalence of mental health problems in this population (Rivlin, Hawton, Marzano & Fazel, 2010). For example, suicide ideation has been found to be correlated with hopelessness and depression (Beck, Steer, Beck, & Newman, 1993). However, most people experiencing problems such as depression do not die by suicide, which highlights the role of other proximal risk factors. Factors such as hopelessness, low self-esteem, lack of activity, low social support, low levels of perceived autonomy, high aggression and anxiety have also been supported by empirical evidence (Favril, Vander Laenen, Vandeviver & Audenaert, 2017; Fliege, Lee, Grimm & Klapp, 2009; Rivlin, Hawton, Marzano & Fazel, 2013).

The exploration of dynamic factors affecting risk of suicide is best supported by a theoretical underpinning to allow for more precise risk assessment and intervention planning (O'Connor & Nock, 2014). There are many different theoretical frameworks of suicidal behaviour (e.g. Joiner, 2005; Klonsky & May, 2014) although commonalities between the models exist (e.g. the perceived role of entrapment; Baumeister, 1990; Shneidman, 1998; Williams, 2001). One such model is the Integrated Motivational-Volitional model (IMV; O'Connor, 2011, *Appendix 2*) of suicidal behaviour. The IMV recognises the interplay of multiple factors in suicide (highlighted in other established models), such as theory of planned behaviour (Ajzen, 1991), ideation to action framework (Klonsky & May, 2014), diathesis-stress model (Schotte & Clum, 1987) and arrested flight or cry of pain model (Williams, 2001). The IMV model proposes how suicide ideation develops for an individual and transitions to suicidal behaviour. The central section of this tripartite model proposes that defeat and perceptions of entrapment lead to the development of suicide ideation and intent, and that factors such as goal adjustment and future thinking moderate this relationship (Figure 1). Evidence for the pathway of risk factors proposed by the IMV model is starting to accumulate (e.g. Dhingra, Boduszek & O'Connor, 2015; O'connor, Rasmussen & Hawton, 2012).

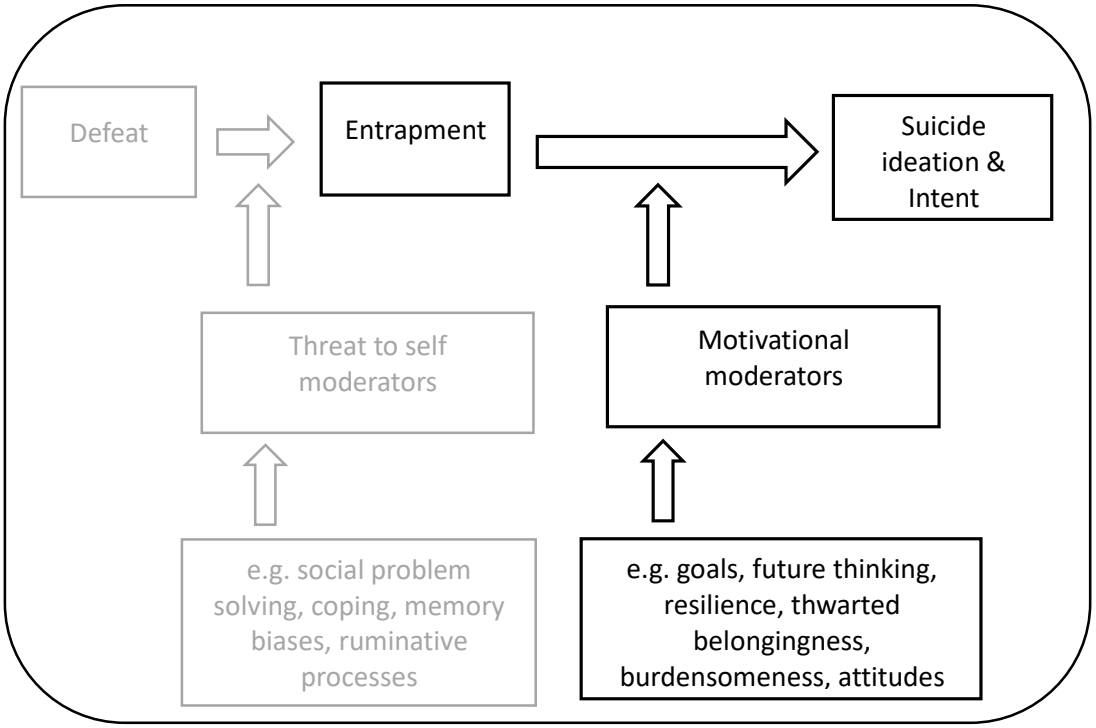


Figure 1: Motivational phase of the Integrated Motivational-volitional model of suicide (IMV, reproduced from O'Connor, 2011)

2.1.2 Entrapment and suicide

Entrapment describes the perception that there are no means of escape (Gilbert & Allan, 1998). This construct first attracted attention within the context of arrested flight explanations of depression (Dixon, 1998), which identifies socially defensive behaviours in response to blocked escape, such as a decrease in exploratory behaviour, demobilisation and submissive behaviour, aimed at reducing inputs and outputs. Within the IMV, suicide is seen as behaviour motivated by a desire to escape from intolerable psychological pain (O'Connor, 2011). It therefore makes sense that entrapment may increase the likelihood of suicidal behaviour whereby suicide is viewed as a means of reducing entrapment (i.e. to escape). Wider

meta-analytic evidence has shown entrapment to be trans-diagnostic across depression, post-traumatic stress disorder, anxiety, and suicide (Siddaway, Taylor, Wood & Schulz, 2015). Many studies have offered support for the IMV model through findings of higher levels of perceived entrapment in individuals experiencing suicidal ideation (Dhingra et al., 2015; Dhingra, Boduszek & O'Connor, 2016). O'Connor, Smyth, Ferguson, Ryan & Williams (2013) found that entrapment was the only modifiable predictor of future suicidal behaviour in multivariate analyses also including suicidal ideation, past suicidal behaviour, depression, hopelessness and defeat. It is therefore important to learn more about the relationship between entrapment and suicide as this increases our ability to intervene and prevent death by suicide.

There have been two proposed subtypes of entrapment: internal entrapment (feeling trapped by one's own thoughts and feelings), and external entrapment (feeling trapped by external or situational factors, Gilbert & Allan, 1998). Investigating external entrapment in a prison population is interesting due to the confined nature of the environment. Measuring perceptions of entrapment, as opposed to actual levels of physical entrapment, in this population may allow for exploration of the concept of entrapment.

There is mixed evidence supporting a relationship between entrapment and suicide in prison populations. Gooding et al. (2015) found evidence that perceptions of high levels of entrapment is related to suicide ideation in male prisoners. However, a later study found that defeat and hopelessness were predictive of suicide probability in their sample of high-risk prisoners, but entrapment was not a significant predictor (Gooding, et al. 2017). Interestingly, other studies have found that *low* entrapment was a predictor of future deliberate self-harm in prisoners

(Slade, Edelmann, Worrall & Bray, 2014b) when directly measured, whereas the authors reported that other indicators of entrapment i.e. less seeking guidance and greater external locus of control were predictive of self-harm. The authors discussed that reporting of external entrapment was affected by the prison environment and that measures of internal entrapment may become more important in this population. Overall, researchers have concluded that the concept of entrapment with prisoners warrants further investigation. Studies with non-prisoner populations, including a prospective study with bi-polar patients (Owen, Dempsey, Jones, & Gooding, 2018) and a study with patients admitted to hospital following self-harm (Rasmussen et al., 2010) have also found differential effects for external and internal entrapment, with greater evidence for internal entrapment being part of a pathway of other established risk factors leading to greater suicide risk.

2.1.3 Goal adjustment, goal perceptions and suicide

This study is also interested in investigating other aspects of the IMV model, in order to further understand the mechanisms that contribute to an individual's perception of entrapment. When considering entrapment and the desire to escape, it is important to consider the role of goals, as these are essential to human experience (Klinger, 1977). Goals guide sustained activity towards desired end states and are motivational representations (Dickson, Moberly & Kinderman, 2011), and a key part of self-regulation (Carver & Scheier, 1990). Processes pertaining to the self-regulation of goals become activated when goal accomplishment is thwarted.

The pursuit, management and attainment of every day personal goals, i.e. goal regulation, has been associated with higher levels of wellbeing (Emmons, 1986; Sheldon & Elliot, 1999; Sheldon, Kasser, Smith & Share, 2002). Flexibility in goal pursuit may help to enhance emotional well-being and reduce distress. Further,

persevering with the attainment of long-term goals has been highlighted as a protective factor in relation to suicide ideation (Blalock, Young & Kleiman, 2015). Conversely, poor goal regulation has been linked to poor wellbeing, for example, chronic failure to make progress towards goals is commonly seen in depression (Strauman, 2002) and ineffective social problem solving, which are both known risk factors for suicide (Williams, Barnhofer, Crane & Beck, 2005).

These findings suggest there may be a role for goal regulation in the understanding of suicidal behaviour. The general term 'goals' is included in the IMV model as a factor that strengthens or weakens the effects of entrapment on suicide ideation (i.e. motivational moderator) and is an area that has not been fully explored.

Stressful events, such as being in prison, can obstruct effective self-regulation and adaptive patterns and processes (Baumeister & Heatherton, 1996). One could hypothesise that when feeling trapped and perceiving there to be no means to escape, difficulty regulating goals may act as a motivational moderator by making a situation seem even less escapable. Research into goal adjustment i.e. the ability to adjust one's goals, offers support for this idea. Goal adjustment has two components (Eddington, 2014); disengaging from unattainable goals (goal disengagement), and re-engaging with alternative goals (goal re-engagement). Difficulties with goal adjustment has been found to predict poorer well-being and increased risk of suicide behaviour. O'Connor, Fraser, Whyte, MacHale and Masterton (2009) and O'Connor, O'Carroll, Ryan and Smyth (2012) found that low goal re-engagement predicted greater suicide ideation and risk of repetitive self-harm. Further, risk was particularly high for those low on re-engagement and high on disengagement.

Additionally, successful goal regulation allows movement towards desired end states, such as positive future events. Lack of positive future thinking (an additional motivational moderator in the IMV model) is a predictor of suicidal behaviour (Macleod, Pankhania, Lee & Mitchell, 1997; Hunter & O'Connor, 2003; O'Connor, Fraser, Whyte, MacHale & Masterton, 2008). Impaired ability to think positively about the future has been found to moderate the relationship between entrapment and suicidal ideation, offering support for the model (Rasmussen et al. 2010).

Perceptions about goals (titled here as *goal perceptions*), such as how important or difficult one views the successful attainment of a goal to be, or how ambivalent one is to achieving a goal are important factors to consider in relation to regulation of goals. Ambivalence occurs when an individual is pursuing a goal, but simultaneously believes that they would not be completely happy if they were successful in that goal, and has been viewed as a conflict within a striving (Emmons & King, 1988) or conflict between approach and avoidance motivations (Sincoff, 1992). Ambivalence towards personal life goals has been found to be related to negative affect and wellbeing (Emmons, 1986; Blalock et al., 2015; Kelly, Mansell & Wood, 2015). This may be because goal ambivalence can affect commitment to goal attainment and achievability, which are important factors of getting our needs met, and therefore, our level of wellbeing (Michalak & Holtforth, 2006).

The restrictive and structured environment of a prison can potentially limit prisoner choice (Kasser, 1996), and therefore self-regulation of personal every day goals can be difficult. This may also lead to changes in goal perceptions, such as greater goal ambivalence, whereby making a choice becomes more effortful than would be ordinarily (e.g. visiting the gym to achieve the goal to exercise may also require waiting in a holding cell for an hour with people from rival gangs).

Investigating goal adjustment and goal perceptions could explain the mechanisms that contribute to an individual's perception of entrapment, potentially moderating the relationship with suicide ideation. Further, these factors might also act as independent proximal risk factors for suicide ideation.

2.2.1. Study Aims and Hypotheses

The motivational stage of the IMV model is the focus of the current research, specifically investigating the differential effects of perceived external and internal entrapment on suicide ideation in male prisoners, a population where the IMV model has not been directly applied. The study also aimed to investigate the relationship between goal adjustment (re-engagement and disengagement) and goal ambivalence (a goal perception factor) and suicide ideation. A further exploratory aim is to investigate goal adjustment and goal perception factors as moderators to the entrapment and suicide ideation relationship.

Depression, hopelessness (Mills & Kroner, 2005), brooding rumination (defined as the negative judgement of the consequences of negative mood states, Tucker, O'Connor & Wingate, 2016), social support (O'Connor, 2011) and history of suicide are well established risk factors of suicide. Particularly as the current research will take place within the context of a largely isolated prison setting, these variables will be controlled for in all analyses.

The main study research questions more specifically are as follows:

Entrapment and suicide ideation

1. To investigate the hypothesis that high levels of perceived entrapment will predict suicide ideation, when controlling for other variables (e.g. depression,

hopelessness, social support, brooding rumination and previous suicide attempts)

2. To investigate whether there is a differential impact of internal and external entrapment (all participants will be recruited from a current prison population)

Goals and suicide ideation

3. To confirm findings that low goal re-engagement predicts suicide ideation in UK prisoners and to investigate the hypothesis that higher levels of goal ambivalence predicts suicide ideation

4. To investigate whether other aspects of goal perceptions (goal difficulty, importance, progress and probability of success) predict suicide ideation

Exploratory Aims

5. To investigate the hypothesis that goal adjustment and goal perceptions act as moderators for the relationship between entrapment and suicide ideation

2.3 Method

2.3.1 Joint research project

This research was carried out as part of a joint research project with a fellow student researcher (Schombs, unpublished thesis). An outline of how both student researchers contributed to this study is included in *Appendix 7*.

2.3.2 Participants

Participants were recruited from a single site, Category C adult male resettlement prison (non-remand) in Greater London, which provides various educational and vocational opportunities in preparation for release.

A total of 189 prisoners were approached for this study; 106 participants (56%) took part (see Figure 1). Participants were all male prisoners above 18 years of age residing in the prison during the period of data collection. They were selected

via opportunity sampling, which included over-sampling of high risk prisoners due to the focus of the study (Vaughan, 2017). Over-sampling involved focussing recruitment towards prisoners known currently to, or recently supported by, ACCT (Assessment, Care in Custody and Teamwork plan), which is the nationwide management strategy for suicide and self-harm risk in prisons (MoJ, 2011). Prisoners were excluded if they:

- Had difficulty in adequately understanding both written and verbal information in English. Those unable to read or write, had the information read to them
- Were experiencing acute symptoms such as mania or severe behavioral difficulties
- Had sexual offences as their primary offence, i.e. were housed on a vulnerable prisoners wing, and those on the personality disorder unit, as a means of ensuring that all prisoners were subjected to the same environment

The initial study criteria was to include participants at the prison less than three months, as this time has been identified as high risk (MoJ, 2013). However, this criteria was subsequently retracted as it conversely led to over-sampling of non-risk prisoners.

A power analysis was undertaken prior to data collection, which suggested that 114 participants would be required to reach adequate power[2]. However, the analytical

[2] A power analysis was calculated according to a previous study by O'Connor et al. (2009) where a small to medium effect size (f^2=0.11) was found based on r^2 of .31 for age, sex, depression, anxiety, suicidal ideation at Time 1, goal reengagement and goal disengagement in predicting suicide ideation at Time 2 in a sample of adults hospitalized following a suicide attempt. There was no previous literature identified that reported an r^2 values for the combination of predictors investigated in this study, and so this r^2 was used as guidance. G*power 3.1.5 computer programme (Faul, Erdfelder, Buchner, & Lang, 2009) suggested an n of 114, based on a small to medium effect size f^2 = 0.11, 80% power, and alpha at 0.05.

approach for this study was reconfigured due to the data obtained. A retrospective power analysis using data from the logistic regression was conducted for this study. The following parameters were entered into G*Power 3.1 for internal entrapment: H1 = 0.65, H0 = 0.27, R2 other X = .53; external entrapment: H1 = 0.53, H0 = 0.27, R2 other X = .55, goal disengagement: H1 = 0.19, H0 = 0.27, R2 other X = .64, and goal re-engagement: H1 = 0.07, H0 = 0.27, R2 other X = .64. When the total number of participants was entered along with the above parameters to conduct a posthoc analysis, the results identified that the study was adequately powered for internal entrapment (β = 0.98), external entrapment (β = 0.82) and goal reengagement (β = 0.91). The study was underpowered for goal disengagement (β = 0.21). Therefore the study is underpowered given the sample size and number of predictors tested where predictors have smaller effects i.e. goal disengagement, and this suggests the study is also likely to be underpowered where multiple predictors and interaction terms have been used between entrapment and goal variables i.e. in the moderation analyses.

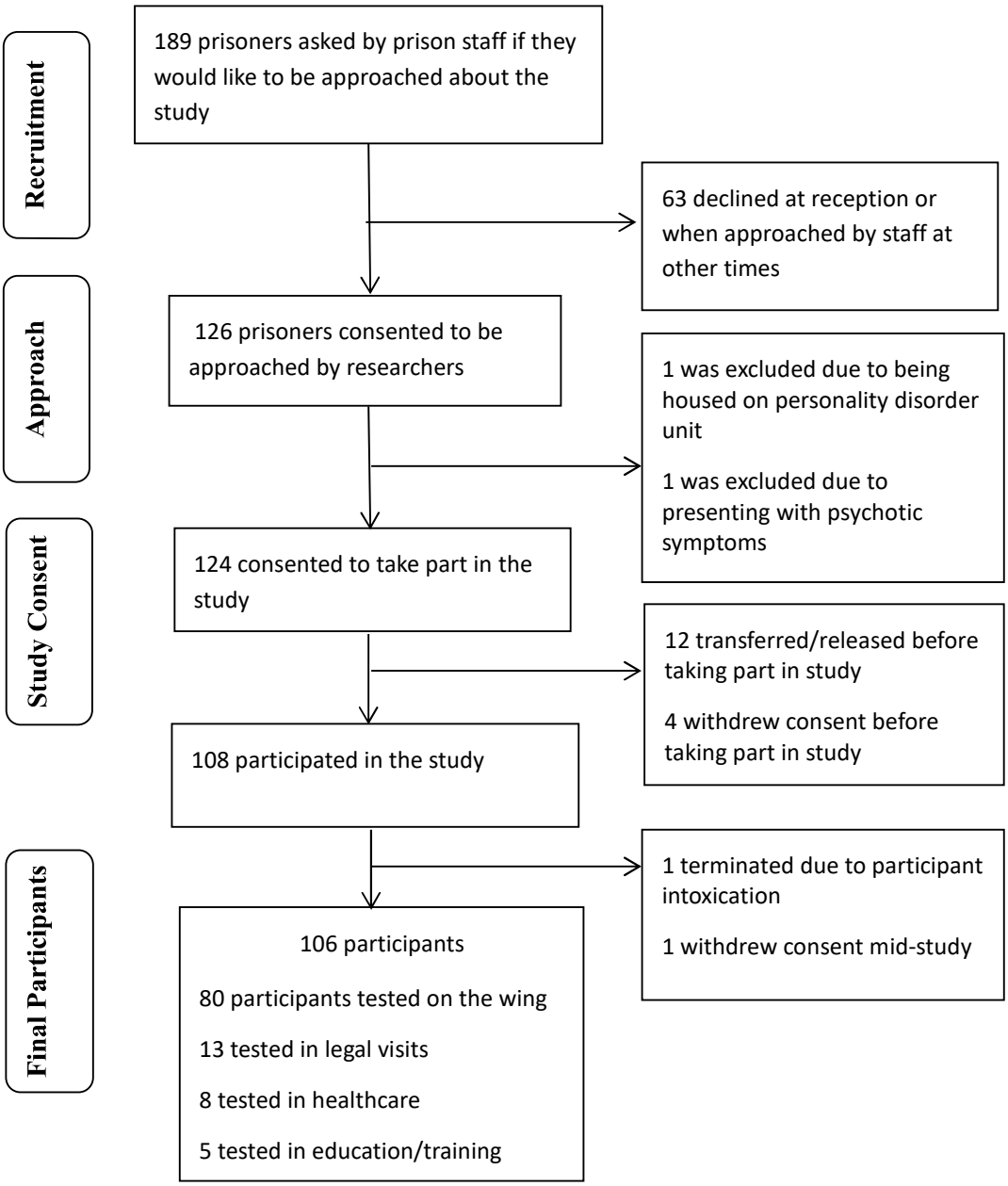


Figure 2. Participant consent and participation flow diagram.

2.3.3 Procedure

Prior to data collection, healthcare staff were provided with information about the study to facilitate recruitment. Eight prison healthcare representatives (current prisoners) also reviewed the questionnaire packet, with feedback informing the final

design and implementation. Feedback was given that participants may find it difficult to be honest about this topic, not be used to talking, question whether the unknown researcher cares about them as people, and concerns were shared about being able to concentrate for the full required time. Their suggestions included starting and ending with the questionnaires that were not about suicide or self-harm, having the questions read out by the researcher to make the process more interactive and like a conversation, and increasing space to write down answers. Participants were also offered breaks, the standardised introduction pre-empted concerns about repeated questions and length of time to complete and included a rationale for this, and the debrief following administration explained the links between the study and improving prisoner care.

Data collection occurred across twenty-six days during a four month period. In accordance with local prison policy, prisoners participated during the time they were unlocked i.e. “association time”, typically lasting 2-3 hours both in the morning and afternoon. Consent for researchers to approach potential participants about the study was gathered by reception and mental health team staff at the prison. Those who consented were verbally given a Participant Information Sheet (PIS; *Appendix 9*) and signed a consent form (*Appendix 10*). A questionnaire battery was completed in a private room on site, and took between 30 minutes and 90 minutes to complete, with an average of one hour. A standardised introduction to the questionnaires was given and debrief following administration (*Appendix 3*).

2.3.4 Missing data

One-to-one administration of questionnaires reduced incidents of missing data (n=5).

2.3.5 Ethics

This study was approved by Research Ethical Committee reference 16/EE/0360, and the National Offender Management Service reference 2018-311 (*Appendix 4*). All data was anonymised and stored safely and confidentially according to the General Data Protection Regulation (GDPR).

To reduce the prisoners feeling coerced into participating, the initial phase of recruitment (gaging interest) was not undertaken by the researcher. Prisoners were aware that they could withdraw their data at any point during the research.

All participants were given information on how to access the prison's mental health service, Samaritans phone line and the prisoner 'Listener' service. Due to the nature of the research topic, where prisoners were identified at being at risk of self-harm and/or suicide, the researcher consulted with the healthcare department (including mental health team) as well as referring to the local ACCT policy.

2.3.6 Design

A cross sectional design was used for this study. Prisoners completed questionnaires to assess factors known to be predictive of suicidal ideation, alongside a number of hypothesis-specific measures. The predictor variables were entrapment (internal and external), goal adjustment (disengagement and re-engagement) and thoughts and feelings towards goals a.k.a. goal perceptions (importance, difficulty, satisfaction with progress, likelihood of success and ambivalence). The outcome variable was current suicide ideation.

2.3.7 Measures

Prisoners completed a total of fourteen questionnaires (including demographic information), eight of which were the focus of this study (described below, *Appendix 5*).

2.3.7.2 File information

The prison information system was used to gather file information about prisoners (e.g. arrival and estimated release date; ERD). Whether a prisoner was being supported on an ACCT (i.e. indicating current risk of self-harm and/or suicide) was also recorded. This acted as a validation tool for prisoner self-reports where possible.

2.3.7.3 Predictor measures

Depression, Hopelessness and Suicide Screening (DHS).

The DHS (Mills & Kroner, 2004*)* is a 39 item, true or false self-rated measure of depression, hopelessness and current and prior risk of suicide, termed the Suicide Critical Item Scale (SCI). This measure has been validated for use with prisoner populations and used in previous investigations of suicide in a prison sample (e.g. Slade & Edelmann, 2014a). Higher scores on the DHS indicate higher levels of depression, hopelessness and suicide risk. The SCI is comprised of three subscales: cognitive permissive indicators (2 items), previous suicide and self-harm behaviour (5 items), and current suicide ideation (3 items). All SCI items represent key factors established as indicating imminent risk of suicide (Martin, Dorken, Simpson, McKenzie & Colman, 2014). The previous suicide or self-harm behaviour subscale (PSSB) was utilised as a measure of history of self-harm and suicide behaviour. Within the current study PSSB, Depression and Hopelessness were found to have a Cronbach's alpha coefficients of .90, .88, and .88, respectively.

Entrapment Scale.

This is a 16 item self-report measure of perceived internal and external entrapment, relating to triggers of escape motivation (Gilbert & Allan, 1998). Participants rate on a five-point scale ranging from 0 (not like me at all) to 4 (extremely like me). The two subscales internal entrapment and external entrapment consist of 6

and 10 items, respectively. Higher scores indicate a higher level of perceived entrapment. The Entrapment Scale has been previously used in studies into psychological models of suicide using prisoner populations (Slade et al., 2014b; Gooding et al., 2015). The current study found a Cronbach's alpha coefficient of .89 for internal entrapment, 0.84 for external entrapment, and .92 for total entrapment.

Goal adjustment.

The goal adjustment scale includes four items measuring goal disengagement i.e. perceived difficulty in reducing effort and relinquishing commitment toward unobtainable goals, and six items measuring goal re-engagement i.e. perceived ability to re-engage in new alternative goals if they face difficulty in goal pursuits (GAS; Wrosch, Scheier, Miller, Schulz & Carver, 2003). This measure has been used in previous studies of goal adjustment within the context of the IMV model (e.g. O'Connor et al., 2012) where both sub-scales were internally consistent. The GAS has been well validated with a range of populations (e.g. Miller & Wrosch, 2007). In the current study the Cronbach's alpha coefficient was .83 for goal re-engagement and .79 for goal disengagement.

Goal listing and assessment tasks.

This scale was adapted from the Strivings Assessment Scale (SAS; Emmons., 1986), similarly to other research that has adapted this scale (Bogg, Voss, Wood & Roberts, 2008; Eddington, 2014; King, Richards & Stemmerich, 1998), to measure perceptions of important personal goals, defined as "objectives they are typically trying to achieve in their life". This measure consists of three tasks; i) listing as many important personal goals as possible, ii) selecting and ranking the three most important goals from this list in order of importance and iii) rating these goals (on a Likert scale) in relation to a number of goal perceptions described below.

A previous study looking at goals with young male prisoners (Otto & Dalbert, 2005) found that some prisoners were unable to identify as many as five goals and so for this study it was adjusted to three goals to avoid generation of artificial goals.

Prisoners rated their goals on perception factors including importance, difficulty, satisfaction with progress, likelihood of success and ambivalence. In research this is one of the most commonly used methods of measuring goal perceptions, such as ambivalence (Kelly et al., 2015; Kelly, Mansell & Wood, 2011; Emmons & King, 1988; Parker, 2018). The phrasing of the goal ambivalence item was taken from a previous study (pg. 5, Thomsen, Tønnesvang, Schnieber & Olesen, 2011) and measured how unhappy an individual would feel if they were successful in their goals. Ratings were averaged across the ranked goals to produce one mean rating for each goal perception. The SAS has been used mainly with student populations and in one study with an adult population (Romero, Villar, Luengo & Gómez-Fraguela, 2009). There was no prisoner-specific measure identified.

Response Styles Questionnaire.

A five item subscale from this questionnaire was used to measure brooding rumination (Nolen-Hoeksema, 1991), e.g. “think “Why do I have problems other people don’t have?”, on a 4-point scale ranging from 1 (almost never) to 4 (almost always). Choice of this measure was based on Tucker et al. (2016) study into ruminative styles and suicidal ideation within the context of the IMV model. This measure has adequate test-re-test and internal reliability (Treynor, Gonzalez, & Nolen-Hoeksema, 2003) and has been used in a study measuring brooding rumination in a sample of 179 Category C prisoners (Gardner, Dodsworth & Selby, 2014). This measure was found to have .83 internal consistency.

Social Support Appraisals (SS-A) Scale.

This is a 23-item self-report measure of an individual's perceptions of (in contrast to actual) support from family, friends and other people (Vaux et al., 1986), for example, "I can rely on my friends". Participants rate items on a 4-point scale, ranging from 1 (strongly agree) to 4 (strongly disagree), where higher scores indicate poorer social support. The internal consistency in this study was 0.77. This measure has also been previously used in a test of a psychological model of suicide in a prison setting (Slade & Edelmann, 2014a).

2.3.7.4 Outcome measures

DHS: Current Suicide Ideation Subscale.

As in Slade and Edelmann's (2014a) study, the current suicide ideation subscale (CSI) was used in this study as the measure of current ideation. Participants can score between 0 and 3 on this measure, depending on how many of the three items indicating current suicide ideation they endorsed (i.e. "I have recently had thoughts of hurting myself", "life is not worth living", and "I have a plan to hurt myself"). This scale was utilised as a binary outcome measure indicating either no current suicide ideation (score = 0), or any current suicide ideation (score = ≥1). The CSI subscale has been shown to predict future self-harm (Martin et al., 2014).

Beck Scale for Suicide Ideation (BSSI)

This is a 21 item measure that assesses suicide ideation and intent experienced in the past week (Beck et al., 1988). Items are rated on a Likert-type scale ranging from 0 to 2, e.g. "I have (a) moderate to strong/weak/no wish to live". This measure was chosen as it has been widely used in existing studies into the IMV Model (e.g. Tucker et al., 2016) and has been found to be reliable and validated

within prisoner populations (Senior et al. 2007). This scale was found to have a Cronbach's alpha coefficient of .93.

2.3.7 Data Analysis

All data was anonymised and double checked by the researcher/s and analysed using SPSS version 25. Descriptive statistics were used to describe the data in relation to demographic characteristics, file information and goal data of the sample. Initial analyses of t-tests and chi squared tests were performed using baseline variables to investigate whether there were any significant differences between the no current suicide ideation and any current suicide ideation dependent variable groups. The baseline variables included age, length of time at the current prison, total length of time served for current sentence, total length of sentence received, length of time until estimated release date (ERD), number of episodes in prison, and self-reported mental health diagnosis.

The main analysis used hierarchical logistic regression procedures to test predictors of likelihood of suicide ideation, a binary variable coded as 0 (no current suicide ideation) and 1 (any current suicide ideation). Although the intention was to look at the BSSI, the eventual sample made this impossible due to the high number of zero responses and consequent highly skewed nature of the BSSI distribution.

First univariate analyses were used to explore the independent predictive power of each variable on the outcome variable. Logistic regressions were used to explore the predictive power of the predictor variables entrapment (internal and external) and goal adjustment (goal re-engagement and goal disengagement) and goal perceptions (ambivalence, importance, difficulty, progress and success). The composition of the regression model was decided by which univariate predictors were significant at $p<0.05$. For the regression analysis the enter method was used to add variables at

each step as this was guided by research goals derived from theory and previous empirical research (Field, 2013). The key hypothesis-led predictors were entered in the second step after controlling for depression, hopelessness, brooding rumination, social support and previous suicide and self-harm behaviour (PSSB) in the first step.

Using interaction terms between entrapment and goal variables there was further exploratory analysis into the moderator effects of the goal variables on the relationship between internal entrapment, external entrapment, total entrapment and suicidal ideation, as it was hypothesised that poor goal adjustment (low goal re-engagement, high goal disengagement), high goal ambivalence, high goal difficulty, low goal progress, low goal importance and low goal success would strengthen the relationship between entrapment and suicide ideation. Although the primary research question involved specific interest in the entrapment, goal adjustment and goal perception factors logistic regression analyses, the findings for other established predictors of suicide ideation (i.e. depression, hopelessness, rumination, social support, history of suicide) are presented.

Testing assumptions

Prior to conducting the hierarchical logistic regression, tests were carried out to check the relevant assumptions of this statistical analysis, namely tests of linearity of the logit and absence of multi-collinearity. One variable, goal importance, was found to violate the assumptions of collinearity and linearity, indicating that this variable was not linearly related to the logit of the outcome variable, and there was also collinearity with another variable, likely with goal re-engagement from inspection of eigenvalues (Field, 2013). Therefore, goal importance was not included in the hierarchical regression model due to concerns about bias. Variance Inflation Factors (VIF) and tolerance values were all within the accepted limits for variables

indicating that the assumptions had been met for factors that were univariate predictors: depression, hopelessness, rumination, mental health diagnosis, social support, PSSB, external entrapment, internal entrapment, goal reengagement and goal ambivalence (Menard, 1995; Stewart, 1987). Further, standard errors were not extremely large, which is another indicator that multi-collinearity is not a major problem.

Influential and outlier cases

Examinations indicated two possible multivariate outlier cases, with standardised residual scores of >2 (2.27 and 2.68). The entire sample scores are expected to fall between ±1.96 in 95% of cases, and so this does not indicate concern (Field, 2013). One of these cases had a Cook's Distance score of >1 (score = 1.25, Cook & Weisberg, 1982), which indicated there may have been undue influence by this case. As a sensitivity analysis the regression was repeated without this case and this led to hopelessness becoming a significant predictor in the final model (see *Appendix 7* for output). There were no other notable changes. As there is no empirical justification to delete this participant's data, reports in this paper include all participant data.

2.4 Results

2.4.1 Participant demographics

A total of 106 male prisoners took part in the study. The highest number of participants (46%) fell within the 26-35 age bracket and were from a white ethnic background (43%). Table I shows the sample demographics.

Table I: Participant Demographics

Demographics	Participants (n = 106)
Age**, *n* (%)	
18-25	21 (20%)
26-35	48 (46%)
36-45	25 (24%)
46-55	10 (10%)
Race*, *n* (%)	
White	45 (43%)
Black	33 (31%)
Asian	12 (11%)
Mixed	9 (9%)
Other	6 (6%)
Religion**, *n* (%)	
Buddhist	1 (1%)
Christian	39 (38%)
Hindu	1 (1%)
Muslim	34 (33%)
None/Atheist	20 (19%)
Other	9 (9%)
Sexuality, *n* (%)	
Heterosexual	106 (100%)
Physical Disability (self-reported), *n* (%)	
Yes	17 (16%)
No	89 (84%)
Learning Disability (self-reported), *n* (%)	
Yes	16 (15%)
No	90 (85%)
Current legal status, *n* (%)	
Sentenced	90 (83%)
Immigration detainee	1 (1%)
License recall	15 (14%)
Recent offence, *n* (%)	
Violence	30 (28%)
Drugs	35 (33%)
Dishonesty	31 (29%)
Other	10 (9%)
Sentence length (weeks), *M* (range, SD)	185 weeks (36-648 weeks, 103.69)
Sentenced, *n* (%)	104 (98%)
EPP, *n (%)*	1 (1%)
Life, *n* (%)	1 (1%)
Length of time in prison (weeks), *M* (range, SD)	82 weeks (8 – 1144 weeks; 121.27)
Length of stay at current prison (days), *M* (range, SD)	75 days (1 - 408,89.20)
ERD (days), *M* (range, SD)	243 days (6 - 2495, 256.34)
No. of times in prison, *M* (range, SD)	7 (1-50, 9.5)
1st episode, *n* (%)	23 (22%)

Note: ERD = Estimated Release Date. *n=105 **n=104

Frequency data for the outcome variables measuring severity of suicide ideation and intent (BSSI) and current suicide ideation (CSI) is provided in Table II. The BSSI showed that 70% of participants reported no ideation or intent, 14% scored 1, and 16% scored between 2 and 31 on the questionnaire. For the CSI, the data confirmed that 73% of the sample reported no current ideation and 27% reported current ideation. The data supports that responses were valid as they show very similar breakdowns of numbers of participants reporting current suicide ideation. The majority of participants reported no current suicide ideation, leading the data to be highly skewed due to the number of zero responses.

Table II: Frequency of severity of suicide ideation and intent and current suicide ideation scores in full sample

	Score	Frequency	Percent
BSSI	0	70	66.0
	1	14	13.2
	2	4	3.8
	3	2	1.9
	4	2	1.9
	7	2	1.9
	9	2	1.9
	11	1	.9
	12	2	1.9
	13	1	.9
	16	1	.9
	22	1	.9
	27	2	1.9
	28	1	.9
	31	1	.9
	Total	106	100.0
CSI	0	77	72.6
	1	17	16.0
	2	9	8.5
	3	3	2.8
	Total	106	100.0

Note: BSSI = Beck's Scale for Suicide Ideation, higher scores mean more severe suicide ideation and intent. Bonner and Rich (1990) in their study of self-harm in a US jail classified as: 0 as "no intent," 1–5 as "low intent," 6–13 as "moderate," and 14 or more as "high intent" of suicide.

CSI = Current Suicide Ideation scale from Depression, Hopelessness and Suicide Scale (DHS). Scores of 0, 1, 2 or 3 reflect how many of the following three items participants endorsed: "Life is not worth living", "I have recently had thoughts of hurting myself", "I have a plan to hurt myself".

Table III shows the results of the goal listing and goal assessment tasks. The mean number of independently generated goals was 2.35, SD = 1.74. All participants were able to think of at least one goal. Almost 50% of participants identified their most important goal first, indicating an ability to access important goals. Participant goals were rated for level of abstractness according to a rating scale used within Wallenius's (2000) paper into an individual's projects (i.e. goals) level of abstraction and related subjective wellbeing. Second ratings were provided by a second independent rater, and inter-rater reliability was at 86%. Forty-three percent of participants were coded as level 1 for abstraction, meaning their goals were either all, or all but one, concrete goals i.e. low abstraction. Only 3% of participants generated all, or all but one, abstract goals.

Table III: Descriptive data for goal listing and goal assessment tasks

Descriptive goal data	Participants
No. of goals independently generated, *M* (range, SD)	2.35 (1-10, 1.74)
No. of participants <3 goals, *n* (%)	33 (31%)
No. of participants <2 goals, *n* (%)	6 (6%)
Goal 1 = ranked 1 for importance, *n* (%)	49 (46%)
Level of abstraction, *M*	2.09 (1-5,1.20)
Level 1, *n* (%)	45 (43%)
Level 2	29 (27%)
Level 3	11 (11%)
Level 4	17 (16%)
Level 5	3 (3%)

2.4.2 Predicting suicide ideation

Baseline variables

Preliminary tests were carried out using demographic baseline variables in order to identify those variables that would be appropriate for inclusion in the full regression analysis. Therefore, t-test and chi-square tests were undertaken to find out

if there were any significant differences for these variables between the no suicide ideation and any suicide ideation groups on the CSI. The baseline variables included in these analyses were: age, mental health diagnosis, sentence length, time in prison so far, estimated release date, time at current prison and number of episodes in prison (See Table IV for descriptive data for the two groups). The number of episodes in prison variable was recoded into two variables: less than 5 times (<5) in prison and more than 5 times (6>) in prison. The only significant results were found for self-reported mental health diagnosis: more participants that reported to have a mental health diagnosis also reported current ideation (79%) than participants not reporting to have a diagnosed mental health problem (21%), χ^2 (1) = 10.47, p=0.001. Therefore, the mental health diagnosis variable was included in the regression model as a control variable.

Table IV: Descriptive data for the two groups of the outcome variable

Variable	**No current ideation**			**Any current ideation**		
	M / %	SD	Range	M / %	SD	Range
Sentence length* (weeks)	191.60	108.49	36-648	166.11	88.47	36-364
Total time spent in prison (weeks)	75.48	67.67	8-260	99.07	205.69	8-1144
Total time at current prison (days)	65.65	76.55	1-408	99.69	114.28	8-384
ERD (days)*	264.18	289.70	6-2495	184.64	109.99	33-414
Age*						
18-35	69%			59%		
36-55	31%			41%		
Mental health						
Yes	44%			79%		
No	56%			21%		
Episodes in prison						
<5						
6>	68%			52%		
	32%			48%		

Note: ERD = estimated release date. * n=104

Univariate analyses

First, each of the 10 predictor variables included in this study were used within univariate logistic regression analyses to find out their respective predictive power for the dependent variable, CSI. In some cases there were outliers in predictor variables, but these did not appear to be highly influential. As such, all data was retained for the main analyses. The results of these analyses are included in Table V. Depression, hopelessness, brooding rumination, self-reported mental health diagnosis, social support and previous self-harm or suicide behaviour (PSSB), goal re-engagement, internal entrapment, external entrapment and goal ambivalence, were all significant univariate predictors of current suicide ideation ($p<0.05$).

Hierarchical logistic regression

A hierarchical binary logistic regression was used to assess the impact of ten predictors on the likelihood that participants would be reporting current suicide ideation (Table V). The model was created to examine the unique contribution of internal and external entrapment, and goal variables, to current suicide ideation. The first step of the model contained six control factors: previous suicide and self-harm behaviour (PSSB), Depression, Hopelessness, Brooding rumination, mental health diagnosis and social support. The model was statistically significant, $\chi^2(6) = 46.17$, $p < 0.001$, Nagelkerke $R^2 = .51$, indicating that together predictors reliably distinguished between participants reporting current suicide ideation and participants reporting no current suicide ideation. This model correctly classified 79% of the cases in terms of either no suicide ideation or any suicide ideation. PSSB made a unique statistically significant contribution to the model and had an odds ratio of 1.49 (CI: 1.05-2.11).

The second step of the model containing the four predictors: internal entrapment, external entrapment, goal re-engagement and goal ambivalence, remained a statistically significant model, χ^2 (6) = 64.42, p <0.01, Nagelkerke R^2 = 0.65, indicating all ten predictors together, reliably distinguished between participants reporting current suicide ideation and participants reporting no current suicide ideation, and improved how well the model predicted current suicide ideation by 15%. The change in additional variance accounted for by this step was significant, χ^2 (4) = 17.25, p<0.01, indicating that the four predictors together added to the models ability to reliably distinguish between participants reporting current suicide ideation and those not. The model as a whole now correctly classified 86% of the cases. In this model three independent variables made a unique statistically significant contribution to the model (internal entrapment, external entrapment and social support) recording odds ratios of 1.42 (CI: 1.14-1.77), 0.78 (CI: 0.65-0.93) and 1.08 (CI: 1.00-1.17) respectively. Further, in the final step of the model, PSSB was no longer significant (p=0.08), although the odds ratio was 1.42.

Therefore, as their odds ratios are greater than 1, as internal entrapment and poor social support (higher scores indicate poorer social support) increase by one unit, this leads to a predicted 42% and 8% fold increase, respectively, in the odds of reporting current suicide ideation, controlling for other predictors. As the odds ratio is less than 1, as external entrapment increases by one unit, the odds of reporting current suicide ideation decreases by 22%. As none of the confidence intervals cross 1.00 we can be confident that the relationships are as described.

Table V: Results of logistic regression analyses predicting current suicide ideation (n=106)

		Univariate					Multivariate Step 1					Multivariate Step 2				
Factors	*M* (SD) or %	B	SE	OR	P	95% CI	B	SE	OR	P	95% CI	b	SE	OR	p	95% CI
Depression	7.61 (4.77)	0.27	0.06	1.31	<0.001***	1.16-1.48	0.00	0.10	1.00	0.98	0.83-1.22	-0.12	0.13	0.99	.92	0.77-1.27
Hopelessness	2.58 (2.88)	0.38	0.09	1.46	<0.001***	1.23-1.73	0.23	0.15	1.26	0.13	0.94-1.69	0.31	0.19	1.37	.11	0.94-1.99
PSSB	1.60 (1.96)	0.62	0.13	1.85	<0.001***	1.44-2.38	0.40	0.18	1.49	0.03*	1.05-2.11	0.35	0.20	1.42	.08	0.96-2.09
Mental health	54%	1.58	0.51	4.85	<0.002**	1.78-13.24	0.71	0.77	2.04	0.35	0.46-9.14	1.41	0.91	4.10	.12	0.69-24.40
Rumination	11.25 (3.9)	0.21	0.06	1.24	0.001**	1.10–1.40	0.07	0.09	1.07	0.43	0.91-1.27	-0.02	0.11	0.98	.85	0.78-1.23
Social support	46.21 (12.33)	0.10	0.02	1.11	<0.001***	1.05-1.16	0.05	0.03	1.06	0.08	0.99-1.12	0.08	0.04	1.08	.04*	1.00-1.17
Internal entrapment	7.44 (7.21)	0.21	0.04	1.24	<0.001***	1.14-1.34						0.35	0.11	1.42	0.002**	1.14-1.77
External entrapment	14.63 (9.15)	0.09	0.03	1.09	0.001**	1.04-1.15						-0.25	0.09	0.78	0.006**	0.65-0.93
Goal re-engagement	22.75 (3.79)	-0.12	0.06	0.89	.049*	0.79-1.00						0.03	0.11	1.03	.76	0.84-1.27
Goal ambivalence	2.43 (1.24)	0.36	0.18	1.44	.04*	1.01-2.03						0.33	0.26	1.39	.21	0.83-2.31
Goal dis-engagement	10.97 (3.69)	-0.03	0.06	0.98	.671	0.87-1.10	--	--	--	--	--	--	--	--	--	--
Goal difficulty	4.14 (1.57)	0.07	0.14	1.07	.61	0.82-1.41	--	--	--	--	--	--	--	--	--	--
Goal progress	4.74 (1.50)	-0.15	0.15	0.87	.32	0.65-1.15	--	--	--	--	--	--	--	--	--	--
Goal success	7.35 (1.53)	-0.26	1.03	0.77	.07	0.59-1.02	--	--	--	--	--	--	--	--	--	--
Constant										-6.47					-8.19	
Nagelkere R^2										.51					.65	
Step χ^2										46.17**					17.25**	
Model χ^2															64.42**	

Note: The univariate analyses show the associations between the predictors and current suicide ideation. As current suicide ideation was coded as "1", odd ratios greater than one indicate a positive association between the predictors and suicide ideation, whereas odds ratios less than one indicate a negative association. Further, -- denotes a non-significant univariate predictor that was therefore not included in the multivariate analysis. OR = odds ratio, p = p-value, CI = confidence interval, PSSB = previous self-harm and suicide behaviour. *p<0.05 **p<0.01

Corrections for multiple analyses

The main analyses were performed uncorrected for multiple analyses. A total of 15 analyses were performed. A more stringent alpha level would indicate that the association for some of the predictors is not reliable i.e. goal ambivalence and goal reengagement ($p \neq < 0.01$). This is discussed further in the limitations section of the discussion. However, due to their support from the theoretical literature (see introduction section) it was justified to select these variables to explore in the subsequent confirmatory analysis of the hierarchical logistic regression. Internal entrapment is the only variable in the final multivariate model that remains significant with a more stringent alpha level, as does the significance of the overall model at both steps and the significance of the change in between models.

2.3.3 Moderation

Additional hierarchical logistic regression analyses were carried out to explore whether any of the goal variables moderated the relationship between entrapment and suicide ideation. Interaction terms between all entrapment variables (external, internal and total), and all goal variables i.e. goal adjustment (re-engagement and disengagement) and goal perceptions (ambivalence, importance, difficulty, progress and success), were included in the regression (Field, 2013). Each pair of entrapment and goal variables investigated were entered in a second step with their interaction term, controlling in the first step for the six control variables as above.

Due to the large number of additional analyses conducted to explore interactions, the alpha value was adjusted to 0.01. No significant interactions were

found (see *Appendix 8*).

2.5 Discussion

This study investigated internal and external entrapment as predictors of current suicide ideation in a sample of male prisoners. Other proximal predictors were also examined; both those established in the literature (i.e. depression, hopelessness, rumination, social support, other mental health diagnoses, and previous suicide or self-harm behaviour), in addition to less established factors identified by the IMV model (i.e. goal adjustment and goal perceptions, including goal importance, difficulty, progress, future success, and ambivalence).

Findings show that, as a set of variables, internal entrapment, external entrapment, goal re-engagement and goal ambivalence, were able to reliably distinguish between participants with current suicide ideation and those without, above that explained by a model of control variables only, thus offering support for the IMV model. Addition of these variables led the final model to explain two thirds of the variance in current suicide ideation, in comparison to explaining only half of the variance when not included. High internal entrapment, social support, and interestingly, low external entrapment, made unique contributions to the model and independently predicted participants experiencing suicide ideation. No interaction effects were found between entrapment or goal variables, indicating that the entrapment to suicide ideation relationship was not moderated by goal adjustment (i.e. disengagement or reengagement) or goal perceptions (e.g. importance, ambivalence etc.). This did not therefore offer support for the IMV model in terms of goals acting as motivational moderators for the entrapment to suicide ideation relationship. However, findings of this study must be considered with caution as the

study was underpowered for certain predictors and analyses and so may have missed certain effects that were present.

2.5.1 Entrapment

This study has replicated previous findings that entrapment can reliably predict suicide ideation in a prisoner population. The effects of entrapment on suicide ideation were found whilst controlling for well-established risk factors, such as depression and hopelessness. This supports previous findings that entrapment and suicide ideation have a relationship that appears to be independent of hopelessness, despite discussions of a conceptual overlap (Johnson, Gooding & Tarrier, 2008; Taylor et al., 2010).

More specifically, increasing internal entrapment, i.e. perceptions of being trapped by your own thoughts and feelings, was found to predict increased likelihood of current suicide ideation. The highest odds ratio was found for this predictor meaning it had the largest effect on suicide ideation, when the other variables were kept constant. This is supportive of previous findings within community patient populations. Rasmussen et al. (2010), in a study of patients admitted to hospital following self-harm, found evidence that internal external and total entrapment predicted suicide ideation. Owen et al. (2018) found further evidence for the relationship between internal entrapment and future suicide ideation at a four month follow up with bipolar patients. Both studies found that only total entrapment and internal entrapment (not external entrapment), mediated pathways to suicide ideation via defeat and lack of positive future thinking. Authors hypothesised that this finding may be because perceiving to be trapped by one's own thoughts and feelings accompanied by factors such as impaired future positive thinking and defeat is more

harmful than perceiving to be trapped by external factors. They also concluded that internal entrapment may be more closely related to defeat, a well-established risk factor for suicide. There is therefore some indication of the importance of internal entrapment in pathways to suicide ideation (as identified by the IMV model), and less support for external entrapment. As the IMV model suggests that suicide ideation develops as a means of managing inescapable psychological pain, this may explain why internal entrapment may be experienced as more detrimental and more likely to lead to suicide ideation.

Interestingly, *low*er levels of external entrapment were found to predict current suicide ideation in this study. As levels of perceived external entrapment increased, the likelihood of falling within the current suicide ideation category decreased. A similar result was also found in a prospective study with 181 new prisoners, where, over a four month period, 10% had reported to have self-harmed (Slade et al., 2014b). Low levels of entrapment were associated with acts of self-harm. The authors discussed this finding as indicative that being physically trapped may impact on an individual's sense of entrapment and reporting of their perceptions of this. They suggest that other indicators of entrapment should be explored (e.g. external locus of control and reduced help-seeking). O'Connor and Portsky's (2018) current opinion paper noted limitations of this study that are similar to the current study, as small samples were used and a high number of predictors tested.

Gooding et al., (2015) found that the total entrapment scale, i.e. both internal and external entrapment, did not predict suicide behaviour in a sample of prisoners. Findings of the current study suggest that external entrapment may have a differential impact and this could affect findings when the total scale is used.

It seems that the prison environment may unduly affect perceptions of external entrapment. It is an unexpected finding that participants reporting a higher sense of feeling physically trapped, and a greater desire to escape their situation, should be less likely to be experiencing current suicide ideation. One explanation for this finding could be that higher levels of external entrapment (characterised by current imprisonment) involves the endorsement of items such as "I have a strong desire to get away and stay away from where I am now". Such items could reflect future thinking and goal setting, which have both been linked to higher levels of well-being (O'Connor et al., 2008; Sheldon et al., 2002), particularly since prisoners typically have a specific date when their sentence will end. Internal entrapment however, could be experienced as having a less definitive ending and likely to transcend the participant's current situation, and therefore lead to higher likelihood of suicide ideation.

Those participants reporting perceptions of higher external entrapment could have also consequently been experiencing feelings of containment and a greater sense of structure from the prison regime, potentially in contrast to life outside of prison, where, for some prisoners, unemployment, homelessness and lack of routine are common (Harvey & Smedley, 2012). There was anecdotal support found for this where some participants reported that although prison was restricting, it provided basic living conditions, structure, and less accessibility to drugs.

Entrapment is a fairly broad concept and the above explanations point to there possibly being a different conceptual understanding and experience of entrapment in prisons (compared to a general population), perhaps not captured by the measurement tool used. This could give some support to the unexpected findings.

At one level, entrapment describes a feeling, but it may manifest differently in a prison setting; such as imprisonment itself (i.e. loss of liberty), which seems to affect people differently (Harvey & Smedley, 2012), the nature of the environment (e.g. cell size, cleanliness, single or shared cell) and regime (e.g. time out of cell for activities such as gym, visits, socialising), degree of safety (e.g. bullying or gang-related activity), and feeling trapped due to underlying mental disorders. Therefore, the measurement of entrapment in prisons may need to be adapted to capture one or many of these different aspects.

A range of scores were found by participants for levels of perceived external entrapment. This highlights the perception aspect of the measure, and that being physically trapped in a prison does not necessarily mean high levels of perceived external entrapment. This adds to the discussion of why some prisoners experience suicide ideation and others do not, despite high prevalence of certain risk factors and the same environment. In the pre-motivational phase of the IMV model it is identified through the diathesis-stress perspective that predisposing vulnerabilities may leave some individuals more sensitive to entrapment than others (Schotte & Clum, 1987), thus increasing overall risk. In summary, it is important that feelings of external entrapment are not assumed for this population.

Social support has been viewed as a rescue factor in models of suicide, for example the cry of pain model (Williams, 2001), where perception of low quality social support, i.e. low rescue-seeking, has been considered a further indication of feelings of defeat and entrapment. Therefore, findings in the current study that, as reports of poor social support increased, the likelihood of reporting current suicide ideation increased, is not surprising and could also provide further support for the

presence of entrapment for those participants experiencing suicide ideation. Individuals not accessing, or without available or adequate social support, may feel more trapped. Poor social support has been well evidenced to be associated with suicide risk. For example, Rasmussen et al. (2010) found low social support was associated with self-harm with repeat self-harmers compared to control groups, and that this was stronger in repeat versus first time self-harmers. Furthermore, prisoners have reported on their preferred interventions in response to reported suicide ideation, and these included family contact and talking with mental health staff (Way, Kaufman, Knoll & Chlebowski, 2013); both interventions affecting levels of social support.

2.5.2 Goals

The findings regarding goal adjustment are somewhat similar to previous research, in that low goal re-engagement was found to be linked to suicide ideation in univariate analyses. However, this relationship was only marginally significant and in the final model goal re-engagement was not a unique predictor of suicide ideation. Similarly, perceptions of goal ambivalence i.e. how unhappy participants would be if successful in their goals, was also not a unique contributor to the model once other variables were controlled for, despite being able to predict suicide ideation on its own. This suggests that the relationship between these two goal variables and suicide ideation may be explained by other factors, such as entrapment, as the IMV model would suggest, or for example, if a participant is depressed it may increase ambivalence about goals or make them less likely to engage with new goals.

With regards to other goal perceptions measured in this study, perceptions of future success of goals was not found to be predictive of suicide ideation. As a lack

of positive future thinking has been identified as a risk factor for suicide it might have been expected that low scores for future goal success would have predicted suicide ideation. However this relationship was not found, which can possibly be explained by study limitations, discussed below. Looking at the data, the mean future goal success score was quite high (*M*=7.35, maximum possible score = 9), which may link to low numbers of suicidal participants.

2.5.3 Suicide ideation findings

There are a number of possible reasons why few participants experiencing suicide ideation were found, such as under-reporting, as reported in other studies (e.g. Way et al., 2013; Safer, 1997; Velting et al., 1998). Nock et al. (2010) recognised that few individuals experiencing suicide ideation are willing or perhaps capable to report their intentions and so researched the value of using implicit behaviour-based markers of suicide intention. It was found that participants were more likely to report history of suicide. Therefore, findings in this study that previous self-harm and suicide behaviour was trending towards significance in predicting current suicide ideation is promising given that there is evidence that current suicide ideation can be more difficult to gain an accurate measure of.

Other potential explanations for lack of current suicide ideation being reported might include participants wanting to avoid being placed on an ACCT, something supported by anecdotal evidence from participants not captured in the questionnaires. The ACCT process can include aspects of risk management that are often deemed undesirable to prisoners, such as sharing a cell with another prisoner (if previously in a single cell), and regular monitoring throughout the night, which can lead to frequent disturbances and interpersonal conflicts with cell-mates. Further,

participants that were currently self-harming, or engaging in suicidal behaviours, were also more likely to be self-isolating and therefore difficult to approach and recruit to participate in the study.

Another possible explanation may be linked to how participants conceptualised suicide ideation. For example, whether ambivalence about living, or endorsing items such as "I don't want to be here anymore" indicated suicide ideation. Previous research suggests that low accuracy in reporting suicide and self-harm behaviour can be due to difficulties establishing a single definition as well as participant's difficulties distinguishing between suicidal behaviour and behaviours associated with intense distress (Kenny & Grant, 2007).

2.5.4 Strengths and limitations

This study has provided evidence to inform the identification and management of at-risk prisoners. The final model within this study for prediction of current suicide ideation was relatively robust by controlling for a range of psycho-pathological confounding variables i.e. hopelessness, depression, social support, rumination, other mental health diagnoses and previous suicide and self-harm behaviour. It is also one of few studies investigating the IMV model with transfer prisoners, a population that has been the target of many nationwide safety initiatives due to higher incidence rate of suicide (Ministry of Justice, 2010). This study also provides evidence of feasibility for cross-sectional questionnaire-based studies using this population, which is important considering the limited research taking place within prisons. There were very limited reports of fatigue during testing and this appeared to be helped by making the administration a more interactive process, through researchers reading out questions. Many of the participants appeared to

welcome the space to talk. Where participants did report fatigue, they were offered a break or, on a couple of occasions, testing was recommenced at another time. However, where researchers may have not noticed signs of fatigue, the validity of the participant's responses may have been affected by this.

There were limitations to this study. As this was a cross-sectional study and not prospective, although a relationship was found between entrapment and suicide ideation, directionality of the relationship is unclear. It could be that participants experiencing suicide ideation subsequently feel more entrapped due to wanting to end their lives, but not having the means or ability to do so.

This study was limited by recruitment issues for participants experiencing current suicide ideation, despite attempts to over-sample higher risk participants. This is similar to other studies (e.g. Senior et al., 2007) where, in their cross-sectional prison study into the identification and management of suicide risk in local prisons, only 12% of participants reported on the BSSI experiencing a desire to kill themselves and/or a reluctance to take steps to avoid death if in a life-threatening situation (i.e. gateway questions for the rest of the questionnaire). Therefore, there were likely issues present with reporting bias, which affects the validity of the results found in the study, for example, if a participant was withholding information about their suicide ideation and then completing the predictor measures honestly.

This study included a smaller sample of prisoners than indicated by the initial power calculation and a retrospective calculation showed the study was underpowered to detect effects of certain predictors i.e. goal disengagement. There was also likely to have been inadequate power for moderation analyses that included multiple variables and interaction terms. Further, few participants were reporting

current suicide ideation and so sample size in this category of the outcome variable was small. Therefore there was an increased risk of Type 2 error, and so important effects may have been missed. It may be that with a larger sample, more significant findings would be found. Further, multiple analyses increased the risk of Type 1 error. Alpha values for the multiple comparisons for exploration of moderation were adapted to 0.01, however they were uncorrected for the main analyses. Therefore, the results and conclusions made must be viewed with caution.

There were limitations in the approach to model development. It could be argued that it would have been more methodologically robust to have selected variables for entry into the model according to their support in the theoretical literature rather than on the basis of their statistical significance in the univariate analyses. This selection method involved multiple analyses, which increased chances of Type 1 error and a predictor being selected for the main analysis despite there not being a reliable association with the outcome variable. However, these analyses were intended to be exploratory and to be followed by more confirmatory data analysis. The final four predictor variables of interest were also supported in the theoretical literature.

In terms of generalisability, this study involved a small sample of male, C category transferred prisoners from a single site, where 87% had been at the prison for less than three months. Therefore, the application of these findings must consider these points and one would recommend multi-site replication with other prisoner groups for future research.

2.5.5 Clinical Implications

Findings suggest that including measures of entrapment are important in effective assessment of suicide ideation in prisoners. Interestingly, this is not a part of current local or national risk assessment procedures (e.g. ACCT). In a population where psycho-social risk factors for suicide are common, theoretically based risk factors can be used to better identify at-risk prisoners and inform effective management. Those professionals working with prisoners at risk of suicide should aim to address and reframe entrapment beliefs through therapeutic interventions, modify unrealistic aspirations and enhance the availability of other options through highlighting other positive aspects of an individual's life (O'Connor & Portsky, 2018; Tarrier et al., 2013), or supporting them to identify and set positive goals. Preliminary evidence was found for the relevance of an individual's ability to engage with new goals, and of how ambivalent an individual feels about their goals, which suggests an important role for goal setting work. The results of this current study also suggest that current practices under the ACCT process of assessing levels of social support and aiming to increase and put social support in place for suicidal inmates is important (Shaw & Turnbull, 2006). Ideas for how this could be implemented in clinical practice include exploring means of promoting social connectedness (e.g., pseudo-families), increasing communication with family, sharing cells, involvement in support groups, and contact with religious services.

2.5.6 Recommendations for future research

This study highlights the need to explore the concept of entrapment in prison populations further in future research. Previous findings of differential effects of internal and external entrapment are supported, indicating that future studies should

utilise independent measures of these constructs. In order to recruit a sufficient number of participants reporting current suicide ideation, future research may wish to utilise implicit measures or measures of recent suicide ideation, in order to overcome issues of under-reporting. Multiple measures of suicide ideation are also useful where interpretation of questions may vary, and those that tap into different timescales for suicide risk i.e. historical, recent, and current. Future studies should also aim to utilise prospective designs so that more information can be gleaned about the direction of the entrapment-suicide relationship. Further, prospective studies would allow for temporal conclusions to be made about the relationships between predictor and dependent variables, for example, is change seen in the dependent variable because there were high levels at baseline. This could be improved by qualitative reports from participants, exploring psychological mechanisms, or repeated testing over time to measure changes in entrapment. Longitudinal studies would also determine if entrapment is a long-term predictor of suicide ideation, as this is a limitation of cross sectional studies. Studies into psychological interventions for entrapment would be useful – and can highlight if it is modifiable (Owen et al., 2018). Due to the potential risk of Type 1 error in this study, and issues with lack of power, replication is needed by future studies to investigation whether these findings still stand.

Finally, the absence of a measure of defeat in this study means that it is not possible to make conclusions about whether the relationship between internal and external entrapment and suicide ideation could have been better explained by this construct. However, it could be said that the defeat construct was measured through other means, such as low engagement with new goals. There is evidence of an

independent relationship between entrapment and suicide ideation (e.g. Tucker et al., 2016), which was the focus of this study. However, future research may wish to replicate this with the inclusion of perceptions of defeat to see if findings still stand.

2.5.7 Conclusion

This study aimed to investigate the effects of internal and external entrapment on suicide ideation. Further evidence has been found of a relationship between entrapment and suicide ideation in a prison population, and support for differential effects of internal and external entrapment. The nature of entrapment as a concept and its meaning to prisoners warrants further study. However, it is suggested that levels of entrapment needs to be routinely considered in the assessment and management of suicide risk. Support was not found for the IMV model in that goal variables were not found to affect the strength of the entrapment to suicide ideation relationship. There is some evidence implicating the benefit of exploration of prisoner's perceptions of their goals, and ability to engage with new goals. In particular, the prison setting and lack of control may enhance ambivalence about personal goals, and limit engagement with new goals, possible factors in the development of suicide ideation. Similarly, individuals experiencing suicide ideation were less likely to identify and work towards new goals. These potentially very important risk factors could be addressed through specific consideration in management and care of at risk prisoners.

References

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179-211.

Baca-Garcia, E., Perez-Rodriguez, M. M., Oquendo, M. A., Keyes, K. M., Hasin, D. S., Grant, B. F., & Blanco, C. (2011). Estimating risk for suicide attempt: Are we asking the right questions?: Passive suicidal ideation as a marker for suicidal behavior. *Journal of Affective Disorders*, *134*(1-3), 327-332.

Baumeister, R. F. (1990). Suicide as escape from self. *Psychological review*, *97*(1), 90.

Baumeister, R. F., & Heatherton, T. F. (1996). Self-regulation failure: An overview. *Psychological Inquiry*, 7(1), 1-15.

Beck, A. T., Steer, R. A., Beck, J. S., & Newman, C. F. (1993). Hopelessness, depression, suicidal ideation, and clinical diagnosis of depression. *Suicide and Life-Threatening Behavior*, *23*(2), 139-145.

Beck, A. T., Steer, R. A., & Ranieri, W. F. (1988). Scale for suicide ideation: Psychometric properties of a self-report version. *Journal of Clinical Psychology*, 44(4), 499-505.

Blalock, D. V., Young, K. C., & Kleiman, E. M. (2015). Stability amidst turmoil: Grit buffers the effects of negative life events on suicidal ideation. *Psychiatry Research*, 228(3), 781-784.

Bogg, T., Voss, M. W., Wood, D., & Roberts, B. W. (2008). A hierarchical investigation of personality and behaviour: Examining Neo-Socioanalytic models of health-related outcomes. *Journal of Research in Personality*, 42(1), 183-207.

Bonner, R. L., & Rich, A. R. (1990). Psychosocial vulnerability, life stress, and suicide ideation in a jail population: a cross‐validation study. *Suicide and Life‐Threatening Behavior*, 20(3), 213-224.

Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control-process view. *Psychological Review*, 97(1), 19.

Cook, R. D., & Weisberg, S. (1982). *Residuals and influence in regression*. New York: Chapman and Hall.

Dhingra, K., Boduszek, D., & O'Connor, R. C. (2015). Differentiating suicide attempters from suicide ideators using the Integrated Motivational–Volitional model of suicidal behaviour. *Journal of Affective Disorders*, *186*, 211-218.

Dhingra, K., Boduszek, D., & O'Connor, R. C. (2016). A structural test of the integrated motivational-volitional model of suicidal behaviour. *Psychiatry Research*, *239*, 169-178.

Dickson, J. M., Moberly, N. J., & Kinderman, P. (2011). Depressed people are not less motivated by personal goals but are more pessimistic about attaining them. *Journal of Abnormal Psychology*, 120(4), 975.

Dixon, A. K. (1998). Ethological strategies for defence in animals and humans: their role in some psychiatric disorders. *British Journal of Medical Psychology*, *71*(4), 417-445.

Eddington, K. M. (2014). Perfectionism, goal adjustment, and self-regulation: A short-term follow-up study of distress and coping. *Self and Identity*, 13(2), 197-213.

Eidhin, M. N., Sheehy, N., O'Sullivan, M., & McLeavey, B. (2002). Perceptions of the environment, suicidal ideation and problem-solving deficits in an offender population. *Legal and Criminological Psychology, 7*(2), 187-201.

Emmons, R. A. (1986). Personal strivings: An approach to personality and subjective well-being. *Journal of Personality and Social psychology*, 51(5), 1058.

Emmons, R. A., & King, L. A. (1988). Conflict among personal strivings: immediate and long-term implications for psychological and physical well-being. *Journal of Personality and Social Psychology*, 54(6), 1040.

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. *Behavior research methods*, *41*(4), 1149-1160.

Favril, L., Vander Laenen, F., Vandeviver, C., & Audenaert, K. (2017). Suicidal ideation while incarcerated: Prevalence and correlates in a large sample of male prisoners in Flanders, Belgium. *International Journal of Law and Psychiatry, 55*, 19-28.

Fazel, S., Cartwright, J., Norman-Nott, A., & Hawton, K. (2008). Suicide in prisoners: a systematic review of risk factors. *J Clin Psychiatry*, 69(11), 1721-31.

Fazel, S., Grann, M., Kling, B., & Hawton, K. (2011). Prison suicide in 12 countries: an ecological study of 861 suicides during 2003–2007. *Social Psychiatry and Psychiatric Epidemiology,* 46(3), 191-195.

Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. Sage, London

Fliege, H., Lee, J. R., Grimm, A., & Klapp, B. F. (2009). Risk factors and correlates of deliberate self-harm behavior: A systematic review. *Journal of psychosomatic research, 66*(6), 477-493.

Gardner, K. J., Dodsworth, J., & Selby, E. A. (2014). Borderline personality traits, rumination, and self-injurious behavior: An empirical test of the emotional cascades model in adult male offenders. *Journal of Forensic Psychology* Practice, 14(5), 398-417.

Gilbert, P., & Allan, S. (1998). The role of defeat and entrapment (arrested flight) in depression: an exploration of an evolutionary view. *Psychological medicine*, 28(3), 585-598.

Gooding, P., Tarrier, N., Dunn, G., Shaw, J., Awenat, Y., Ulph, F., & Pratt, D. (2015). The moderating effects of coping and self-esteem on the relationship between defeat, entrapment and suicidality in a sample of prisoners at high risk of suicide. *European Psychiatry*, 30(8), 988-994.

Gooding, P. A., Tarrier, N., Dunn, G., Awenat, Y., Shaw, J., Ulph, F., & Pratt, D. (2017). Psychological characteristics and predictors of suicide probability in high-risk prisoners. *Criminal Justice and Behavior*, *44*(3), 321-335.

Harvey, J., & Smedley, K. (Eds.). (2012). *Psychological therapy in prisons and other settings*. Routledge.

Hawton, K., Linsell, L., Adeniji, T., Sariaslan, A., & Fazel, S. (2014). Self-harm in prisons in England and Wales: an epidemiological study of prevalence, risk factors, clustering, and subsequent suicide. *The Lancet*, 383(9923), 1147-1154.

Hunter, E. C., & O'Connor, R. C. (2003). Hopelessness and future thinking in parasuicide: The role of perfectionism. *British Journal of Clinical Psychology*, 42(4), 355-365.

Johnson, J., Gooding, P., & Tarrier, N. (2008). Suicide risk in schizophrenia: explanatory models and clinical implications, The Schematic Appraisal Model of Suicide (SAMS). *Psychology and Psychotherapy: Theory, Research and Practice*, *81*(1), 55-77.

Joiner, T.E., 2005. *Why People Die by Suicide*. Harvard University Press, Cambridge, MA.

Kasser, T. (1996). Aspirations and Well-Being in a Prison Setting. *Journal of Applied Social Psychology,* 26(15), 1367-1377.

Kelly, R. E., Mansell, W., & Wood, A. M. (2011). Goal conflict and ambivalence interact to predict depression. *Personality and Individual Differences*, 50(4), 531-534.

Kelly, R. E., Mansell, W., & Wood, A. M. (2015). Goal conflict and well-being: A review and hierarchical model of goal conflict, ambivalence, self-discrepancy and self-concordance. *Personality and Individual Differences*, 85, 212-229.

Kenny, D. T., & Grant, J. (2007). Reliability of self-report of health in juvenile offenders. *Vulnerable Children and Youth Studies*, 2(2), 127-141.

King, L. A., Richards, J. H., & Stemmerich, E. (1998). Daily goals, life goals, and worst fears: Means, ends, and subjective well-being. *Journal of Personality*, *66*(5), 713-744.

Klinger, E. (1977). *Meaning and void: Inner experience and the incentives in people's lives*. University of Minnesota Press.

Klonsky, E. D., & May, A. M. (2014). Differentiating suicide attempters from suicide ideators: A critical frontier for suicidology research. *Suicide and Life-Threatening Behavior,* 44(1), 1-5.

MacLeod, A. K., Pankhania, B., Lee, M., & Mitchell, D. (1997). Parasuicide, depression and the anticipation of positive and negative future experiences. *Psychological Medicine,* 27(4), 973-977.

Martin, M. S., Dorken, S. K., Simpson, A. I., McKenzie, K., & Colman, I. (2014). The predictive validity of the Depression Hopelessness Suicide screening form for self-harm among prisoners. *The Journal of Forensic Psychiatry & Psychology,* 25(6), 733-747.

Marzano, L., Hawton, K., Rivlin, A., & Fazel, S. (2011). Psychosocial influences on prisoner suicide: a case-control study of near-lethal self-harm in women prisoners. *Social Science & Medicine, 72*(6), 874-883.

May, A. M., & Klonsky, E. D. (2016). What distinguishes suicide attempters from suicide ideators? A meta-analysis of potential factors. *Clinical Psychology: Science and Practice, 23*(1), 5-20.

McDougall, C., Cohen, M. A., Swaray, R., & Perry, A. (2003). The costs and benefits of sentencing: A systematic review. *The Annals of the American Academy of Political and Social Science, 587*(1), 160-177.

Menard, S. (2002). *Applied logistic regression analysis (Vol. 106).* Sage.

Michalak, J., & Holtforth, M. G. (2006). Where do we go from here? The goal perspective in psychotherapy. *Clinical Psychology: Science and Practice,* 13(4), 346-365.

Miller, G. E., & Wrosch, C. (2007). You've gotta know when to fold'em: Goal disengagement and systemic inflammation in adolescence. *Psychological Science,* 18(9), 773-777.

Mills, J. F., & Kroner, D. G. (2004). A New Instrument to Screen for Depression, Hopelessness, and Suicide in Incarcerated Offenders. *Psychological Services*, 1(1), 83.

Mills, J. F., & Kroner, D. G. (2005). Screening for suicide risk factors in prison inmates: Evaluating the efficiency of the Depression, Hopelessness and Suicide Screening Form (DHS). *Legal and Criminological Psychology*, 10(1), 1-12.

Ministry of Justice (2010). *Guide to Safety in Custody Statistics: Ministry of Justice Statistics Bulletin*. London: Ministry of Justice. Retrieved from: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/611188/guide-safety-in-custody-statistics.pdf

Ministry of Justice, National Offender Management Service. (2011). *Management of prisoners at risk of harm to self, to others and from others*. Safer Custody, PSI 64/2011. Retrieved from: https://www.justice.gov.uk/offenders/psis/prison-service-instructions-2011

Ministry of Justice. (2013). *Safety in custody statistics: deaths in prison custody 1978–2012*. Retrieved from: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/192434/safety-custody-deaths-dec-12.xls

Ministry of Justice (2018). *Prison population projections 2018 to 2023, England and Wales*. London: Ministry of Justice. Retrieved from: https://www.gov.uk/government/statistics/prison-population-projections-ns

Morgan, H. G., & Stanton, R. (1997). Suicide among psychiatric in-patients in a changing clinical scene: Suicidal ideation as a paramount index of short-term risk. *The British Journal of Psychiatry*, *171*(6), 561-563.

Nock, M. K., Park, J. M., Finn, C. T., Deliberto, T. L., Dour, H. J., & Banaji, M. R. (2010). Measuring the suicidal mind: Implicit cognition predicts suicidal behavior. *Psychological science*, *21*(4), 511-517.

Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. *Journal of Abnormal Psychology*, 100(4), 569.

O'Connor, R. C. (2011). Towards an integrated motivational–volitional model of suicidal behaviour. In R. C. O'Connor, S. Platt & J. Gordon (Eds.), *International Handbook of Suicide Prevention: Research, Policy and Practice*. Chicester, UK: John Wiley.

O'Connor, R. C., Fraser, L., Whyte, M. C., MacHale, S., & Masterton, G. (2008). A comparison of specific positive future expectancies and global hopelessness as predictors of suicidal ideation in a prospective study of repeat self-harmers. *Journal of Affective Disorders*, 110(3), 207-214.

O'Connor, R. C., Fraser, L., Whyte, M. C., MacHale, S., & Masterton, G. (2009). Self-regulation of unattainable goals in suicide attempters: The relationship

between goal disengagement, goal reengagement and suicidal ideation. *Behaviour Research and Therapy*, 47(2), 164-169.

O'Connor, R. C., & Nock, M. K. (2014). The psychology of suicidal behaviour. *The Lancet Psychiatry*, *1*(1), 73-85.

O'Connor, R. C., O'Carroll, R. E., Ryan, C., & Smyth, R. (2012). Self-regulation of unattainable goals in suicide attempters: a two year prospective study. *Journal of Affective Disorders*, 142(1), 248-255.

O'Connor, R. C., & Portzky, G. (2018). The relationship between entrapment and suicidal behavior through the lens of the integrated motivational–volitional model of suicidal behavior. *Current Opinion in Psychology*, 22, 12-17.

O'connor, R. C., Rasmussen, S., & Hawton, K. (2012). Distinguishing adolescents who think about self-harm from those who engage in self-harm. *The British Journal of Psychiatry*, 200(4), 330-335.

O'connor, R. C., Smyth, R., Ferguson, E., Ryan, C., & Williams, J. M. G. (2013). Psychological processes and repeat suicidal behavior: A four-year prospective study. *Journal of Consulting and Clinical Psychology*, 81(6), 1137.

Otto, K., & Dalbert, C. (2005). Belief in a just world and its functions for young prisoners. *Journal of Research in Personality*, 39(6), 559-573.

Owen, R., Dempsey, R., Jones, S., & Gooding, P. (2018). Defeat and entrapment in bipolar disorder: exploring the relationship with suicidal ideation from a psychological theoretical perspective. *Suicide and Life-Threatening Behavior*, *48*(1), 116-128.

Parker, H. (2018). *Examining personal goals through guided exploration: A proof of principle* (Masters Dissertation).

Rasmussen, S. A., Fraser, L., Gotz, M., MacHale, S., Mackie, R., Masterton, G., ... & O'connor, R. C. (2010). Elaborating the cry of pain model of suicidality: testing a psychological model in a sample of first-time and repeat self-harm patients. *British Journal of Clinical Psychology*, 49(1), 15-30

Rettersol N. (1993). *Suicide: A European Perspective*. Cambridge: Cambridge University Press

Rivlin, A., Hawton, K., Marzano, L., & Fazel, S. (2010). Psychiatric disorders in male prisoners who made near-lethal suicide attempts: case–control study. *The British Journal of Psychiatry*, 197(4), 313-319.

Rivlin, A., Hawton, K., Marzano, L., & Fazel, S. (2013). Psychosocial characteristics and social networks of suicidal prisoners: towards a model of suicidal behaviour in detention. *PloS one*, *8*(7), e68944.

Romero, E., Villar, P., Luengo, M. Á., & Gómez-Fraguela, J. A. (2009). Traits, personal strivings and well-being. *Journal of Research in Personality*, 43(4), 535-546.

Safer, D. J. (1997). Self-reported suicide attempts by adolescents. *Annals of Clinical Psychiatry,* 9(4), 263-269.

Schombs, F. (2019). *Differences between no risk, ideators, and enactors of self-harm in a sample of transferred prisoners through the lens of the Integrated Motivational-Volitional (IMV) Model*. Unpublished clinical psychology

doctoral thesis, Department of Clinical, Educational, and Health Psychology, University College London.

Schotte, D. E., & Clum, G. A. (1987). Problem-solving skills in suicidal psychiatric patients. *Journal of Consulting and Clinical Psychology*, *55*(1), 49.

Senior, J., Hayes, A. J., Pratt, D., Thomas, S. D., Fahy, T., Leese, M., ... & Pearson, A. (2007). The identification and management of suicide risk in local prisons. *The Journal of Forensic Psychiatry & Psychology*, 18(3), 368-380.

Shaw, J., & Turnbull, P. (2006). Suicide in custody. *Psychiatry*, *5*(8), 286-288.

Sheldon, K. M., & Elliot, A. J. (1999). Goal striving, need satisfaction, and longitudinal well-being: the self-concordance model. *Journal of Personality and Social Psychology*, 76(3), 482.

Sheldon, K. M., Kasser, T., Smith, K., & Share, T. (2002). Personal goals and psychological growth: Testing an intervention to enhance goal attainment and personality integration. *Journal of Personality*, 70(1), 5-31.

Shneidman, E. S. (1998). *The suicidal mind*. Oxford University Press, USA.

Siddaway, A. P., Taylor, P. J., Wood, A. M., & Schulz, J. (2015). A meta-analysis of perceptions of defeat and entrapment in depression, anxiety problems, posttraumatic stress disorder, and suicidality. *Journal of Affective Disorders*, *184*, 149-159.

Sincoff, J. B. (1992). Ambivalence and defense: Effects of a repressive style on normal adolescents' and young adults' mixed feelings. *Journal of Abnormal Psychology*, 101(2), 251-256.

Slade, K. & Edelmann, R. (2014a). 'Can theory predict the process of suicide on entry to prison? Predicting dynamic risk factors for suicide ideation in a high-risk prison population'. *Crisis* 35(2):82–89.

Slade, K., Edelmann, R., Worrall, M., & Bray, D. (2014b). Applying the Cry of Pain Model as a predictor of deliberate self-harm in an early-stage adult male prison population. *Legal and Criminological Psychology*, 19(1), 131-146.

Stewart, G. W. (1987). Collinearity and least squares regression. *Statistical Science*, 2(1), 68-84.

Strauman, T. J. (2002). Self-regulation and depression. *Self and Identity*, 1(2), 151-157.

Tarrier, N., Gooding, P., Pratt, D., Kelly, J., Awenat, Y., & Maxwell, J. (2013). *Cognitive behavioural prevention of suicide in psychosis: a treatment manual*. Routledge.

Taylor, P. J., Gooding, P. A., Wood, A. M., Johnson, J., Pratt, D., & Tarrier, N. (2010). Defeat and entrapment in schizophrenia: The relationship with suicidal ideation and positive psychotic symptoms. *Psychiatry Research*, 178(2), 244-248.

Thomsen, D. K., Tønnesvang, J., Schnieber, A., & Olesen, M. H. (2011). Do people ruminate because they haven't digested their goals? The relations of rumination and reflection to goal internalization and ambivalence. *Motivation and Emotion*, 35(2), 105-117.

Treynor, W., Gonzalez, R., & Nolen-Hoeksema, S. (2003). Rumination reconsidered: A psychometric analysis. *Cognitive Therapy and Research*, 27(3), 247-259.

Tucker, R. P., O'Connor, R. C., & Wingate, L. R. (2016). An investigation of the relationship between rumination styles, hope, and suicide ideation through the lens of the integrated motivational-volitional model of suicidal behavior. *Archives of Suicide Research*, 20(4), 553-566.

Vaughan, R. (2017). Oversampling in health surveys: Why, when, and how? *American Journal of Public Health*, 107 (8), 2014-2015.

Vaux, A., Phillips, J., Holly, L., Thomson, B., Williams, D., & Stewart, D. (1986). The social support appraisals (SS-A) scale: Studies of reliability and validity. *American Journal of Community Psychology*, 14(2), 195-218.

Velting, D. M., Rathus, J. H., & Asnis, G. M. (1998). Asking adolescents to explain discrepancies in self-reported suicidality. *Suicide and Life-Threatening Behavior*, 28(2), 187-196.

Wallenius, M. (2000). Personal project level of abstraction and project conflict: relations to psychological well-being. *European Journal of Personality*, 14(2), 171-184.

Way, B. B., Kaufman, A. R., Knoll, J. L., & Chlebowski, S. M. (2013). Suicidal ideation among inmate-patients in state prison: Prevalence, reluctance to report, and treatment preferences. *Behavioral Sciences & the Law*, 31(2), 230-238.

Williams J.M.G., (2001). *The Cry of Pain*. London: Penguin.

Williams, J. M. G., Barnhofer, T., Crane, C., & Beck, A. T. (2005). Problem solving deteriorates following mood challenge in formerly depressed patients with a history of suicidal ideation. *Journal of Abnormal Psychology*, 114(3), 421.

World Health Organisation (2018). *National suicide prevention strategies*. Retrieved from: https://www.who.int/mental_health/suicide-prevention/national_strategies_2019/en/

Wrosch, C., Scheier, M. F., Miller, G. E., Schulz, R., & Carver, C. S. (2003). Adaptive self-regulation of unattainable goals: Goal disengagement, goal reengagement, and subjective well-being. *Personality and Social Psychology Bulletin*, 29(12), 1494-1508.20.

3.0 Critical Appraisal

Suicide research with a vulnerable client group

3.1 Overview

This critical appraisal is a discussion of how my involvement in this research project came about, the experiential process, and a more detailed discussion of its real-life implications.

In the first section I reflect on personal motivations to researching this area, related to improving the safety of prisoners. A critical discussion is then provided of the experiential process, highlighting the impact of the specific challenges present when conducting research in a prison setting. Particular attention will be paid to themes of coercion, participant factors, security and control and the role of the researcher, including the restrictions to this. In the final section, the findings of the empirical and review papers are more closely discussed with reference to the current practice for the management of suicide and self-harm in prisons i.e. the Assessment, Care in Custody and Teamwork (ACCT) framework.

3.2 Personal Motivations

Prior to embarking on this research project, I had already had experience of working in the probation service and a medium secure forensic hospital, and therefore, for me, prison felt like the final piece to my forensic puzzle. Working with offenders is an area that even the most non-judgemental and empathic professional can find a particular challenge. In probation, whilst working with offenders convicted of sexual offences, I saw the impact it had on my personal and professional development, recognising my ability to empathise, build relationships with, and formulate

offence related behaviours. I have always found the interaction between psycho-social factors and offending interesting, and recognised that often there is a complex pathway of these factors (often in the context of adverse life experiences), that lead individuals to commit offences. Prisoners are a population that divide public opinion: those who strongly advocate for punishment and retribution, and those who believe in rehabilitation, and those, like myself, who see the necessity for both. In my opinion, there is a huge role for psychological interventions in the rehabilitation of prisoners, and I was struck by the prevalence rates of suicide and self-harm in prisons. There has been a large focus of research on interventions that address recidivism and other offence-related factors, highlighting the priority for public protection. There are however gaps in other areas, such as psychological interventions for suicide and self-harm and where I considered there to be an opportunity to conduct research to highlight and contribute to this field.

3.3 Challenges in prison research

Research with a vulnerable population

Research with prisoners involves the recruitment and participation of a captive participant group. This has a number of implications in terms of sampling as well as ethical considerations, including possible coercion, obtaining informed consent as well as understanding individual motivations for participation. Prisoners are vulnerable for a variety of reasons, including high prevalence of low intellectual functioning, illiteracy, language barriers, psychiatric disorders, and a general imbalance of power (Moser et al., 2004). Free and informed consent can therefore be easily undermined. Concern has also been raised about the impact of suicide and self-

harm research on the wellbeing of research participants, for which contrary evidence has been found that exposure to suicide content can lead to (small) reductions in suicide behaviour (Blades, Stritzke, Page & Brown, 2018).

Researchers have suggested that there may be an overprotection of prisoners that has impacted on the level of research interest with this population due to high levels of perceived vulnerability. There have been findings supportive of adequate decisional capacity, even when psychiatric problems are high, and a lack of evidence for coercion being a reason for participating in research (e.g. Moser et al., 2004). Reasons previously cited for participating in research by prisoners have also included meeting new people, managing boredom, helping society, and hoping to improve treatment through appearing cooperative (Moser et al., 2004). These reasons appeared to motivate participation in this thesis, although this was not formally explored.

It is important to consider the ethical implications of any research, and hence the process of acquiring ethical approval via an objective ethics board. Particularly with this population there has been a dark history of misuse of prisoners for experimentation (e.g. Hornblum, 2013), which no doubt has some bearing on the careful practices implemented currently. Similarly, my experience of the process of applying for and acquiring ethical approval was fairly complicated and at times, seemingly over-comprehensive due to the need for multi-agency involvement (e.g. local prison agreement, Joint Research Office, National Offender Management Service, and Research Ethics Committee), which all required individual application processes and timescales for review. One might wonder the potential impact that this could have on

other researchers, whereby research with this population becomes neglected or abandoned due to limited resources available to navigate these systems. One real life example of the additional resources required for this population was experienced in the data collection for the empirical paper presented in part two of this thesis. The ethical review board requested that participants not be approached directly by the researchers (to minimise the risk of participation via coercion). Therefore, this required the research team to liaise with and recruit support from prison staff (e.g. nursing staff conducting screening assessments, the mental health team) to make first contact with prisoners, providing basic information about the content and rationale of the study and to obtain consent to be approached by one of the researchers to talk about the research in more detail. The impact of this being that inconsistent practices were found across the staff team, which extended the time frame for data collection.

With regards to informed consent, I experienced participants in this study to be confident in weighing up the pros and cons of taking part. However, following the recommendations of the ethics board, participants in this context had additional protection, some of which may have required this. Having had a brief introduction to the research prior to contact with the primary researcher also meant that participants were commonly more in the contemplative stage of taking part, which was helpful. Some prisoners actually approached the researchers in person to request to take part, an encouraging finding, potentially a result of the involvement of other staff in the early phases of recruitment and word-of-mouth.

Overall, there were clear positive aspects to the approach recommended by the ethical review board. However, as highlighted previously, this also impacted negatively on the efficiency of recruitment and data collection.

Prioritising research

There were barriers related to the need for staff (outside the primary research team) to make the first contact with potential participants. At times, a "bottleneck", formed whereby the primary researcher was waiting for prison staff to gain initial consent. Carrying out research in a prison setting clearly requires the whole system to be on board, problematic for a system characterised by understaffing, high demand and limited resources.

As part of building staff engagement with this research, the research team visited staff team meetings and spoke with the healthcare manager. One member of the nursing team who was responsible for receiving new arrival prisoners at reception voiced concerns about being part of the recruitment process. This staff member ultimately refused to mention the research study to new arrivals to gain initial consent, meaning general uptake of recruitment by the wider reception team was also low. Having the healthcare manager re-iterate the rationale for the staff role in the recruitment process was useful and highlighted the need for this support. I felt frustrated and surprised by this apparent lack of willingness to help with research, particularly with regards to a study focusing on the health and wellbeing of prisoners, as well as potentially having implications for the wellbeing of staff and distribution of resources (Smith, 2016). However, I also recognised that there was a deeper systemic issue at play here, one that again highlighted the demand already placed on staff in

their current role and whether they felt supported and had space for additional tasks in their current workload. During the period of data collection there were a number of changes to the workforce, including increased reliance on temporary agency staff, unfamiliar with local practices. This clearly had a negative impact on the initial phase of recruitment. Overall, the research team were fortunate to have the assistance of the Assistant Psychologist at the prison, who provided an essential liaison role with the research site. This was invaluable in allowing necessary recruitment and administrative processes to take place.

Practical issues: access

As expected, a number of practical issues also occurred during the research (e.g. gaining access to, and engaging participants). Frequent, unscheduled lock-downs, delayed roll counts, movements across the prison site, other competing demands, transfers, double booked visits/appointment and inadequate room space all contributed to a need for the research team to be highly flexible. There were occasions where a day scheduled for data collection, resulted in only one person being able to participate. From the perspective of the researcher, a common aim of research is executing as much control as possible, and being able to set up the research process as per the intended design. In conducting research in a prison I found I could connect with part of the experience of being a prisoner, at times having little control of my schedule in the context of a changing environment.

It cannot be overlooked that this impacted negatively on those participating in the research. At times, prisoners joined with researchers in an unspoken frustration at the system, yet shared the goal to get the testing done, when these obstacles were

faced. It worked well to use a range of spaces, such as rooms in healthcare and legal visits, quiet rooms on the wings and in education and training facilities. Researcher flexibility became key and increased the efficiency of the data collection process. Flexibility on the part of prisoner was important too in achieving the goal, and this on several occasions meant arranging to meet at another time or date. Being responsive to any opportunities for testing was also a very useful approach, which again required flexibility and being able to loosen control on any planned itinerary for the day's data gathering.

Participant disclosure

In prison research there is the recognition of the limitations of self-reporting suicide and self-harm (e.g. Way, Kaufman, Knoll & Chlebowski, 2013), as is also relevant to all research in this area. There were difficulties in identifying participants who were reporting suicide ideation or presenting with suicidal or self-harm behaviours. This relates to the nature of trying to measure behaviours that have such low base rates, but as a research team, we expected there to be greater reports of suicide ideation and wondered how much this was affected by under-reporting. For example, another study with male prisoners found an average score on the Beck Scale for Suicide Ideation (BSSI; Beck, Kovacs & Weissman, 1979) of 6.38 in twenty-four participants with a history of suicide behaviour (Palmer & Connelly, 2005). Despite, around half of the sample in this study reporting a history of suicide or self-harm behaviour, very few scored on the BSSI. As discussed in other research in this area, there seems to be a greater confidence in reporting past ideation (Johnson et al., 2019; Safer, 1997). This may be why there were such low responses as this tool

measures very recent risk i.e. in the past week including the day of testing. For example, we had information that some participants had, in the last two weeks, reported to be experiencing suicide ideation. However, by the time of testing, many of these participants did not score on the BSSI, as they reported that these thoughts had not occurred in the immediate week prior, highlighting the fluctuating nature of suicide ideation.

Many participants also discussed wanting to avoid having an Assessment, Care in Custody and Teamwork plan (ACCT) opened, which is the current framework in prisons for the management of suicide and self-harm risk (Shaw & Humber, 2007). Participants discussed the regular checks at night time causing difficulties with cell mates and some also expressed a belief that the ACCT was a token process and that, in their experience, being on an ACCT had not lead to the support or changes they desired. This qualitative feedback from prisoners about the ACCT process was also found in other research (Howard & Pope, 2019; Pope, 2018). This may have been especially pertinent in testing participants whom had recently been taken off the support of an ACCT and did not wish it to be reopened.

To address this question, there was consideration of using a validation tool such as the Test of Memory Malingering (ToMM; Tombaugh, 1996). However, this was decided against, aiming to keep the administration of the questionnaire battery below one hour. Additionally, there was discussion as a research team about it feeling uncomfortable to predict there would be inaccuracy of reporting in this population. Administering the questionnaires on a 1:1 basis in a quiet room increased the validity of the responses through allowing participants to ask questions if they did

not understand and to provide reassurance for any concerns. The researcher was able to monitor low effort and double check for missed or inaccurate responses. The confidentiality of participants was protected through researchers clearly communicating the inclusion criteria as participants who are and who are *not* experiencing suicide or self-harm thoughts or feelings, or engaging in behaviours. This helped to avoid concerns about taking part in the study being indicative of being at risk.

Service user consultation (i.e. current prisoners in the role of health care representatives) was also used to gather feedback on the questionnaire *structure,* however, on reflection, it would have been useful to have specifically addressed at this stage what might help participants feel open to share current ideation, despite concerns associated with this. There has been some support for improving the quality of prison research through involving service users in prison suicide prevention research (Awenat et al., 2017; Taylor, Gill, Gibson, Byng & Quinn, 2018), which highlights themes around building a relationship with researchers, including being listened to and experiencing mutual respect, and a sense of there being change taking place, through being a part of change and changing other people's perceptions. There are clearly positive outcomes for prisoners taking part in research and as an improvement I think the healthcare representative's involvement with this research would be an ongoing process if similar research was repeated in the future.

The research field has provided evidence that the transfer period i.e. the first three months of being at a prison is a high-risk time for suicide and self-harm in prisoners (Daniel & Fleming, 2006). In this research study it was found that the majority of the prisoners on ACCTs and presenting with current risk had been at the prison

longer than this period (therefore not meeting inclusion criteria to participate). In light of this, the inclusion criteria for the study was amended via the ethics board. I also wonder if the reason behind this was the nature of the prison site, i.e. a resettlement prison that provided access to training, work and education. Future research could gather information about the level of prisoner involvement with these activities and how this relates to suicide and self-harm behaviours.

Quantitative vs. qualitative

There were many benefits to this study having a quantitative design as it meant a larger number of prisoners could participate, that hypothesis-led risk factors could be tested, and the research process standardised through use of a measures packet etc. However, during administration of the questionnaires, participants engaged in wider discussions with the researchers about risk and protective factors for suicide in prisoners, not necessarily recorded on quantitative measures. This highlights something that has potentially been lacking in the current research: a qualitative exploration into the views of prisoners on this topic, although there have been a few studies (e.g. Howard & Pope, 2019). This also reflected that this population do not often have access to someone who will listen one-on-one with them for up to one hour. This at times felt uncomfortable, as I tried to balance the aims as a researcher with recognising, from a clinical perspective, how important this space must have felt to some of the participants, and therefore it felt difficult to try to implement control and limitation over the information they gave to me. I found it was important to be very clear on the rationale of the study and their role as participants, but also to ensure to have some time available to those who wanted to share their wider views.

From a research perspective, it was also challenging to be presented with rich, valuable information but not having ethical approval in place, to appropriately gather it. Considerations were made to amend the ethics application at a later stage to include a qualitative aspect to the research, however this would have been considered a substantial amendment and had to return to panel, for which time did not permit.

Navigating the researcher role

There was also the process of establishing my role, as an external researcher, within the current prison staff team. Researching this topic meant that there were a number of follow-up tasks linked to my professional responsibilities as a clinical psychologist in training. Where concerns about risk to self were indicated, in-line with the confidentiality agreement, this was communicated to the mental health team to manage and, if required, an ACCT opened immediately. There was a small number of participants where this was relevant, as we found that many were already being monitored, or staff were already aware of risk levels. However, for those participants that did report suicide ideation, plans and/or intent, I felt that at times I was navigating the path between the researcher and clinician role. Part of me wanted to act on the information, when this was not part of my role as researcher. This was made more difficult by times when I identified that support for a participant was needed, but that perhaps the team was not able to offer this right away, due to waiting lists and higher priority cases. There was also a sense that, for some staff, they perhaps viewed the research as creating additional work for an already over-stretched team. For example, there were times when I was asked by prison staff to follow-up with participants about their risk and relay outcomes of team discussion,

assess risk further, which was not an identified part of my research role or appropriate given I was not a permanent member of staff. The need for clearly communicating limitations to my role, and enforcing the boundaries of this became important. Some of the staff members clearly struggled at times to understand the role we had in the prison and how to utilise the information we had obtained through the research questionnaires, and on reflection I think that this part of the process could have been explained more clearly and with perhaps regular, ongoing visits to team meetings being made. Utilising my research supervisor, who worked at the prison, was a very useful resource in managing these issues, and putting on my different 'hats' (e.g. researcher and clinician) became easier as the study progressed.

3.4 Current context: ACCT

The ACCT framework was developed to facilitate a multi-disciplinary approach to the management of suicide in prisons (Ministry of Justice, 2011). Introduced in 2005, as part of the ACCT process, any prisoner identified as at-risk of suicide or self-harm must be supported under this framework. There are certain timeframes within which steps must be taken to work towards the overall aim of reducing risk. A 'Concern and Keep Safe' form can be opened by any member of staff to initiate the ACCT process. Within an hour an Immediate Action Plan (IAP) must be completed through staff meeting and talking with the prisoner, to ensure they are safe from immediate harm. The next contact must then happen within twenty-four hours of the Concern and Keep Safe form being completed, and the task of engaging the prisoner in interview must be undertaken by an ACCT trained member of staff and recorded in the ACCT plan. A multi-disciplinary review meeting must also take

place within this first twenty-four hour period. The frequency of monitoring i.e. support and observations, must be decided in the plan and a Caremap developed. The Caremap outlines how the various strategies aimed at reducing risk will be implemented, detailing time-bound actions (Pike & George, 2019). The ACCT is closed when the prisoner is no longer considered as at-risk, and a seven day post-closure period begins, where the ACCT can be reopened if needed, and its end is marked by a final interview.

The ACCT was developed in response to a need for a collaborative, shared approach to management of suicide and self-harm, that can be implemented nationwide. Historically, it has been an issue primarily dealt with by mental health staff (Daniel, 2007). Even in the relatively short period of time speaking with prisoners about their experiences of suicide and self-harm, I found this difficult at times, and it made me reflect on the impact it must have on prison staff; many who do not have any form of mental health awareness training who manage this on a daily basis. For example, there has been evidence for the negative impact of managing suicide and self-harm risk on the mental health of staff, such as post-traumatic stress disorder (PTSD; Wright, Borrill, Teers & Cassidy, 2006). The involvement of administrators, medical and mental health clinicians, and custodial staff is considered best practice by the World Health Organisation (WHO, 2018). Where there have not been successfully coordinated management approaches to self-harm, findings are that prison staff can feel poorly supported and equipped to manage suicide and self-harm, and this can lead to conflict between healthcare and custodial staff (Ramluggun, 2013). This is something I experienced during conducting this research, in that the mental health

team were expected to take on primary management of suicide and self-harm concerns. This expectation was highlighted further in the plan for managing participants we had risk concerns about (i.e. to take to the mental health team to discuss).

There has been evidence found to suggest that when there is a lack of a specific, unified intervention for suicide or self-harm in prisons, management of these behaviours can become subjective, vague and varied, as a cross-sectional study by Senior et al. (2007) found when investigating prisoner notes in local prisons. Research has shown that in 41% of suicides in prisons there was contact with the mental health team within the previous three days, indicating opportunity and access for management approaches (Way, Miraglia, Sawyer, Beer & Eddy, 2005). Further, studies where prisoners have reported that they would not seek help when experiencing suicide ideation identified the use of aversive prison procedures, such as segregation, for managing suicidal prisoners as a barrier (Skogstad, Deane & Spicer, 2005). The main driver for the ACCT was a critical review of its predecessor, the F2052SH plan, and findings from a review that this approach did not lead to effective management plans, with 50% of actions from the care plan not assigned to an individual or department to act upon (Senior, Pratt & Shaw, 2002). A study by Daniel and Fleming (2007) provided an interesting view of the lack of monitoring of at-risk prisoners, with 77% of those that attempted suicide during their study period not being monitored, which highlights the need to be identifying these prisoners.

I found during this research that it was helpful to have the ACCT as a standardised approach to participants disclosing risk, and the involvement of other profes-

sionals improved my confidence to manage this. However, other aspects of my experiences involved observing the ACCT process to be limited in that it is often used as a reactive approach rather than preventative. Further, the ACCT relies on identification of an at-risk prisoner, and without a clear, observable behaviour, this process relies on self-report by the prisoner, limitations of which have been covered within this appraisal and the main body of this thesis. The process can also be limited by poor communication between professionals, and systemic failures to adhere to policies and procedures, which can result in individuals identified as at-risk not being effectively communicated to other parts of the system, leaving them at risk (Koslow, Ruiz & Nemeroff, 2014).

The general opinion of ACCT from the research participants was overall negative. Qualitative studies into this area have found that some prisoners can find ACCT to be a blanket approach lacking individualisation, and can be perceived as superficial and process driven (Howard & Pope, 2019). This was similar to qualitative reports from some participants in this empirical study, which have been discussed above. ACCT was developed as a partnership between the prison service and the Department of Health and following reviews of F2052SH mentioned above, through the Safer Custody Programme Care of At-Risk Prisoners project (Ministry of Justice, 2005). ACCT is informed by a combination of existing good practice, learning from previous suicide and self-harm incidents, and results from piloting across five sites. It is not clear how prisoner feedback was involved in the development of the ACCT, although there have been qualitative studies undertaken as part of reviews of this process. These studies have found evidence of prisoners

pointing to peer support and meaningful activities in the management of suicide and self-harm risk (Howard & Pope, 2019; Independent Advisory Panel, IAP, 2017).

Some researchers suggest that non-psychological approaches do not address risk factors identified in literature, such as problems with problem solving, history of trauma, coping etc. (Daniel, 2007). They have argued for the need to develop individual formulation with suicidal prisoners, and interventions that target the specific mechanisms that lead to suicidal behaviour (Pratt et al., 2015). The ACCT is a means of addressing the complex issue of suicide through the collaboration of a number of different methods, such as referring to the mental health team for therapy, or reviewing medication, or getting an individual more engaged with the peer support network, or chaplaincy visits i.e. the formulation achieved through appropriate use of the Caremap. However, in practice, it depends highly on which professionals are present for ACCT reviews and their knowledge of the individual and available psychological support. Further, as discussed in the literature review in part one of this thesis, there are currently no routinely available psychological interventions in prisons, including for suicide and self-harm, to support staff with their referral decisions.

How the current research findings relate to ACCT

The Caremap aspect of ACCT involves consideration of several areas with a prisoner (Figure 1, Ministry of Justice, MoJ, 2011). The ACCT must aim to consider these areas in addition to issues raised in the review assessment. Further areas referenced in the document include: relaxation classes, moving to another location, gym, change of labour, education/work classes, family contact, wing activities, counselling psychology referrals, social (chaplaincy, Samaritans, listeners), peer support,

and exploring how they interact with wing staff. How these areas link with the findings of the review and empirical study findings is discussed below.

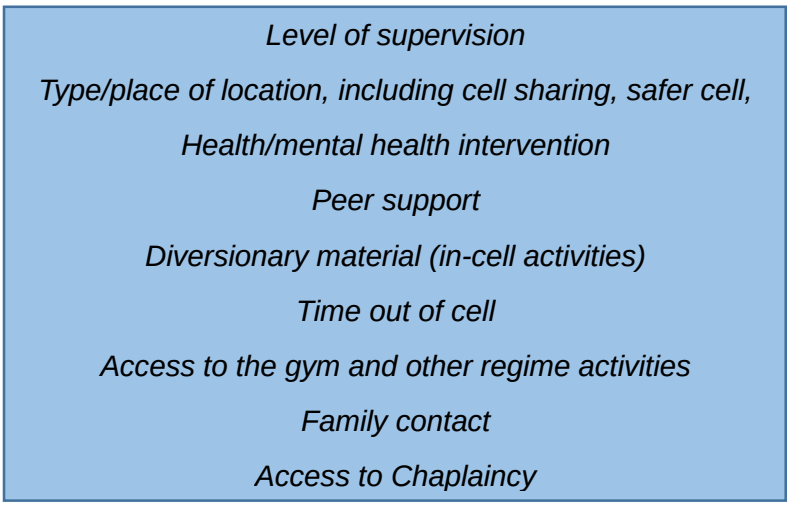


Figure 1: Areas considered in CAREMAP, taken from Prison Service Instruction (PSI) 64/2011 (MoJ, 2011)

The findings of this current study suggest that levels of entrapment and social support are important to consider in the management of suicide ideation in prisoners, as well as some preliminary findings about links between goal ambivalence and goal re-engagement.

Poor social support is well-established as a risk factor for suicide both in the general population and in prisoners (Rasmussen et al., 2010; Williams, 2001). Currently, the ACCT process includes a focus on increasing social support and so this is supported by the empirical study results. As part of ACCT plans, assessors are prompted to explore social support with at-risk prisoners and identify means of improving this, for example, by facilitating contact with chaplaincy, moving to a shared cell and facilitating contact with family (if supportive and protective). With consideration of the findings of this empirical study, this approach may help lower the likelihood of prisoners experiencing suicide ideation. Measures of social support have

been used in research with prisoners to explore help-seeking as part of a model of suicide behaviour (Slade, Edelmann, Worrall & Bray, 2014). Therefore, this suggests that as part of the ACCT review, as well as supporting prisoners to put social support in place, there should be discussion about how far the individual will *seek* support and encourage ideas for how they can do this.

Despite receiving a fair amount of research attention in the literature, largely with non-prison populations (with the exception of the current paper), entrapment is not directly included as part of the ACCT process. Although, there is reference to a prisoner experiencing the situation as causing unbearable pain as an indicator of high risk, which is in-line with how the IMV describes entrapment arising (O'Connor, 2011). Entrapment, however, is indirectly addressed through aspects of ACCT plans that encourage assessors to apply strategies of engaging with a regime and activities, and identifying things that the prisoner cares about, in order to reduce risk. This could lead to an individual feeling less trapped, and perceiving more means of escape from their current situation. In terms of internal entrapment specifically, these strategies can also increase opportunities for spending less time with difficult thoughts and emotions. From a review of the ACCT document, there is a large section that focuses on assessment of risk i.e. history, plans, intent, access to means, and reducing this, with less focus on wider conversations about how trapped a prisoner may feel and how many sources of achievement they have at present. As included in the discussion of this empirical paper, entrapment can present in many ways and so as ACCT has been critiqued as taking a "blanket" approach, the need for an individualised assessment of what aspects are contributing to perceptions of entrapment that will lead to a related intervention strategy, is implicated. For example, if a prisoner is

experiencing high levels of entrapment due to depression and bullying on the wing, then a referral to a wing-based job, or activities where the problematic others also attend, may not relieve this issue as intended.

The ACCT document also encourages assessors to check in about any potential relationship and practical problems outside the prison that may be impacting on an individual's risk, and lists some examples including isolation, bereavement and violence. Findings from the empirical study suggest that it may be useful to explore the specific impact that these events might have had on quality of social support and perceptions of entrapment, as this could be different from one individual to another.

Within the ACCT document, there is also inclusion of the importance of addressing low mood. As highlighted by this research study, and in other literature, depression is a risk factor for suicide (Beck, Steer, Beck & Newman, 1993). Encouraging prisoners to engage in activities and connect with things that they care about is in-line with psychological interventions to treating depression i.e. behavioural activation (Jacobson, Martell & Dimidjian, 2001). However, the empirical study also highlighted that perceived entrapment is an important factor over and above depression. The relationship between entrapment and other risk factors, such as hopelessness and depression, is still not fully understood, and future research into the extent that the two constructs are linked would be beneficial.

Within the assessment interview of the ACCT, an exploration of reasons for living and coping strategies is explored. As discussed in the literature review, measures of these constructs are used in the research literature as outcomes to meas-

ure changes in suicide and self-harm, and there is evidence for their links with increased risk. However, changes in these outcomes are not necessarily linked with changes in suicide and self-harm behaviours, and so combined exploration of this is also needed.

There are studies that have provided evidence that greater time spent out of their cells and engagement with meaningful, purposeful activity i.e. education, training, exercise and work, are both linked with a reduction in suicide behaviour and also identified by prisoners as ways of reducing risk (IAP, 2017; Leese, Thomas & Snow, 2006). This therefore offers support for strategies covered by the ACCT process. In relation to the findings of the empirical study, it could be hypothesised that such activities tap into how ambivalent someone feels about their goals. Even more clearly, this can support a prisoner to identify and engage with new goals i.e. goal re-engagement, which has been shown to link with suicide ideation when low levels exist. From reviewing the ACCT document, it seems that a crucial part of the ACCT process is that prisoners are encouraged to set a small number of realistic, achievable goals. As highlighted in the empirical study, further research into prisoner's relationship with their goals and suicide behaviour would prove useful to learn more about the specific mechanisms that can lower an individual's risk of suicide. The ACCT aims to be a shared process, in collaboration with the at-risk prisoner themselves, and done correctly this may help to improve goal-related factors such as ambivalence and engagement.

Overall, the empirical study findings offer support for current strategies of managing suicide risk in prisoners, however, a suggested improvement would be to

involve more direct exploration of how the problems causing distress impact on prisoner perceptions about feeling trapped in a situation, or by their own thoughts and feelings, and on the quality of their social support. This could involve exploration of how entrapment is manifesting for that individual i.e. being in custody itself, bullying, limited time out of their cell engaging in activities, or mental health problems. This appraisal has highlighted to me some clear concerns around how far the ACCT process can be facilitated in a prison where there is less focus on employment, training, and resettlement.

3.5 Conclusion

There are challenges to conducting research in prisons which have led to fewer studies using prisoners, however, research with prisoners and that which involves consultation with prisoners, is needed to improve the management of suicide and self-harm in prisons. Overall, working together with prison staff and prisoners themselves leads to better ability to conduct quality research. The ACCT process has clearly addressed some of the failings of previous approaches, and is in-line with some of the empirical evidence around managing risk in prisoners, including findings of this research study.

References

Awenat, Y. F., Moore, C., Gooding, P. A., Ulph, F., Mirza, A., & Pratt, D. (2017). Improving the quality of prison research: A qualitative study of ex-offender service user involvement in prison suicide prevention research. *Health Expectations*, 21, 100-109.

Beck, A. T., Kovacs, M., & Weissman, A. (1979). Assessment of suicidal intention: the Scale for Suicide Ideation. *Journal of Consulting and Clinical Psychology*, 47(2), 343.

Beck, A. T., Steer, R. A., Beck, J. S., & Newman, C. F. (1993). Hopelessness, depression, suicidal ideation, and clinical diagnosis of depression. *Suicide and Life-Threatening Behavior*, 23(2), 139-145.

Blades, C. A., Stritzke, W. G., Page, A. C., & Brown, J. D. (2018). The benefits and risks of asking research participants about suicide: A meta-analysis of the impact of exposure to suicide-related content. *Clinical psychology review*, 64, 1–12.

Daniel, A. E. (2007). Care of the mentally ill in prisons: Challenges and solutions. *Journal of the American Academy of Psychiatry and the Law*, 35, 406–410.

Daniel, A. E., & Fleming, J. (2005). Serious Suicide Attempts in a State Corrrectional System and Strategies to Prevent Suicide. *The Journal of Psychiatry & Law,* 33(2), 227-247.

Hornblum, A. M. (2013). *Acres of skin: Human experiments at Holmesburg prison.* Routledge.

Howard, F.F., & Pope, L. (2019). Learning to cope: an exploratory qualitative study of the experience of men who have desisted from self-harm in prison. *Ministry of Justice Analytical Series*. London: HMPPS.

Independent Advisory Panel on Deaths in Custody (2017). *Keeping safe - preventing suicide and self-harm in custody: prisoners' views*. London. Retrieved from: http://iapdeathsincustody.independent.gov.uk/wp-content/uploads/2017/12/Keeping-Safe-FINAL-Dec-2017.pdf

Jacobson, N. S., Martell, C. R., & Dimidjian, S. (2001). Behavioral activation treatment for depression: Returning to contextual roots. *Clinical Psychology: Science and Practice*, 8(3), 255-270.

Johnson, J. E., Stout, R. L., Miller, T. R., Zlotnick, C., Cerbo, L. A., Andrade, J. T., ... & Wiltsey-Stirman, S. (2019). Randomized cost-effectiveness trial of group interpersonal psychotherapy (IPT) for prisoners with major depression. *Journal of Consulting and Clinical Psychology*, Advance online publication, sent by first author.

Koslow, S. H., Ruiz, P., & Nemeroff, C. B. (Eds.). (2014). *A concise guide to understanding suicide: epidemiology, pathophysiology and prevention*. Cambridge University Press.

Leese, M., Thomas, S., & Snow, L. (2006). An ecological study of factors associated with rates of self-inflicted death in prisons in England and Wales. *International Journal of Law and Psychiatry*, 29(5), 355-360.

Ministry of Justice, National Offender Management Service. (2005). *Management of prisoners at risk of harm to self, to others and from others*. Safer Custody, PSI 18/2005. Retrieved from: https://www.justice.gov.uk/offenders/psis

Ministry of Justice, National Offender Management Service. (2011). *Management of prisoners at risk of harm to self, to others and from others*. Safer Custody, PSI 64/2011. Retrieved from: https://www.justice.gov.uk/offenders/psis/prison-service-instructions-2011

Moser, D. J., Arndt, S., Kanz, J. E., Benjamin, M. L., Bayless, J. D., Reese, R. L., ... & Flaum, M. A. (2004). Coercion and informed consent in research involving prisoners. *Comprehensive Psychiatry*, *45*(1), 1-9.

O'Connor, R. C. (2011). Towards an integrated motivational–volitional model of suicidal behaviour. In R. C. O'Connor, S. Platt & J. Gordon (Eds.), *International Handbook of Suicide Prevention: Research, Policy and Practice*. Chicester, UK: John Wiley.

Palmer, E. J., & Connelly, R. (2005). Depression, hopelessness and suicide ideation among vulnerable prisoners. *Criminal Behaviour and Mental Health*, 15(3), 164-170.

Pike, S. & George, R. (2019). The Assessment, Care in Custody and Teamwork (ACCT) process in prison: findings from qualitative research. *Ministry of Justice Analytical Series*, London: HMPPS

Pope, L. (2018). *Self-harm by adult men in prison: A rapid evidence assessment (REA).* London: HMPPS.

Pratt, D., Tarrier, N., Dunn, G., Awenat, Y., Shaw, J., Ulph, F., & Gooding, P. (2015). Cognitive–behavioural suicide prevention for male prisoners: a pilot randomized controlled trial. *Psychological Medicine*, 45(16), 3441-3451.

Ramluggun, P. (2013). A critical exploration of the management of self-harm in a male custodial setting: Qualitative findings of a comparative analysis of prison staff views on self-harm. *Journal of Forensic Nursing*, 9(1), 23-34.

Rasmussen, S. A., Fraser, L., Gotz, M., MacHale, S., Mackie, R., Masterton, G., ... & O'connor, R. C. (2010). Elaborating the cry of pain model of suicidality: testing a psychological model in a sample of first-time and repeat self-harm patients. *British Journal of Clinical Psychology*, 49(1), 15-30

Safer, D. J. (1997). Self-reported suicide attempts by adolescents. *Annals of Clinical Psychiatry*, 9(4), 263-269.

Senior, J., Hayes, A. J., Pratt, D., Thomas, S. D., Fahy, T., Leese, M., ... & Pearson, A. (2007). The identification and management of suicide risk in local prisons. *The Journal of Forensic Psychiatry & Psychology*, 18(3), 368-380.

Senior, J., Pratt, D., & Shaw, J. (2002). *An evaluation of the F2052SH system for the management of suicide and self-harm risk in five prisons*. Report to the safety custody group, HMPS.

Shaw, J., & Humber, N. (2007). Prison mental health services. *Psychiatry*, 6, 465–469.

Skogstad, P., Deane, F. P., & Spicer, J. (2005). Barriers to help-seeking among New Zealand prison inmates. *Journal of Offender Rehabilitation*, 42(2), 1-24.

Slade, K., Edelmann, R., Worrall, M., & Bray, D. (2014). Applying the Cry of Pain Model as a predictor of deliberate self-harm in an early-stage adult male prison population. *Legal and Criminological Psychology*, 19(1), 131-146.

Smith, H. (2016). Self-injurious behavior in prison: a case study. *International journal of offender therapy and comparative criminology*, 60(2), 228-243.

Taylor, C., Gill, L., Gibson, A., Byng, R., & Quinn, C. (2018). Engaging "seldom heard" groups in research and intervention development: offender mental health. *Health Expectations*, 21(6), 1104-1110.

Tombaugh, T. N. (1996). *Test of memory malingering: TOMM*. New York/Toronto: MHS.

Way, B. B., Kaufman, A. R., Knoll, J. L., & Chlebowski, S. M. (2013). Suicidal ideation among inmate-patients in state prison: Prevalence, reluctance to report, and treatment preferences. *Behavioral Sciences & the Law*, *31*(2), 230-238.

Way, B. B., Miraglia, R., Sawyer, D. A., Beer, R., & Eddy, J. (2005). Factors related to suicide in New York state prisons. *International Journal of Law and Psychiatry*, 28(3), 207-221.

World Health Organisation (2018). *National suicide prevention strategies.* Retrieved from: https://www.who.int/mental_health/suicide-prevention/national_strategies_2019/en/

Williams J.M.G., (2001). *The Cry of Pain*. London: Penguin.

Wright, L., Borrill, J., Teers, R., & Cassidy, T. (2006). The mental health consequences of dealing with self-inflicted death in custody. *Counselling Psychology Quarterly*, 19(2), 165-180.

Appendices

Appendix 1: Search terms

Population/Institution

1. offend*
2. penal
3. convic*
4. prison*
5. incarcerat*
6. correctional
7. inmate*
8. jail
9. prisoners/
10. incarceration/

11. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10

Suicide and DSH
12. deliberate self harm*
13. self harm*
14. self-harm*
15. self destructive behav*
16. self injur*
17. DSH
18. cutting
19. self mutilation
20. self-injurious behaviour/
21. self-destructive behaviour/
22. self-mutilation/
23. suicid*
24. parasuicid*
25. suicid* behav*
26. suicid* ideation
27. attempted suicid*
28. completed suicid*
29. suicide/
30. attempted suicide/
31. suicidal ideation/
32. 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26 or 27 or 28 or 29 or 30 or 31
33. 11 AND 32

Therapy/Intervention
34. intervention*
35. treatment*
36. psychological therapies
37. cognitive therapy
38. cognitive behaviour therapy
39. cognitive behavior therapy
40. CBT
41. behaviour therapy
42. behavior therapy
43. problem solving
44. group therap*
45. therap*
46. psychodynamic
47. dialectical behaviour therapy
48. dialectical behavior therapy
49. DBT
50. therapeutic communit*
51. treatment/
52. cognitive behavior therapy/

53. cognitive therapy/
54. intervention/
55. group intervention/
56. behavior therapy/
57. psychodynamic psychotherapy/
58. dialectical behavior therapy/
59. 34 or 35 or 36 or 37 or 38 or 39 or 40 or 41 or 42 or 43 or 44 or 45 or 46 or 47 or 48 or 49 or 50 or 51 or 52 or 53 or 54 or 55 or 56 or 57 or 58
60. 33 AND 59

Embase

Not available:
1. dialectical behavior therapy/
2. incarceration/
3. self destructive behaviour/
4. treatment/
5. intervention/
6. group intervention/

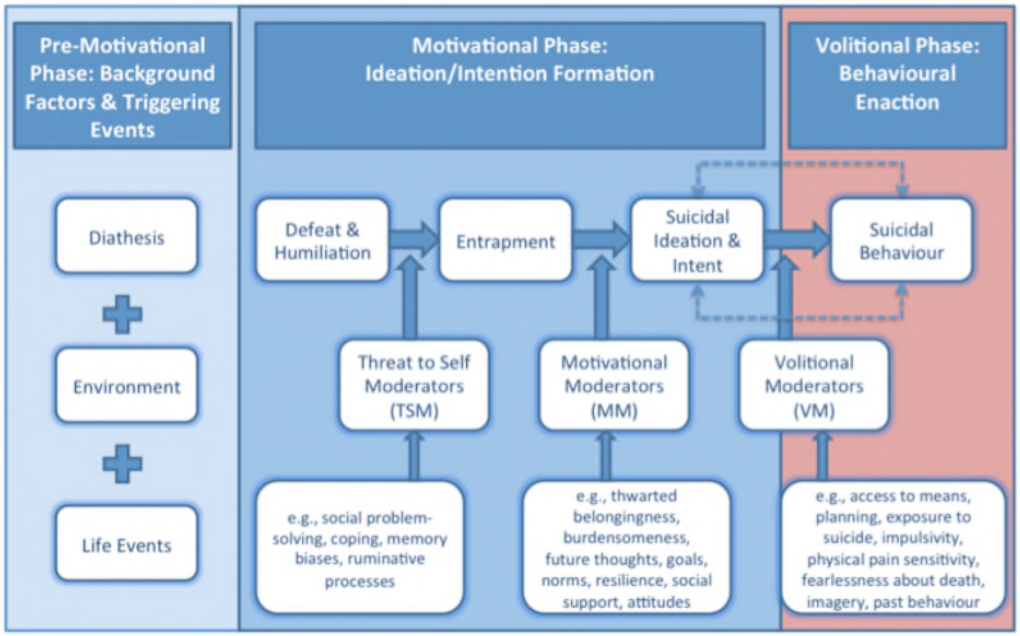
Added:
Offender/
Intervention study/

CINAHL Plus

Not available:
incarceration/
self destructive behaviour/
self mutilation/
treatment/
cognitive behaviour therapy/
group intervention/
dialectical behaviour therapy/

Added
correctional facilities/
injuries, self inflicted
intervention trials/

Appendix 2: Full Integrated Motivational Volitional Model (IMV; O'Connor, 2011)



http://www.suicideresearch.info/the-imv

Appendix 3: Script for Administration of measures packet

BEGINNING

- Introduction to researcher
- Ask prisoner if they have any questions about the PIS or any questions before we begin
  - Go over PIS with them again if needed
- "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? "

AFTER/DEBRIEF

- "Thank you for your time and for participating"
- "We recognise that the nature of some of the questions can be quite sensitive, and can sometimes bring difficult memories or feeling up for people – how are you feeling?"
- Make sure they are aware of options available for support i.e. Prison Listening Service, Samaritans, Mental Health team
- If responses have caused concern then share that will need to break confidentiality and discus with healthcare team in order to ensure that they are safe and receiving appropriate support
- What happens now? – Discuss plan to produce anonymised report and feed this back to NOMS and prison (governor and head of safer custody) for them to disseminate as appropriate
- If indicated they would like a copy of research then inform prisoner that a summary will be made available in office of each wing, and copy of report available to take out from prison library after July 2019
- Any questions?

Appendix 4: Ethical approval - NOMS

HM Prison & Probation Service

PSYCHOLOGY SERVICES
HM Prison & Probation Service

London HMPPS Psychology Services

Telephone: 0208 588 6210
Email elizabeth.b.hill@hmps.gsi.gov.uk

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 HMP Brixton. 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 HMP Brixton 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 HMP Brixton)

By email – no hard copy to follow

cc: HMPPS National Research Committee

Ethical approval - REC

Health Research Authority

East of England - Cambridge East Research Ethics Committee
The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

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:

Document	*Version*	*Date*
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 [HMP+Brixton+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

[redacted]

Dr Alan Lamont
Chair
E-mail: NRESCommittee.EastofEngland-CambridgeEast@nhs.net
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:

Name	*Profession*	*Present*
Dr Alan Calverd	Scientific Consultant	Yes
Dr Alan Lamont (Chair)	Retired Consultant Oncologist	Yes

Also in attendance:

Name	*Position (or reason for attending)*
Mr Adam Garretty	REC Assistant

Health Research Authority

East of England - Cambridge East Research Ethics Committee
The Old Chapel
Royal Standard Place
Nottingham
NG1 6FS

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

Approved documents
The documents reviewed and approved at the meeting were:

Document	*Version*	*Date*
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]

Dr Alan Lamont
Chair
E-mail: NRESCommittee.EastofEngland-CambridgeEast@nhs.net
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

NHS
Health Research Authority

East of England - Cambridge East Research Ethics Committee

Attendance at Sub-Committee of the REC meeting

Committee Members:

Name	*Profession*	*Present*
Dr Philip Bedford	Retired Study Responsible Scientist	Yes
Dr Alan Lamont (Chair)	Retired Consultant Oncologist	Yes

Also in attendance:

Name	*Position (or reason for attending)*
Mr Adam Garretty	REC Assistant

Appendix 5: Measures packet

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

5. **Do you have a physical disability?**

Yes	No	Please specify (optional)…

6. **Do you have a learning disability?**

Yes	No	Please specify (optional)…

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 HMP Brixton?
_____ days/weeks/months/years

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

People think and do many different things when they feel depressed. Please read each of the items below and indicate whether you almost never, sometimes, often, or almost always think or do each one <u>when you feel down, sad, or depressed</u>. Please indicate what you generally do, not what you think you should do.

	Almost Never (1)	Sometimes (2)	Often (3)	Almost Always (4)
Think "What am I doing to deserve this?"	1	2	3	4
Think "Why do I always react this way?"	1	2	3	4
Think about a recent situation, wishing it had gone better	1	2	3	4
Think "Why do I have problems other people don't have?"	1	2	3	4
Think "Why can't I handle things better?"	1	2	3	4

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

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

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

Copyrighted Beck's Suicide Ideation measure removed

Copyrighted Beck's Suicide Ideation measure removed

Copyrighted Beck's Suicide Ideation measure removed

Copyrighted Beck's Suicide Ideation measure removed

Below is a list of statements about your relationships with family and friends. Please indicate how much you agree or disagree with each statement as being true.

	Strongly Agree (1)	Agree (2)	Disagree (3)	Strongly Disagree (4)
My friends respect me	1	2	3	4
My family cares for me very much	1	2	3	4
I am not important to others	1	2	3	4
My family holds me in high esteem	1	2	3	4
I am well liked	1	2	3	4
I can rely on my friends	1	2	3	4
I am really admired by my family	1	2	3	4
I am respected by other people	1	2	3	4
I am loved dearly by my family	1	2	3	4
My friends don't care about my welfare	1	2	3	4
Members of my family rely on me	1	2	3	4
I am held in high esteem	1	2	3	4
I can't rely on my family for support	1	2	3	4
People admire me	1	2	3	4
I feel a strong bond with my friends	1	2	3	4
My friends look out for me	1	2	3	4
I feel valued by other people	1	2	3	4
My family really respects me	1	2	3	4
My friends and I are really important to each other	1	2	3	4
I feel like I belong	1	2	3	4
If I died tomorrow, very few people would miss me	1	2	3	4
I don't feel close to members of my family	1	2	3	4
My friends and I have done a lot for one another	1	2	3	4

For each of the following attitude statements indicate the extent to which you think it represents your own view of yourself. Read each item carefully and circle the number to the right of the statement that best describes the degree to which each statement is Like You. Use the scale below. Please do not leave out any item.

	Not at all like me	A little bit like me	Moderately like me	Quite a bit like me	Extremely like me
1. I am in a situation I feel trapped in	0	1	2	3	4
2. I have a strong desire to escape from things in my life	0	1	2	3	4
3. I am in a relationship I can't get out of	0	1	2	3	4
4. I often have the feeling that I would just like to run away	0	1	2	3	4
5. I feel powerless to change things	0	1	2	3	4
6. I feel trapped by my obligations	0	1	2	3	4
7. I can see no way out of my current situation	0	1	2	3	4
8. I would like to get away from other more powerful people in my life	0	1	2	3	4
9. I have a strong desire to get away and stay away from where I am now	0	1	2	3	4
10. I feel trapped by other people	0	1	2	3	4
11. I want to get away from myself	0	1	2	3	4
12. I feel powerless to change myself	0	1	2	3	4
13. I would like to escape from my thoughts and feelings	0	1	2	3	4
14. I feel trapped inside myself	0	1	2	3	4
15. I would like to get away from who I am and start again	0	1	2	3	4
16. I feel like I'm in a deep hole I can't get out of	0	1	2	3	4

During their lives people cannot always attain what they want and are sometimes forced to stop pursuing the goals they have set. We are interested in understanding <u>how you usually react when this happens to you</u>. Please indicate the extent to which you agree or disagree with each of the following statements, as it usually applies to you.

If I have to stop pursuing an important goal in my life...	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
1. It's easy for me to reduce my effort towards the goal					
2. I convince myself that I have other meaningful goals to pursue					
3. I stay committed to the goal for a long time; I can't let it go.					
4. I start working on other new goals					
5. I think about other new goals to pursue					
6. I find it difficult to stop trying to achieve the goal					
7. I seek other meaningful goals					
8. It's easy for me to stop thinking about the goal and let it go					
9. I tell myself that I have a number of other new goals to draw upon					
10. I put effort toward other meaningful goals					

Goal Listing Task

Below, we ask you to **please take a few minutes to write down as many important personal goals as you can think of.** Think of personal goals as the objectives that you are typically trying to achieve in your life.

These goals can be phrased positively (e.g., *Trying to stay in contact with my family)* or negatively (e.g., *Trying to avoid myself coming to any harm*) – the choice is up to you.

Try to make the goals a little more general like the examples given above and not too specific (e.g., I will go to the gym today). There is no right or wrong answer - just write down what feels true for you.

Please list your goals below. When thinking of your goals, try finishing the sentence "I typically try to…"	**Ranking**

Please use the other side if you need more space.

In the next few pages, we will ask you a variety of questions about some of your goals. To help you do this, we would like you to refer to this list as you answer the questions.

Goal Assessment Task

TASK ONE

Please choose your **three most important goals** from the list you have made and rank these goals on the previous page in order of importance. Write a number from **1 (most important) to 3 (least important)** next to the three goals in the 'Ranking' column.

Please make sure to rank your three most important goals before continuing.

TASK TWO

For this task we want to find out more about how you think and feel about your goals.

Below we will ask you a variety of questions about your goals. To help you do this, we would like you to refer to your three goals as you answer the questions.

Please answer the questions below about your goals, using the scales provided. You can indicate your answer by entering a number from the scale next to the goal.

Please read the questions and scales carefully.

I. How **important** is the goal to you in your life?

1 2 3 4 5 6 7

Not at all important Somewhat Extremely important

1. ____ Goal 1 **2**. ____ Goal 2 **3**. ____ Goal 3

II. How **difficult** do you expect your goals to be?

Think about the obstacles you will encounter, how much demand each project will place on you, your opportunity to succeed, etc.

1 2 3 4 5 6 7

Not at all difficult Somewhat Extremely difficult

1. ____ Goal 1 **2**. ____ Goal 2 **3**. ____ Goal 3

III. How satisfied are you with the amount of **progress** you have been making towards this goal?

1 2 3 4 5 6 7

Not at all satisfied Somewhat Extremely satisfied

1. ____ Goal 1 **2**. ____ Goal 2 **3**. ____ Goal 3

IV. In the future, how likely is it that you will be **successful** in the goal?

Scale ranges from 0, no chance of success, to 9, at least 90% chance of success

0% 10 20 30 40 50 60 70 80 90%

1. ____ Goal 1 **2**. ____ Goal 2 **3**. ____ Goal 3

V. Sometimes, even when we are successful in reaching a goal, we are unhappy. Even success sometimes has its cost. For example, if you are ‘‘Trying to become more intimate with someone,’’ and you succeed, you might also feel concern about being more tied down, having more responsibility, and being unable to date others, etc., despite also being pleased with the outcome.

How **ambivalent** or unhappy would you be about succeeding at the goal?

1 2 3 4 5 6 7

Not at all unhappy Somewhat Extremely unhappy

1. ____ Goal 1 **2**. ____ Goal 2 **3**. ____ Goal 3

END OF QUESTIONNAIRES

Appendix 6: Joint research statement

This research project was carried out as part of a joint project with another doctoral student, Ms Faith Schombs. Planning for, and carrying out, data collection was done jointly, which involved designing and putting together questionnaire packets, liaising with ethical boards and applying for ethical approval, and liaising with prison staff. Student researchers jointly carried out piloting of questionnaires. The questionnaires for the respective projects were researched and selected individually. In terms of data collection, both student researchers jointly and equally were involved in testing of subjects, with each student researcher testing one participant at a time. Recruitment, gathering consent for the study, and any follow up at the prison was done jointly. Once the final participant was tested, the scoring of questionnaire packets was shared out evenly between student researchers and the inputting of data by an undergraduate student was jointly overseen. Faith acted as second rater for the rating of level of abstraction of goals variable. Once all data was entered, data analysis and write up of the thesis was carried out individually.

Appendix 7: Regression output for step 2 when potential outlier and influential case removed, standardised residual Zscore >2 and Cook's Distance score >1

	Multivariate Step 2				
Factors	b	SE	OR	p	95% CI
Depression	-0.12	0.15	0.89	.40	0.67-1.18
Hopelessness	0.49	.230	1.64	.03	1.05-2.57
PSSB	0.40	0.21	1.49	.06	0.98-2.26
Mental health	1.29	0.93	3.65	.17	0.59-22.69
Rumination	-0.06	0.12	0.94	.61	0.74-1.19
Social support	0.09	0.04	1.09	.03	1.01-1.19
Internal entrapment	0.44	0.14	1.56	>0.01	1.19-2.04
External entrapment	-0.31	0.11	0.73	>0.01	0.60-0.90
Goal re-engagement	0.01	0.11	1.01	.92	0.81-1.26
Goal ambivalence	0.48	0.29	1.61	.10	0.92-2.83
Constant			-7.58		
Nagelkere R^2			0.69		
Step χ^2			21.28		
Model χ^2			67.80		

Note: PSSB = previous suicide and self-harm behaviour

Appendix 8: Interaction terms between entrapment and goal variables to explore moderation

Entrapment variable	Goal variable	B	SE	OR	P	95% CI
External entrapment	Re-engagement	-0.01	0.01	0.99	.40	0.97-1.01
	Dis-engagement	0.01	0.01	1.01	.55	0.98-1.03
	Importance	-0.06	0.07	0.94	.35	0.82-1.07
	Difficulty	-0.05	0.03	0.96	.11	0.90-1.01
	Progress	-0.02	0.03	0.99	.55	0.94-1.03
	Success	0.01	0.02	1.01	.72	0.97-1.04
	Ambivalence	0.01	0.02	1.01	.57	0.97-1.06
Internal entrapment	Re-engagement	0.00	0.02	1.00	.94	0.97-1.03
	Dis-engagement	0.01	0.02	1.01	.45	0.98-1.05
	Importance	-0.03	0.10	0.54	.59	0.06-5.22
	Difficulty	-0.07	0.04	0.94	.10	0.87-1.01
	Progress	-0.02	0.04	1.11	.52	0.91-1.05
	Success	-0.00	0.03	1.00	.91	0.93-1.06
	Ambivalence	0.01	0.04	1.01	.82	0.93-1.09
Total entrapment	Re-engagement	-0.00	0.01	1.00	.55	0.98-1.01
	Dis-engagement	0.01	0.01	1.01	.43	0.99-1.02
	Importance	-0.03	0.04	0.98	.55	0.90–1.06
	Difficulty	-0.03	0.02	0.97	.07	0.94-1.00
	Progress	-0.01	0.02	0.99	.56	0.96-1.02
	Success	0.00	0.01	1.00	.69	0.98-1.03
	Ambivalence	0.01	0.02	1.01	.71	0.98-1.04

Appendix 9: Participant Information Sheet

PARTICIPANT INFORMATION SHEET FOR BRIXTON 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 HMP Brixton 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!

Miss Yuen Shih

Student researcher

Trainee Clinical Psychologist

University College London

Miss Rachael Miller

Student researcher

Trainee Clinical Psychologist

University College London

Dr Vyv Huddy

Chief Investigator & Academic Supervisor

Lecturer in Clinical Psychology

University College London

Appendix 10: Participant Consent Form

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.	
14	I understand that the information I have submitted will be published in a report and I wish to receive a copy of it. Yes / No	
15	I agree that my anonymised research information may be used by others for future research. [No one will be able to identify you when this data is shared]	
16	I confirm that I understand the reasons I have been chosen for this study as detailed in the Information Sheet and explained to me by the researcher.	
17	I confirm that: (a) I understand the reasons I would not have been chosen for this study as detailed in the Information Sheet and explained to me by the researcher; and (b) I do not fall under these reasons.	
18	I am aware of who I should contact if I wish to make a complaint.	
19	I voluntarily agree to take part in the above study.	

Name of Participant	Date	Signature
Name of Researcher	Date	Signature

If you would like any further information, please contact the Healthcare Team who will be able to support you with this