1-1-1999

Affect intensity and affect regulation in prisoners with a history of self-harm

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AFFECT INTENSITY AND AFFECT REGULATION IN PRISONERS WITH A HISTORY OF SELF-HARM

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Submitted in Partial Fulfilment of the

requirements for the Award of

Master of Psychology (Forensic)

at the Faculty of Health and Human Services

Edith Cowan University

Declaration of Authorship

I, Christina Julie Kozar, declare that this research project comprises only my original work, expect where due acknowledgement has been made in the text to all other materials used.

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(Signature)

Date: 3/2/00

Acknowledgements

Thanks to all of my friends, family, and colleagues who assisted in the process of completing this research project. The assistance of the Ministry of Justice of Western Australia in especially acknowledged, with special thanks to the prison staff that facilitated the collection of data. Many thanks also to Adelle Hills for her helpful suggestions and comments.

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Abstract

Prisoners with a history of self-harm have reported experiencing more anger (e.g., Hilbrand, Krystal, Sharpe, & Foster, 1994), and despair (e.g., Shea, 1993), and less ability to cope (e.g., Shea, 1993; Liebling, 1992) than prisoners with no history of self-harm. This suggests that intense negative affective experiences and less control over these states might be pervasive characteristics in individuals vulnerable to self-harm. The present study tested the hypotheses that high affect intensity, the tendency to experience both positive and negative emotional states intensely (Larsen & Diener, 1987), and deficits in negative affect regulation would be associated with self-harm behaviour. Twenty prisoners with a history of self-harm and twenty control prisoners rated emotional responsiveness on a modified version of the Affect Intensity Measure (Larsen & Diener, 1987), and the utility of strategies to decrease intense negative affective states on an affect regulation strategies checklist (ARSC). Prisoners with a history of self-harm reported experiencing significantly more intense levels of negative affect and less experience of serene states than control prisoners. Positive affect intensity levels did not differ between groups. The self-harm group reported utilising a significantly more varied, but less efficient, repertoire of affect regulation strategies. They also rated cognitive strategies significantly lower and aggressive strategies significantly higher. Results suggest that screening prisoners for intense negative emotional responsiveness and dysfunctional affect regulation may facilitate the identification and management of prisoners vulnerable to self-harm. Further research is required to validate the dimensions of the AIM(M) and the ARSC, and explore the mechanisms of intense negative affective experiences and self-harm behaviour.

CHAPTER ONE – SELF-HARM, AFFECT INTENSITY, AND AFFECT REGULATION

The prevention of self-destructive acts is of particular concern to correctional providers who are legally responsible for prisoners' well-being. Moreover, suicide in prisons has become a source of public concern, particularly since the Royal Commission into Deaths in Custody in Australia that identified the need for strategies to reduce suicides in custodial settings (Biles & McDonald, 1992). Other self-destructive acts that occur in prison environments, such as attempted suicide and other forms of self-harm, equally warrant investigation so that strategies can be employed to reduce their prevalence. However, this task is particularly difficult because many stressors are commonly experienced in prison that could motivate a self-destructive act such as separation from family, criminal justice procedures (e.g., court appearances, sentencing, Parole-Board hearings), and dangers inherent in prison environments (e.g., personal threats, violence) (Toch,1992). It may well be important, therefore, to identify characteristic styles of responding to situational stressors that increase the likelihood of self-destructive behaviour.

There has not been a great deal of research investigating individual difference characteristics discriminating prisoners vulnerable to suicide and self-harm. Studies that have examined records of prisoners who have committed suicide (e.g., Topp, 1979; Dooley, 1990; Backett, 1987) have been limited to demographic, health, and criminological factors. These studies have not identified powerful predictive characteristics. Factors associated with suicide, such as a history of substance use, psychiatric disorder, and first time imprisoned, are also prevalent in the general prison population and are therefore limited in their utlity to identify those vulnerable to future suicidal behaviour.

Research focussing on individuals who self-harm provides more scope for examining a broader range of variables such as characteristic affective experiences, cognitive processes and

behaviour. These factors can be examined when prisoners are received and provide insight into appropriate types of interventions and management styles for staff. Prisoners with a history of self-harm are also vulnerable to committing further acts of self-harm (e.g., Hillbrand, Krystal, Sharpe, & Foster, 1994; Morgan, Barton, Pottle, Pocock & Burns-Cox, 1976, Wanstall & Oei, 1989) and suicide (e.g., Topp, 1979; Dooley, 1990; Backett, 1987), so strategies that assist prisoners vulnerable to self-harm will also assist in preventing suicides in prisons.

In the present context, self-harm is defined as an act of self-inflicted and deliberate harm, regardless of whether death was the intended outcome. This definition therefore encompasses attempted suicide. Self-harm and attempted suicide are sometimes differentiated on the basis of intent to die (e.g., Van Egmond & Diekstra,1989), but this categorisation is not employed here as the purpose of this study is to examine pervasive factors that distinguish prisoners vulnerable to self-inflicted destructive behaviour, regardless of intended outcome. Previous research has also infrequently provided adequate definitions of self-harm behaviour. Where definitions have been given, they are indicated in the review below.

A Behavioural Basis for Incidents of Self-harm

Insight into the experiences associated with self-harm provides both an explanation for its incidence and a means of initial exploration of individual difference characteristics that may differentiate prisoners vulnerable to acts of self-harm. Studies such as those by Bach-y-rita (1974), Wanstall and Oei, (1989), and Pattison and Kahan (1993) have identified common patterns of self-reported negative affect prior to committing an act of self harm. Furthermore, this emotional experience is combined with negative cognition such as an inability to divert attention from negative situations. These studies have also suggested that there are some

immediate positive consequences of self-harm behaviour, such as emotional relief, thereby reinforcing these acts and providing a behavioural basis for their incidence.

Factors that maintain self-harm behaviour have been described by Bach-y-Rita (1974) who assessed eight men who had committed multiple acts of self-harm in a special prison unit for violent offenders. The men sometimes reported that they attempted to manipulate their circumstances by committing acts of self-harm, although each of them reported feeling depressed prior to these acts and relief afterwards. Self-harm occurred more while in isolation, when external controls (presumably constraints imposed by their situation in prison) evoked frustration, and when the men could not act on their feelings. Self-harm, therefore, provided resolution to negative emotional states and situations, but was enacted when limitations restricted the means available for responding to these situational stressors.

A more comprehensive examination of factors associated with self-harm was conducted by Wanstall and Oei (1989) who reviewed literature examining the psychological aspects of 'delicate wrist-cutting behaviour' in adult psychiatric patients. This is the most common form of self-harm and refers to the act of deliberately inflicting superficial delicate incisions, generally on the wrist. Their review also suggested that learning theory explains the incidence of delicate wrist-cutting as common patterns of antecedents and consequences were associated with the acts. Antecedents to self-harm included patients becoming increasingly tense and anxious, and then gradually isolating themselves and becoming self-absorbed. Consequences of self-harm included relief of tension, feelings of relaxation, pleasure in seeing blood, and attention from staff. These consequences would appear to, at least in some cases, reduce the intense negative affect, modify cognition, and change negative aspects of their situation preceding self-harm, thus reinforcing subsequent acts.

Similar factors were recognised by Pattison and Kahan (1993), who examined fifty-six published cases of low lethality self-harm. They identified four predominant psychological factors experienced prior to an act of self-harm; namely despair (defined as an intolerable emotion), anxiety, anger, and cognitive constriction. Although they did not specify how these experiences were assessed, their review suggested that prior to an act of self-harm individuals experience negative affective states and an inability to divert or modify cognition from the negative aspects of their situation and motivation to self-harm. Seventy percent of the case studies demonstrated despair prior to an act of self-harm suggesting that, consistent with experiences common to individuals who commit suicide (Shneidman, 1989), intense psychological pain is generally experienced prior to an act of self-harm. Pattison and Kahan stated that these psychological factors were relatively consistent amongst those who committed single and multiple acts of self-harm, suggesting that intense negative affect and cognitive constriction are factors which are important in the incidence of self-harm, regardless of the history of the behaviour.

The above studies suggest that negative affective experiences may play an important role in precipitating acts of self-harm. Dysfunctional cognitive processes, such as focussing on negative situations, and certain behaviours, such as social isolation, may also be pivotal. Behaviour theory offers a frame-work to explain how various factors reinforce the incidence of self-harm as a response to stressors that elicit negative affect and negative cognition. The importance of reinforcing factors is exemplified in therapy styles which emphasise identifying antecedent and consequent conditions to self-harm incidents, and developing alternative behaviours to replace self-harm when antecedent factors occur. Shearin and Linehan (1994), for example, found that self-harm incidents were reduced in clients with borderline personality disorder undertaking this type of therapy compared to clients receiving other types of therapy.

Psychological Processes and Self-harm

Consistent with the notion that self-harm occurs as a maladaptive response to stressors, Liebling (1992) has suggested that prisoners who self-harm can be differentiated from other prisoners on the basis of coping skills. She compared fifty juvenile prisoners who required hospital treatment due to acts of self-harm with a random sample of fifty juvenile prisoners with no record of self-harm on a range of criminological and demographic variables. The groups did not differ in age, ethnicity, and offences, but those who had engaged in self-harm also received more psychiatric treatment, had greater drinking problems, and fewer friends. Semi-structured interviews suggested that juveniles with a history of self-harm could be differentiated from the control group by the extent of background deprivation reported, and an inability to cope with the prison environment because of conflict with inmates and less contact with families in the prison setting. She proposed that stressful situations, such as receiving an unexpectedly long sentence or separating from a partner, combined with an inability to problem-solve, propelled inmates toward suicidal behaviour. However, problem solving ability or other skills to manage stressors, were not compared between groups using standardised measures.

Toch (1992) reported extensively on the types of strategies that prisoners use to cope with imprisonment. He interviewed over three-hundred prisoners in New York correctional facilities who were known to have committed acts of self-harm or attempted suicide, and compared this group with a smaller control group matched for age and ethnicity. Prisoners were interviewed regarding their responses to crises experienced within prison. Three types of personal break-downs, resulting in incidents of self-harm, were identified, namely, problems with the prison environment (e.g., an inability to tolerate specific placements, such as solitary confinement), perceived personal inadequacies (e.g., feelings of worthlessness associated with criminal

careers), and a lack of impulse control (e.g., rage). Toch proposed that control prisoners had survived stress by 'harnessing' rather than being controlled by it. They achieved this by employing supports (e.g., confiding in trusted friends), suppressing involvement with the outside, taking a detached stance, using distraction, or shutting off negative affect when crises arose. However Toch, like Liebling (1992), employed semi-structured interviews and did not assess whether prisoners with a history of self-harm could be differentiated from other prisoners on the basis of deficits in utilising these strategies.

The mechanisms of suicidal behaviour, including self-harm, were more specifically explored by Ivanoff and Jang (1991) who used a number of standardised measures. They examined the relationship between hopelessness, social desirability, and a range of criminological factors in a sample of 130 prisoners. Four groups of prisoners participated: prisoners who had inflicted self-harm within the past year, prisoners who had inflicted self-harm at some time but not in the previous year, prisoners with a history of a psychiatric disorder, and a control group of prisoners that had no history of suicidal behaviour or contact with prison mental health services. These groups were administered the Scale for Suicidal Ideation (SSI) (Beck, Kovacs, & Weissman, 1979) that comprises subscales of suicidal desire (the degree, frequency, and duration of suicidal thoughts), and suicidal preparation (suicidal preoccupations such as methods of self-harm and factors that provoke or deter self-harm incidents); the Beck Hopelessness Scale (BHS) (Beck, Weissman, Lester, & Trexler, 1974) (that measures cognition associated with pessimism); the Beck Depression Inventory (BDI) (Beck, Ward, Mendleson, Mock & Erbaugh, 1961); the Edwards Social Desirability Scale (Edwards, 1970); the Suicidal Behaviours Interview adapted from the Suicidal Behaviors Questionnaire (Linehan & Nielson, 1981); and the Life Experiences Survey (Sarason, Johnson, & Siegel, 1978). A multivariate

causal model was devised using the ordinary least squares regression method. Various factors, such as length of sentence and number of negative life events, indirectly affected suicidal factors (previous suicidal behaviour, current suicidal ideation and anticipated suicidal behaviour) by increasing levels of depression or hopelessness. For example, inmates with a history of juvenile delinquency and violent crimes had elevated levels of depression and showed more current suicidal ideation. Social desirability had no direct effect on suicidal factors or on hopelessness, but higher levels of social desirability were associated with low levels of depression. Hopelessness and social desirability interacted in that the ability of hopelessness to predict suicidal behaviour decreased as levels of social desirability increased. The relationship between individuals' tendency to act in a socially desirable manner and self-harm, therefore, seems to be consolidated by pessimism and concomitant feelings of hopelessness in response to negative life events, although the dimensions of social desirability in this study were not clearly defined. Results suggest, however, that there may be utility in identifying various dysfunctional cognitive styles that occur when negative affective states are elevated to predict suicidal behaviour,

To test the transactional theory that suicidal behaviour is associated with a predisposition to dysfunctional cognitive processing, Schmidtke and Schaller (1992) administered various measures to assess whether individuals with a history of attempted suicide perceived their environment as undifferentiated, inarticulated and global. This theory suggests that individuals are prone to commit suicide when a rigid and indiscriminate cognitive style is coupled with negative situational factors that result in the individual believing their situation is unchangeable and ill fated. Patients admitted to a psychiatric ward after a suicide attempt and groups of

psychiatric and normal controls were assessed at three times. The suicide group was tested within a week of the attempted suicide, approximately twenty days later, and on discharge. Three cognitive styles were investigated, namely, cognitive rigidity, dichotomous thinking, and field dependence (although no details of these terms were provided). A German version of the Stroop test was used to assess cognitive rigidity, a semantic differential task (Neuringer, 1961) was used to assess dichotomous thinking, and field dependence was assessed in a group embedded figures task (Witkin, Oltman, Raskin & Karp, 1971). The Stait-Trait Anxiety Inventory (Spielberger, Gorsuch, & Lushene, 1970), the Eysenk Personality Inventory (Eysenk & Eysenk, 1964), and the Beck Depression Inventory were also administered. Results indicated that both clinical groups were more rigid thinkers and had greater field dependence than the normal controls at initial testing but not at subsequent testing. Measures of dichotomous thinking did not differ between the groups. Depressive symptoms, emotional lability, state anxiety and trait anxiety did not differ between the clinical groups, but were significantly higher than normal controls at initial testing. These affective states, including trait anxiety, decreased significantly for both clinical groups over the measurement period to the same level as controls. Schmidtke and Schaller concluded that their results did not support the transactional theory that suicidal individuals are generally predisposed to global or rigid thinking, as significant improvements in rigid thinking and field dependence were demonstrated when emotional states returned to normal levels. However, this does not preclude the possibility that individuals who self-harm have a propensity towards experiencing intense depression and anxiety, which then affects cognitive processes, when situational stressors occur.

The association between suicidal behaviour and poor interpersonal problem-solving was examined by Schotte, Cools and Payvar (1990) in 36 consecutive inpatients to a psychiatric ward who reported suicidal ideation. Thirty-nine percent had made an attempt prior to admission and

almost a fifth had a history of previous attempts. Participants were tested either on admission and a week later, or only a week later, to assess possible practice effects. The Beck Depression Inventory, the State-Trait Anxiety Inventory, the Beck Hopelessness Scale, the Scale for Suicidal Ideation, and the Means-Ends Problem-Solving Procedure (MEPS) (Platt, Spivack, & Bloom, 1975), that presents stories that require participants to specify means of interpersonal problem-solving, were administered. Participants tested both times showed significant improvement on each of the measures, including interpersonal problem-solving ability, over time. The group tested twice and the group tested only a week later performed equally well a week after admission, suggesting that improvements were not accounted for by practice effects. Consistent with Schmidtke and Schaller (1992), these results also suggested that deficits in cognitive processing were not traits associated with individuals vulnerable to suicidal behaviour, although high states of negative affect were associated with deficits in cognition. Schotte et al. suggested, therefore, that a state vulnerability model, as opposed to a trait vulnerability model, better explained the results of their study. This assertion, however, ignores the possibility that suicidal behaviour might instead be associated with a predisposition to emotional dysregulation, that affects cognitive processing when negative affective states are high.

Ivanoff, Smyth, Grochowski, Jang and Klein (1992) also investigated interpersonal problem-solving skills and self-harm in ninety-three prisoners with and without a history of self-harm. Prisoners with a history of self-harm were further divided into those with and without current suicidal ideation. Ivanoff et al. administered the MEPS, the BDI, the BHS and the Prison Suicidal Behaviours Interview. Currently suicidal individuals with a history of self-harm differed significantly from comparison groups on measures of hopelessness and depression, however, there was no difference between any of the groups in their problem-solving ability. Unlike Schotte et al.'s (1990) results, MEPS scores did not vary according to levels of hopelessness and

depression although participants in the Schotte, et al. study demonstrated higher levels of negative affective states. Ivanoff et al. suggested that problem-solving ability does not seem to predispose individuals to suicidal ideation although immediately prior to an act of self-harm, distress may reach a level that affects problem-solving ability. Alternatively, the MEPS may not have been sensitive in discriminating interpersonal problem-solving skills in their sample given. A prison sample might not have easily identified with the problems presented in the MEPS.

Although deficits in interpersonal problem-solving ability might not be a pervasive factor discriminating prisoners vulnerable to self-harm, Hillbrand et al. (1994) found that self-harm was associated with aggression. Fifty male forensic inpatients who had engaged in at least one self-harm incident scored significantly higher on outward directed aggression compared to fifty comparison forensic patients, as assessed by the Overt Aggression Scale (Yudofsky, Silver, Jackson, Endicott, & Williams, 1986). More verbal aggression and physical aggression against objects and people were reported in the self-harm group, suggesting that demonstration of these behaviours may indicate vulnerablity to self-harm. This finding is also consistent with conceptualising self-harm as indicative of a pervasive means of responding dysfunctionally to stressors.

A broader examination of personality factors related to self-harm was undertaken by Shea (1993) who explored the association between self-harm and scores on sub-scales of the Minnesota Multiphasic Personality Inventory (MMPI). The MMPI was administered to thirty prisoners with a history of self-harm and thirty control prisoners who were matched for age, race and IQ. The self-harm group comprised individuals who had experienced at least two self-harm incidents that were assessed as low lethality, required medical attention, and were documented by prison officials. The control group was selected from referrals for psychological evaluations for reasons other than self-harm. Focussing on clinical scales which were significantly different at

the .001 level, as thirteen scales were compared using t-tests, the self-harm group were significantly higher on three scales. These scales were depression, psychasthenia (anxiety and obsessive thinking), and social introversion. The self-harm group's scores, therefore, reflected a greater experience of distress, manifested by feelings of anxiety, depression and persecution; and a perception that they had fewer resources to deal with their problems. Responses also suggested that they experienced significantly more self and other alienation and feelings of isolation and withdrawal. Impulsive behaviour was also reported more by the self-harm group compared to control group prisoners. Prisoners with a history of self-harm, therefore, may be differentiated from other prisoners on their more frequent experience of extreme negative affect, a tendency to perceive themselves as less able to deal with stressors, and more impulsive and socially withdrawn behaviour. These results provide some detail as to the profile of prisoners vulnerable to self-harm on the basis of a standardised measure, although discriminating characteristics, such as alienation and poor resourcefulness, are complex factors. The aspects of these characteristics that would indicate vulnerability to self-harm require exploration. Identifying the specific factors would circumvent the laborious task of administering the MMPI to identify prisoners at risk of self-harm. In addition, although Shea's research suggests that problems in emotional and social functioning may be paramount in discriminating risk, classification analyses were not conducted on the data suggesting that validation of these results is required.

Intense and frequent negative affective states, primarily depression, hopelessness, anxiety, and anger, are invariably associated with self-harm. These experiences are commonly reported by individuals prior to acts of self-harm (e.g., Pattison & Kahan, 1993) and are generally significantly higher as assessed by standardised measures (e.g., Shea, 1993) in self-harm or other suicidal behaviour groups compared to control groups. Poor problem-solving (Schotte et al.., 1990) and other cognitive deficits (e.g., Schmidtke & Schaller, 1992) have also been

demonstrated following acts of self-harm. However, these cognitive functions have improved significantly when negative affective states have decreased, or are not evident if affective states are not sufficiently intense (Ivanoff et al., 1992). Aggressive (Hillbrand et al., 1994) and impulsive (Shea, 1993) behaviour have also been self-reported as significantly more common in individuals with a history of self-harm suggesting this group engages in more pervasive dysfunctional behaviour, in addition to self-harm. Although Liebling (1992) and Toch (1992) have suggested that poor coping differentiates self-harm groups from control groups, these conclusions have not been made on the basis of standardised measures and hence require systematic examination to ascertain discriminating factors. Shea (1993) and Ivanoff and Jang (1991) have taken measures of self-harm groups' perception of coping resources and social desirability, respectively, although again the dimensions comprising these factors have not been adequately articulated to identify an individual difference characteristic that provides utility for devising specific assessment and intervention strategies.

Although intense negative affective states are not consistently present in those who attempt suicide (e.g. Schmidtke & Shaller, 1992; Schotte et al., 1990), they might nonetheless be experienced more frequently and be associated with a pattern of dysfunctional responding, increasing vulnerability to future acts. Characteristic experiences of intense negative affect and a lack of effective strategies to reduce these aversive states might therefore discriminate prisoners vulnerable to self-harm. An individual difference factor that might be important in this respect is affect intensity.

Affect Intensity

Affect intensity describes the typical level of intensity experienced by individuals in emotional situations and hence is a pervasive characteristic that might serve as a useful factor to

identify prisoners vulnerable to self-harm behaviour. Larsen and Diener (1987) have proposed that some individuals typically experience both positive and negative emotions intensely (ie., have high affect intensity), while others experience more subdued emotional responsiveness (ie., have low affect intensity).

Larsen and Diener (1987) suggested that affect intensity functions as a means of regulating arousal and that differences exist in the methods by which individuals regulate arousal depending on predispositions to under-arousal and over-arousal. They review research suggesting that those who experience high affect intensity are under-aroused at baseline levels, so increases in emotional responsiveness enable optimal levels of arousal to be achieved. The opposite is true for individuals who experience low affect intensity as increases in emotional responsiveness are not required to increase arousal, due to over-arousal at baseline levels.

The affect intensity construct was developed by assessing the intensity of positive and negative emotional responses using affect adjective check-lists daily over a period of weeks. Larsen and Diener (1987) reported that across four different studies of daily mood, a correlation of between .70 and .77 was found between positive and negative emotions. Thus they proposed that affect intensity is a uni-dimensional construct. To circumvent the laborious task of calculating daily mood over a long period of time, Larsen and Diener (1987) devised an affect intensity measure, the AIM.

The AIM is a 40-item questionnaire that assesses an individual's typical intensity of emotional responsiveness. Items refer to specific subjective experiences of positive affect, such as 'When I accomplish something difficult I feel delighted or elated', and negative affect, such as 'Sad movies deeply touch me'. Several items assess high levels of arousal, such as 'My heart races at the anticipation of some exciting event', and several reversed items assess low levels of arousal, such as 'When I'm happy it's a feeling of being untroubled and content rather than being

zestful and aroused'. Participants are required to indicate on a six-point Likert-type scale how frequently these experiences have occurred for them, from Never to Always. AIM scores are then calculated by obtaining the mean value of the forty items. Global measures are proposed as an index of the level of affect intensity for both positive and negative affective experiences.

In reviewing research pertaining to the reliability of the AIM, Larsen and Diener (1987) reported that test/retest reliability varied from approximately .80 over one to three months, to .75 for a two-year period. The AIM, therefore, seems to be reliable in that its assessment of an individual's affect intensity level is consistent over time. Such temporal reliability is consistent with the notion that affect intensity is a stable temperament characteristic.

AIM scores correlate with individuals' emotional responsiveness to daily events providing support for the validity of the AIM as a measure of typical experience of emotional intensity. Larsen, Diener and Emmons (1986) conducted a study in which 176 undergraduates completed the AIM and rated a 30-item Event Reaction Questionnaire, that described positive and negative daily events previously identified by college students. Participants were asked to rate their emotional reaction to each event using a ten-point scale that went from extreme positive emotions (e.g., euphoria) to extreme negative emotions (e.g., despair). Analysis of Variance (ANOVA) comparing the highest and lowest quartile of AIM scoring participants demonstrated that high AIM scorers reported both good and bad events as eliciting significantly more intense emotional responsiveness than low AIM scorers, and there was no interaction. These results support the validity of the AIM as a measure of the typical intensity of affective experiences to emotional situations.

Larsen et al. (1986) administered three additional measures in this study to examine the relationship between affect intensity and arousability, sensation-seeking, and emotional reactivity. These were the Stimulus Screening Scale (Mehrabian, 1979), that measured the

ability to screen irrelevant sensory stimuli and hence assessed susceptibility to arousal, the Sensation Seeking Scale (Zuckerman, 1979), that measured the tendency to seek out situations that provide high levels of stimulation, and the Reactivity sub-scale of the Mood Survey (Underwood & Froming, 1980) that measured mood variability. AIM scores correlated with measures of arousability (r = .32) and emotional reactivity (r = .25) suggesting that participants with high affect intensity were more easily aroused and experienced more mood variability. AIM scores did not correlate with sensation seeking (r = -.001) suggesting that individuals' affect intensity was not associated with initiating behaviour for emotional stimulation. Affect intensity was therefore associated with frequency of emotional reactions and arousability, but is distinct from these because it describes characteristic intensity of responses rather than frequency of affective experiences.

Larsen, Diener and Cropanzano (1987) investigated cognitive processes associated with depression (Beck, 1976) and affect intensity. Three categories of cognition were assessed, namely, personalisation, or self-referential cognition; selective abstraction, in which cognition focuses on the emotion-provoking aspects of events; and overgeneralisation, in which a general state of affairs is construed from a single event. In their first study, 280 undergraduates completed the AIM and were exposed to a series of slides classified as negative, neutral and positive, although no manipulation check was conducted to assess the validity of these classifications. When viewing the slides, participants indicated their agreement with nine statements, three derived from each of the cognitive categories. Approximately half of the statements separated high and low quartile AIM scorers in a step-wise discriminant function analysis for positive (Wilk's Lambda = .84) and negative slides (Wilk's Lambda = .74). In both analyses, the high AIM scorers were more likely to think about how they felt (personalise), to focus on the best or worst part of the slide (selectively abstract), and to think about how good or

evil the world is (generalise) in response to the slides. These results suggest that there is an association between experiencing affect intensely and cogitating on the nature of events and/or self, in response to emotion provoking situations.

In their second study Larsen et al. (1987) administered the AIM to 109 undergraduate participants and asked them to write down any thoughts or other reactions experienced while viewing a sub-set of slides from the first study. Four raters then classified participants' responses into one of eight categories for comparison between high and low AIM groups. The three cognitive categories outlined above were subdivided into more specific categories. Personalisation comprised 'personalising' and 'empathic statements'; overgeneralisation comprised 'global statements' and 'fantasy elaboration'; and selective abstraction comprised 'focus on feelings' and 'emotional details', although on what basis these categories were determined was not clear. Two further categories, 'physical sensations' and 'emotional arousal', were also used as a manipulation check. T-tests confirmed that significantly more emotional responses to the positive and negative slides were elicited overall compared to the neutral slides. Response categories discriminated the highest 27 and the lowest 21 AIM scorers for positive (except for 'focus on feelings' and 'emotional details' categories) and negative (except for the 'emotional details' category) slides. High AIM scoring participants were more likely to experience personalisation and overgeneralisation but their experience of selective abstraction was similar to the low scoring AIM group. Some differences in cognition are therefore apparent between those who experience high and low affect intensity when they are exposed to positive and negative emotion eliciting stimuli. The consequences of these cognitive processes were not explored although, because the categories described processes experienced in depression, possible negative consequences might be prolonging intense negative experiences and an inability to enact other actitivities.

Affect intensity is thus proposed as a pervasive characteristic whereby individuals with high affect intensity tend to experience positive and negative emotions more intensely than those who are low on affect intensity (Larsen & Diener, 1987). The immediate consequences for individuals who experience high affect intensity include high levels of physiological arousal and strong subjective experiences of emotion when emotion-provoking stimuli are experienced. Characteristic intensity of affective experiences is also associated with the frequency of emotional reactions and arousability but is theoretically distinct from these (Larsen et al., 1986). Particular cognitive experiences, such as personalisation and overgeneralisation, have also been demonstrated in individuals high on affect intensity in response to emotional stimuli (Larsen, et al., 1987). Sensation-seeking behaviour is not associated with affect intensity (Larsen et al., 1986), and other behavioural responses associated with affect intensity have not been explored.

Larsen and Diener (1987), however, have also noted that an individual's subjective well-being is determined by the frequency of affective experiences in conjunction with the intensity with which they are experienced, or the ratio of positive to negative affect experienced over time. In this respect, individuals who encounter frequent negative events will experience varying subjective well-being depending on their level of affect intensity. Individuals in this position who are high in affect intensity will experience acute and agitated negative affect, distress, and depression whereas individuals who are low in affect intensity will experience milder but persistent unhappiness. Conversely, if relatively frequent positive affective experiences are encountered, subjective well-being for individuals who are high in affect intensity will incorporate feelings such as exuberance and joyfulness compared to those who are low in affect intensity, who will experience contentment and serenity.

Therefore, the nature and frequency of affective experiences determines an individual's overall well-being, and affect intensity mediates the character of those experiences. An

additional factor that impinges on well-being, however, concerns the nature of responses elicited to intense negative affect, and their consequences for reducing these states. The identification of functional responses to reduce aversive states has been explored in the area of coping. Although the vast literature on coping has not conclusively identified the dimensions involved in responding to negative situations (See Parker & Endler, 1992, for a review), it has provided some insight into strategies invoked to regulate negative affect and their consequences for subjective well being. This issue is particularly important in the context of investigating individual difference characteristics that might discriminate vulnerability to self-harm in that those who engage in self-harm might have a dysfunctional response style to negative affective states.

Coping and Affect Regulation

Coping refers to the various responses an individual employs to manage negative situational stressors, including the affects of these such as distress. When intense negative affective experiences are encountered as a result of stressors, various experiences may occur. These include subjective emotional experiences, such as depression, anxiety and anger, arousal responses, such as shaking and increased respiration, (Larsen & Diener, 1987), and various cognitive processes, such as focussing on the nature of the stimuli (Larsen et al.,1987). As suggested above, the typical intensity of affect experienced in conjunction with the frequency of situational stressors determines subjective well-being. However, this assertion does not take account of individual differences in the types of responses elicited to reduce negative affective experiences. Parker and Endler (1992) have proposed that the strategies employed in response to reactions to negative situational stressors determine subjective well-being, such as psychological distress and somatic complaints and, subsequently, whether individuals are 'good' or 'bad' copers. Toch (1992) also identified important differences in coping ability when he concluded

that prisoners who did not self-harm or attempt suicide in response to prison crises 'harnessed' stress, rather than were controlled by it. To do this they employed various strategies that included social support or being emotionally detached from problems. Subjective well-being, therefore, might be determined by either not experiencing intense negative affect frequently and/or by responding with functional strategies when intense negative affective states occur.

Parker and Endler (1992) have suggested that the types of responses employed by individuals to cope with negative situational stressors have been categorised into two main dimensions. They reviewed thirteen measures in the coping literature and found that nine identified emotion-focused coping and problem-focused coping as central mechanisms. Parker and Endler stated that emotion-focused coping refers to emotional responses, self pre-occupation, and fantasising, whereas problem-focused coping refers to responses used to solve a problem or cognitively reframe it. A number of additional constructs have been proposed, such as avoidance-focussed coping that involves employing strategies to distract attention from the source of stress. However, no consensus exists on the structure of coping or even the elements that comprise the various types of coping. Parker and Endler suggested that the coping literature has had limited theoretical and empirical advances due to the psychometric inadequacies of measures used. The number of scales alone in the thirteen measures they examined ranged from three to twelve, which has limited the validity and generalisability of results. Such disparity within the field of coping exemplifies the complexity of responses that can be initiated in response to stressors. An alternative approach, rather than attempting to encompass all types of responses, is to limit the scope under examination. One such limitation is to focus on responses directed to the reduction of aversive emotional states.

Affect regulation in the current context concerns strategies employed to reduce any type of negative affective state, that primarily includes experiences such as stress or other symptoms

of anxiety (such as those concerned with arousal), depression, and anger. This is conceptually different from coping, which has primarily focussed on the relationship between situational stressors and strategies in response to these, rather than the reduction of negative affective experiences specifically. Miller's (1992) review of research on coping with health problems, however, has provided some insight into individual differences in coping that relate to the notion of affect regulation. She has suggested that certain strategies transfer focus from the threatening aspects of a situation, so that stress can be reduced. Her review suggested that individuals who used strategies that diverted attention from the source of stress and modulated internal arousal, such as using relaxation techniques or reinterpreting the situation, most effectively achieved the regulation of stress. These strategies enabled aversive events to be processed more efficiently because anxiety was reduced. Individuals who focussed on aspects of a threatening situation and tended to spend less time averting attention away from their situation maintained high levels of stress. However, Miller noted that the effectiveness of these strategies varied depending on the degree of control participants could exercise over their situation. Where control existed, focussing attention on the threatening aspects of a situation and seeking information on the source of a stressor had a positive effect on reducing stress.

Functional means of reducing intense negative affect therefore includes strategies that avoid and reinterpret the threatening aspects of stressors that cannot be controlled, and addressing issues concerned with a stressor where control can be exerted, to assist in alleviating subjective emotional experiences and arousal responses. The identification of prisoners who do not have an effective repertoire of strategies enabling the alleviation of intense negative affective states might therefore assist in identifying vulnerability to self-harm.

The Present Study

The research reviewed on self-harm suggests that self-harm incidents are associated with intense negative affect such as depression, hopelessness and anger (e.g., Pattison & Kahan, 1993). Individuals with a history of self-harm have also reported experiencing greater distress and less ability to deal with their problems (e.g., Shea, 1993), have a greater tendency to be impulsive (e.g., Shea, 1993), while also employing more dysfunctional behaviour such as social withdrawal (e.g. Shea, 1993), and acts of aggression (e.g., Hillbrand et al., 1994), compared to those with no history of self-harm. The factors that mediate intense negative affect and subsequent dysfunctional behaviour are not clear, although various cognitive states such as high levels of hopelessness (a significant aspect of this state is pessimistic cognition), rigid thinking (e.g., Schmidtke & Shaller, 1992), and poor interpersonal problem-solving (e.g., Schotte et al., 1990) have been associated with self-harm behaviour. These dysfunctional cognitive processes, however, have not been demonstrated when affective states were not at intense levels. This suggests that individuals vulnerable to self-harm migght have a tendency to experience intense emotional responsiveness and hence have high levels of affect intensity. This tendency might also be coupled with problems eliciting functional affect regulation strategies when experiencing intense negative affect, resulting in patterns of dysfunctional, including harmful, means of reducing aversive states.

The present study was devised to test the hypotheses that high affect intensity and dysfunctional affect regulation strategies are associated with self-harm in prisoners. If supported, this hypothesis suggests that assessing characteristic emotional responsiveness and use of affect regulation strategies might assist in the identification of prisoners at risk of self-harm, and provide a basis for the formulation of intervention and management plans in vulnerable prisoners. Specifically, prisoners with a history of self-harm were expected to score higher on a

measure of affect intensity than prisoners with no history of self-harm, and employ fewer functional strategies to regulate affect. They were expected to be deficient in cognitive processes to reduce intense negative affect, engage in less social interaction during these states, and employ fewer distraction techniques to avert from negative situational stressors. More use of aggression to decrease intense negative affect was also expected by the self-harm group.

CHAPTER TWO – PILOT STUDY

It was necessary to review the existing measure of affect intensity, the AIM (Larsen & Diener, 1987), for use in the present study because it has demonstrated variability in the number of factors produced (e.g., Weinfurt, Bryant & Yarnold, 1994). The style of language used in the AIM was also reviewed for its appropriateness with a prison sample. No measures of affect regulation were found for the present study, so existing coping measures (e.g., the Ways of Coping Checklist (WCC), Folkman and Lazarus, 1985; the Cybernetic Coping Scale (CCS), Edwards & Baglioni, 1993) were reviewed as they contain items concerned with decreasing intense negative affect. These measures, however, include other responses to negative situations that are not directed towards reducing intense negative affect, nor have they demonstrated adequate reliability and validity (e.g., See Parker & Endler, 1992).

The first phase of the present research, therefore, involved the development of appropriate measures of affect intensity and affect regulation for use with a prison sample. This involved initially restructuring items in the AIM (Larsen & Diener, 1987) to suit the prison population, and administering this modified version to a small prison sample. Prisoners in this sample were then asked to elicit strategies that described the methods they used to regulate affect, and to discuss the utility of various categories of strategies derived from coping (e.g., Folkman and Lazarus, 1985; Edwards & Baglioni, 1993) and self-harm literature (e.g., Shea, 1993; Hillbrand et al., 1994). Items in the modified affect intensity measure were then refined and a checklist of affect regulation strategies constructed. Scales were derived for items in both measures based on previous research suggesting that affect intensity (Weinfurt et al., 1994) and affect regulation (Fokman & Lazarus, 1985; Edwards & Baglioni, 1993; Miller, 1992) are multi-dimensional constructs. The reliability of these scales was assessed using an independent rater.

Dimensions of Affect Intensity

The assumption that affect intensity is a unidimensional construct and the use of global AIM scores as a means of assessing affect intensity (Larsen & Diener, 1987) have been challenged by Weinfurt et al. (1994). They used confirmatory factor analysis to test two models of affect intensity, a one dimensional model, as proposed by Larsen and Diener, and a four dimensional model, as suggested in other research they reviewed. They also used exploratory principal components analysis to examine a model of best fit. Analyses were conducted on AIM scores from 673 undergraduate students, and it was found that the data best fitted a four-factor model. The four factors were positive affectivity (positive affect with high arousal, such as happiness), negative intensity (negative affect in general, such as sadness, and with high arousal, such as anxiety), serenity (positive affect with low arousal, such as relaxation) and negative reactivity (reactions to negative situational stressors, such as sad movies). Chronbach's alpha levels for the four factors varied between .75 and .90 suggesting adequate to very good internal consistency in each factor. The inter-correlation between these factors demonstrated that they were relatively unrelated (mean phi co-efficient = .26) suggesting that affect intensity is not a unidimensional construct. Weinfurt et al. therefore proposed that it is inappropriate to rely on global AIM scores alone and the use of separate sub-scales in research on affect intensity is necessary. The present study therefore employed these four factors as sub-scales to undertake a more valid assessment of affect intensity.

Dimensions of Affect Regulation

Questionnaires that assess coping examine the frequency of various types of responses made by individuals to stressful situations. Numerous coping questionnaires have sought to encompass the range of responses enacted (See Parker & Endler, 1992), however, the present

study required a measure to specifically assess strategies aimed at reducing intense negative affective states. Although both coping and affect regulation refer to responses that occur to manage the experiences encountered when negative situations arise, affect regulation focuses on the utility of strategies employed to reduce elicited intense negative affect. The conceptual similarities between coping and affect regulation, however, also suggested that an examination of the types of items and scales included in coping questionnaires might assist the process of developing a checklist of affect regulation strategies.

Two relevant coping questionnaires that incorporate strategies used to reduce negative affect are the Ways of Coping Check-list (WCC) (Folkman & Lazarus, 1985), and the Cybernetic Coping Scale (CCS) (Edwards & Baglioni, 1993). The WCC was selected as it has probably been the most widely used measure in coping research (Parker & Endler, 1992), suggesting that there is consensus in the field that it provides an acceptable measure with an adequate structure. The CCS is described as it has a theoretical basis for coping similar to the notion of affect regulation in that coping concerns the achievement of an optimal state when stress is experienced. These measures also exemplify functional strategies to reduce stress described by Miller (1992), such as reinterpreting threatening situations, engaging in activities to divert attention, seeking information about the source of distress.

The Ways of Coping Checklist (WCC, Folkman & Lazarus, 1985) is based on the theory that coping involves reducing perceived demands after a threat is detected, then eliciting responses to this threat. The WCC comprises sixty-six items divided into eight coping behaviour scales. These scales are confrontive (e.g., I expressed anger to the person(s) who caused the problem), planful problem-solving (e.g., I made a plan of action...), distancing (e.g., Went on as if nothing had happened), positive reappraisal (e.g., I was inspired to do something creative), seeking social support (e.g., Talked to someone...), escape-avoidance (e.g., Tried to make myself

feel better by eating, drinking,....), accepting responsibility (e.g., Criticised or lectured myself), and self-controlling (e.g., I tried to keep my feelings to myself). Items are rated on a four-point scale from 'not used at all' to 'used a great deal'. Although the WCC has been used frequently, it has not demonstrated stability in its factor structure (Parker & Endler, 1992). Edwards and Baglioni (1993) also calculated internal reliability estimates on the eight proposed scales using data from 501 Masters of Business Administration (MBA) students. They found that only one scale exceeded an alpha level of .70 and that six ranged between .53 and .68, suggesting overall poor internal consistency within scales.

The Cybernetic Coping Scale (CCS) (Edwards & Baglioni, 1993) was constructed on the theoretical assumption that coping involves attempts to modify the negative effects of stress by reducing the discrepancy between an individual's perceived and desired state. This approximates the concept of affect regulation although most CCS items focus on responses to address stressors, and not negative affect. It comprises the following five scales: changing the situation (e.g., 'I tried to fix what was wrong with the situation'), devaluation (e.g., 'I told myself the problem was unimportant'), avoidance (e.g., 'I tried to forget about the whole thing'), accommodation (e.g., 'I tried to adapt to the situation'), and symptom reduction (e.g., 'I tried to just let off steam'). Items are assessed according to how coping was achieved in a particular problem-area using a seven-point scale ('Did not use at all' to 'Used very much'). Edwards and Baglioni administered the CCS to 501 MBA students according to how they coped with looking for their ideal job. Cronbach's alpha calculated for each of the scales suggested that accommodation had a reliability coefficient of .78 and the remaining scales had coefficients above .86, demonstrating higher internal consistency within scales compared to the WCC scales. Edwards and Baglioni, however, cautioned against using this measure in its current form as adequate reliability studies have not been conducted on a variety of samples.

Problems with the psychometric properties of these measures suggested that it was inappropriate to simplify modify existing scales in either the WCC and the CCS to reflect means of affect regulation for use in the present study. These measures, however, demonstrated that a diversity of types of items was required to achieve an accurate assessment of affect regulation. Primarily cognitive strategies were described as a means of approaching the identified stressor. Both the WCC and the CCS included items that describe problem-solving (in the planful problem-solving and changing the situation scales, respectively) and attempting to avoid the situational stressor (in the distancing scale in the WCC and avoidance scale in the CCS). Others focused on thinking about how to deal with the affective experiences rather than addressing the situation (self-controlling in the WCC and symptom reduction in the CCS). The WCC also includes several types of behaviour, such as expressing anger (in the confrontive coping scale), talking to friends (in the seeking social support scale) and religious activities (positive reappraisal scale), to cope with negative situational factors.

Face Validity in a Prison Culture

Good face validity of measures in the present study required consideration of the prison culture to ensure items were relevant and understandable. This issue was particularly important considering the experience of imprisonment is particularly different from what is generally experienced in society. Many factors might contribute to this such as the physical environment, involvement in the criminal justice system, dangers inherent to being imprisoned such as threats and violence, and personal vulnerability factors such as substance abuse and impulsivity (Toch, 1992). Items in the AIM and questionnaires such as the WCC and the CCS are problematic in this respect. For example, the AIM was normed on U.S. college students and the vocabulary and style of language used assumes this educational level. Some of the terms used, such as

exuberance, euphoria and jubilance, and style of language in items such as 'When someone compliments me, I get so happy I could 'burst", are unsuited to the prison culture. Coping questionnaires similarly use abstract concepts and vocabularies that seem inappropriate for the present study such as 'I let my feelings out somehow' and 'Tried not to burn all my bridges but leave things open somewhat' in the WCC.

In an attempt to overcome the potential problem of participants not understanding or identifying with the content of the AIM, items were altered prior to pilot testing on a prison sample. The style of language and vocabulary were simplified and situations were presented that were considered more relevant to prisoners. For example, the original item 'Sad movies deeply touch me' was modified to 'Sad movies get to me'. This modified AIM was administered to a sample of prisoners so that they could comment on the use of terms and relevance of item content. The modified AIM was then further refined and a checklist of affect regulation strategies was constructed on the basis of information provided by the sample of prisoners.

Method

Participants

Ten male prisoners, five Aboriginal and five Non-Aboriginal, from a West Australian maximum security prison participated. Ages ranged from eighteen to thirty-five years old. The prison psychologist, to avoid potential participants feeling coerced to participate if approached by an individual unfamiliar to them, initially approached prisoners. This process also ensured that prisoners' files were accessed by existing correctional service employees to retain the anonymity of participants. The psychologist was also available for referrals if prisoners appeared distressed during the interview. The psychologist was asked to select prisoners that might be interested in discussing the measures under investigation, and that did not have a history of self-harm recorded on their prison or medical files. Prisoners were asked if they were willing to participate in a research project that involved discussing some questionnaires on emotional reactions so that they could be improved for use in another study.

Measures

Modified Affect Intensity Measure (AIM(M))

The original AIM consists of items that describe the experience of different emotional states. A modified version of the AIM (Larsen & Diener, 1987) was constructed based on the forty original items within the four factors, identified by Weinfurt et al. (1994), that were used as sub-scales. This modified AIM (AIM(M)) emulated the types of responses and situations posed in original items but drew on experiences, situations and terms with which it was expected prisoners could better identify. The AIM(M) was also designed to avoid repetition of items so that where several items described similar situations and affective responses in the original measure, the AIM(M) sought to include only one or two items of each type. Items were modified if terms considered more suitable for a prison sample could be substituted, or eliminated if no

feasible alternatives could be generated. Additional items were included that attempted to capture the features of one of the four factors described by Weinfurt et al..

The first factor identified by Weinfurt et al. (1994) was positive affectivity and comprised seventeen items in the original AIM reflecting high arousal positive affective states. Eight of these items described intense positive emotions (e.g., 'When I'm happy it's a strong type of exuberance') and the other nine items concerned positive reactivity, or intense positive affective responses to situations. Five of the positive reactivity items described accomplishments, such as 'When I solve a small personal problem, I feel euphoric'. Two were concerned with positive situations generally, such as 'When something good happens, I am usually more jubilant than others'. One item described anticipating an event, 'My heart races at the anticipation of some exciting event'; and another concerned sociability, 'I enjoy being with other people very much'.

The original seventeen items in the positive affectivity sub-scale were modified or discarded for use in the pilot study resulting in a five item sub-scale in the AIM(M). Only one item described the general experience of positive affect as intense, namely 'When I'm happy, I feel pepped-up and excited more than calm and content'. The remaining items describing intense positive states in the original scale were considered inappropriate as terms included, such as exuberance, euphoria and jubilation, were incongruent with language used within prisons. The additional four items described positive reactivity. Items described situations similar to those in the original AIM including accomplishments ('When something happens that makes me look good, I feel really proud'), positive situations generally ('When things go right, I feel fantastic'), and anticipating a positive event ('I feel really hyped-up when something exciting is going to happen'). An additional item included in this sub-scale, not directly based on an original item, was 'When I feel romantic, it is an intense feeling'.

The second factor identified by Weinfurt et al. (1994) was negative intensity and comprised ten items in the original AIM that concerned intense negative affective experiences. Items included physiological responses (e.g., 'When I am nervous, I get shaky all over'), being over emotional (e.g., 'My emotions tend to be more intense than those of most people'), guilt (e.g., 'When I feel guilty, this emotion is quite strong'), anxiety (e.g., 'When I do feel anxiety it is normally very strong'), anger (e.g.' When I get angry it's easy for me to be rational and not overreact') and negative moods in general (e.g., 'My negative moods are mild in intensity').

Minor modifications to a number of items resulted in a six item negative intensity sub-scale in the AIM(M). Items concerned experiencing physiological responses ('When I get nervous, I shake'), being over emotional ('I have feelings that are more intense than most other people' and 'My friends say I overreact'), anger (When I get angry, I still think straight and don't freak-out') frustration ('When I get fed-up, I feel really agitated') and negative moods in general ('When I get upset, it's a really strong feeling'). The remaining four items in the original AIM were considered inappropriate as they described responses that may have created suspicion in participants. It was anticipated that if prisoners were awaiting decisions for conditions of early release, they might have suspected that items describing experiences such as guilt and honesty were being used to assess remorse for their convictions. These items were therefore not included.

The third factor identified by Weinfurt et al. (1994) in the original AIM was serenity, which comprised seven items that described low arousal positive affect, such as being contented, and relaxed. Five items specifically contrasted intense and serene affect such as 'When I'm happy it's a feeling of being untroubled and content rather than being zestful and aroused', and two items described accomplishments, such as 'When I succeed at something, my reaction is calm contentment'.

Five items were included in the AIM(M) that comprised the serenity sub-scale. These items also described accomplishments ('I feel quietly satisfied when people tell me I've done well') and general contentment ('When I'm really happy, I feel relaxed' and 'When I'm in a good mood, it's a mild feeling'). Items were also included that concerned remaining calm ('I stay calm even on days where everything goes wrong') and being calm in general (''Cool and calm' could easily describe me'). Items contrasting positive affect as serene compared to intense were not included to maintain consistency in style, as these comparisons were not made in other sub-scales.

The fourth factor identified by Weinfurt et al. (1994) in the original AIM was negative reactivity which comprised six items that described intense negative affective experiences to negative situations. Items described a variety of situations such as viewing sad movies ('Sad movies deeply touch me'), and responding to antisocial behaviour (e.g., 'I feel pretty bad when I tell a lie') and traumatic situations ('The sight of someone who is hurt badly affects me strongly').

Again, it was considered inappropriate to ask questions related to antisocial behaviour or traumatic situations to avoid participants believing pro-social responses were being assessed in relation to their offending. AIM(M) items that comprised the negative reactivity sub-scale therefore did not include these types of items and resulted in six items concerning negative situations. The original item 'Sad movies deeply touch me' was modified to 'Sad movies really get to me'. Alternative situations were devised that concerned being thwarted ('If someone stops me doing what I want to do, I feel really annoyed'), deceived ('I get really hurt when people I care about deceive me'), let-down ('When people let me down, I can handle it') and rejected ('Being rejected makes me feel really low'). An item regarding responses to negative situations in general ('When something bad happens, I feel really down') was also included.

In the original AIM, participants are required to indicate the frequency with which they experience the affective states depicted in items on a six-point Likert-type scale from 'Never', 'Almost Never', 'Occasionally', 'Usually', 'Almost Always', to 'Always'. In addition to this scale, another six-point Likert-type scale was included for prisoners to assess: 'Not at all', 'Hardly ever', 'Occasionally', 'Often', 'Most of the time', and 'All the time'.

The original instructions for the AIM were:

> *The following questions refer to emotional reactions to typical life-events. Please indicate how YOU react to these events by placing a number from the following scale in the blank space preceding each item. Please base your answers on how YOU react, not on how you think others react or how you think a person should react.*

These instructions were simplified for use in the pilot study to:

> *The following statements describe emotional reactions in different situations. Please tell me whether these statements are true for you NOT AT ALL, HARDLY EVER, OCCASIONALLY, USUALLY, MOST OF THE TIME or ALL THE TIME.*

Affect Regulation Strategy Checklist (ARSC) Categories

A number of categories of strategies for regulating negative affect were generated to provide scales for an Affect Regulation Strategy Checklist (ARSC) in the main study. To assess the validity of these categories, affect regulation strategies generated by participants in the pilot study were assessed against these categories. Discussion with participants about the types of strategies each category represented in the pilot study also determined whether prisoners could identify with each of the categories, despite whether they had elicited those types of strategies. Categories were based on scales used in coping measures (Parker & Endler, 1992, Folkman &

Lazarus, 1985, Edwards & Baglioni, 1993), particularly responses associated with regulating stress (Miller, 1992), and on dysfunctional processes associated with a history of self-harm (e.g., Wanstall & Oei, 1989, Shea, 1993). The categories selected for inclusion were cognitive, distraction, social interaction, and aggression. These categories sought to encompass the most typical means of regulating affect that would discriminate vulnerability to self-harm. A definition for each category was derived based on the research literature reviewed for each type of strategy, and to ensure that categories were mutually exclusive. These definitions were used to categorise items elicited by participants in the pilot study, and to calculate inter-rater reliability on finalised items for the ARSC.

Cognitive processes were included as a category as previous research has suggested that individuals self-report problems with cognitive processes prior to an act of self-harm (e.g., Wanstall & Oei, 1989) and experience cognitive deficits following a self-harm incident when intense negative affect is experienced (e.g. Schmidtke & Schaller, 1992; Schotte et al., 1990). None of these studies, however, have assessed self-reported problems in cognition when intense negative affective states occur that are not necessarily associated with a self-harm incident. Moreover, Miller (1992) suggested that individuals predisposed to focusing on threatening aspects of a situation and who did not use strategies, such as reinterpreting their situation, retained high levels of stress. Numerous scales in both the WCC and the CCS also focus on various types of cognition. These include problem-solving strategies such as the planful problem-solving scale in the WCC (e.g., 'Came up with a couple of different solutions to the problem') and changing the situation scale in the CCS (e.g., 'I tried to change the situation to get what I wanted'). Other cognitive strategies described avoiding the source of stress, such as distancing in the WCC (e.g., 'Tried to forget the whole thing'), or minimising the significance of the stressor, such as devaluation in the CCS (e.g., 'I tried to convince myself that the problem

was not very important after all'). Other scales described attempts at coping with affective states such as the self-controlling scale in the WCC ('I tried to keep my feelings to myself') and the symptom reduction scale in the CCS ('I tried to relieve my tension somehow'). The cognitive category therefore embraced a diversity of cognitive processes invoked to reduce intense affective states. Cognition that focussed on stressors, such as active problem-solving and reinterpreting sources of stress, and cognition that focussed on affective states, such as tolerating the negative affect (e.g., waiting for the state to subside) and reducing these states (e.g., through relaxation), were included as strategies. The definition for cognitive strategies was

> *strategies that require individuals to think about their situation, problem, or feelings in a way that has the effect of reducing their negative affective state*

Distraction was included as a category as Miller (1992) found that the ability to undertake activities that achieve a shift in attention from threatening situations subsequently decreased stress in numerous samples, and hence provides an important means of modulating internal arousal. Individuals predisposed to focusing on sources of stress tended not to undertake these activities and developed more somatic conditions (Miller, 1992). Although no research reviewed above on self-harm has focused on these activities, both the WCC and the CCS contain scales incorporating items concerned with distraction. Items that describe these types of behaviour are 'Tried to make myself feel better by eating, drinking, smoking, using drugs and medication, and so forth' in the escape-avoidance scale of the WCC; and 'I did something I thought would soothe my nerves' in the symptom reduction scale of the CCS. Strategies that divert attention, from the situation or emotion experienced, to reduce negative affective states incorporate a wide range of activities such as watching television, reading, and using relaxation techniques. It should be noted that there is an overlap between distraction strategies and both social interaction and aggression strategies, which were also included as categories and may function as means of

distraction. The definition of the distraction category therefore excluded these strategies and was:

non-aggressive strategies that effectively allow an individual to concentrate on another activity (that does not primarily focus on social interaction) and hence avoid/ignore their current state

Social interaction and aggression were included as separate categories as both types of behaviour have been associated with self-harm. Particular focus on these responses was therefore important to determine whether prisoners with a history of self-harm could be discriminated on the basis of social withdrawal or increased use of aggression to regulate affect.

Social interaction was included as a category as previous research has suggested that individuals with a history of self-harm have deficiencies in socialising. Prior to an act of self-harm, for example, individuals may become socially withdrawn (Wanstall & Oei, 1989). MMPI results comparing prisoners with a history of self-harm with control prisoners also suggested that prisoners with a history of self-harm generally experienced more social alienation (Shea, 1993). This could mean that prisoners vulnerable to self-harm may be less inclined to attempt strategies that involve interacting socially to decrease intense negative affective states, although no previous research has explored this specifically. Seeking social support was also included as a scale in the WCC based on factor analytic studies (Folkman & Lazarus, 1985) suggesting that this type of behaviour provides the basis for a separate scale. The social interaction category therefore concerned socialising as a means of distraction from stressors, or the use of social resources to assist with sources of distress. The following definition was used for social interaction:

strategies that refer to an individual initiating behaviour with the purpose of interacting with other people

Aggression was included as a category as previous research has demonstrated that prisoners with a history of self-harm were more likely to act aggressively (Hillbrand et al.., 1994) and have impulsive tendencies (Shea, 1993) compared to control prisoners. Libeling (1992) also found that juveniles with a history of self-harm experienced more conflict with other inmates compared to control participants. Although neither the WCC or the CCS contain scales that focus on aggressive behaviour, the WCC confrontive scale contains an item that taps into these behaviours ('I expressed anger to the person(s) who caused the problem') but also describes other actions that do not involve aggressive behaviour (e.g., 'I did something which I didn't think would work, but at least I was doing something'). Aggressive behaviour may not have featured in these measures as they were normed on student samples, so the use of aggressive behaviours to cope with situations may not have seemed applicable within this context compared to a prison culture where violence is prevalent (e.g. Toch, 1992). The aggression category therefore sought to explore whether aggressive strategies were used as a means of affect regulation. Strategies included a broad range of behaviours including swearing, slamming doors, and hitting objects and people.

The definition of aggression strategies was:

strategies that refer to verbal or physical acts of aggression.

Procedure

The prison psychologist explained to potential participants that participation was voluntary and would involve looking at a questionnaire and discussing emotional responses so the information could be used in another study with other prisoners. Willing participants were directed, individually or up to three at a time, to an interview room where they were again informed of the purpose of the study. They were also again told that participation was voluntary

and could be withdrawn at anytime. They were then asked if they had any queries, and required to sign an informed consent form if they wished to participate.

Participants were then given printed copies of the AIM(M) and asked to read the directions. Participants were told they could comment on the measure in general or on individual items as they completed it. They were asked whether they had any questions before being requested to complete the AIM(M). Half of the participants were presented with the original scale and half with the alternative. On completion, they were interviewed regarding their general impressions of the measure and again asked whether they had any comments on individual items. They were then presented with the scale they had not used and asked if they had a preference for the two response scales.

Participants were then asked to list the things that they do to make themselves feel better when they experience intense negative emotions, such as stress, anger or depression. Participants were then asked whether they, or other prisoners they knew, engaged in the types of behaviour represented by the cognitive, distraction, social interaction and aggression categories to reduce stress, anger, depression, or other negative emotions.

Participants responses were then examined, and AIM(M) sub-scales were refined and the scales of the ARSC were constructed. An independent rater then categorised items in both measures. Items for each of the AIM(M) sub-scales were categorised using the following information from Weinfurt et al.'s (1994) description of the four factors of the AIM: positive affectivity concerns all positive affective experiences with high arousal, such as happiness, and includes positive affective responses to positive situations; negative intensity concerns the experience of negative affect in general, including high arousal, but not in response to negative situations; serenity concerns positive affect with low arousal, such as relaxation; negative

reactivity concerns negative affective responses but only to negative situations. Scales for the ARSC items were categorised using the definitions given in the Measures section above.

Results

Participants generally found the AIM(M) easy to understand and complete. Feed-back from responses to AIM(M) items resulted in six items being discarded and an additional six modified resulting in a sixteen item measure. Participants elicited a range of strategies used to regulate intense negative affective states that matched cognitive, distraction, social interaction, or aggression categories. They were also able to identify with these categories, so items were constructed for the ARSC using these categories. This resulted in a thirty item measure. Inter-rater reliability measures for the AIM(M) and the ARSC suggested that items in both measures demonstrated good reliability for each of the sub-scales and scales.

Participants worked through AIM(M) items quickly and said they did not find items confusing or difficult to understand although several participants made similar comments regarding the content of some items. On the basis of these comments, and where otherwise considered appropriate after reviewing the AIM(M), several items were rejected or modified. Of the five items in the positive affectivity sub-scale, the item 'When I feel romantic, it is an intense feeling' was discarded as several participants stated that romance could only elicit an intense feeling, which made the statement seem illogical.

Four of the six items from the negative intensity sub-scale were modified. One item were considered difficult to rate also because intense responses were perceived as self-evident in the item 'When I get upset, it's a really strong feeling' which was modified to 'When I feel down, I get really upset'. A minor modification was made to the item 'When I get fed-up, I feel really agitated', to 'When I'm fed-up, I feel really agitated' to reflect a more pervasive mood. Several participants found the item 'My friends say I overreact' from this sub-scale difficult to rate as they were uncertain what their friends thought so this item was changed to 'I tend to overreact to things'. 'I have feelings that are more intense than most other peoples' also from the negative

intensity sub-scale was modified to 'I get stressed-out more than most other people' to focus on anxiety rather than more potentially confronting affective experiences such as love and hate.

Most participants stated that items describing positive affective states as being typically mild in the serenity sub-scale ('When I'm in a good mood, it's a mild feeling.' 'When I'm really happy, I feel relaxed.') were nonsensical because these positive affective experiences were perceived as quite different from the experience of relaxation and serenity. These items were subsequently discarded resulting in a three item sub-scale. Of these three items, ''Cool and calm' could easily describe me' was modified to ''Laid back' could easily describe me' to eliminate the potential for participants to respond to the image of being 'cool', rather than a serene experience.

Another three items in the negative reactivity sub-scale ('I get really hurt when people I care about deceive me'; 'Being rejected makes me feel really low' and 'When something bad happens I feel really down') were also eliminated, again because they seemed self-evident, resulting in a three item sub-scale. 'When people let me down I can handle it' from this sub-scale was also modified to 'People that let me down really get to me' to more clearly describe an affective experience rather than ability to tolerate rejection. These modifications resulted in a sixteen item AIM(M) (four items in positive affectivity, six items in negative intensity, three items in serenity and three items in negative reactivity sub-scales). Seven of the ten participants also preferred the scale with anchor points from 'not at all' to 'hardly ever' for the AIM(M) rather than 'never' to 'always'.

An independent rater then catgorised each item into one of the four sub-scales. This procedure resulted in all sixteen items being correctly categorised. The AIM(M) was therefore considered to have good inter-rater reliability. Although the number of items in sub-scales was small, the procedures undertaken to ensure the face validity of items and reliability of sub-scales

suggested that it was appropriate for use in the main study.

Participants elicited between three and twelve affect regulation strategies that were matched to one of cognitive, distraction, social interaction or aggression categories based on the above definitions. Most participants stated that being able to communicate with others within the prison, on the telephone, or at visits was an important means of reducing negative affective experiences (social interaction category). Most also listed a number of activities undertaken to reduce negative affect, particularly sporting activities or watching television (distraction category). Several responses focused on aggressive strategies such as abusing people or objects. For three participants, being able to control their emotions with cognitive strategies, such as focussing on regaining control or avoiding aversive states, were central to their means of affect regulation. Discussion with participants regarding these categories also revealed that although not all participants used all types of strategies, they believed that others they knew in the prison did. Most notably, several participants did not generally use cognitive strategies and most did not currently use aggression, although they stated that they used aggressive strategies when they were younger. All elicited responses could be categorised and, because there was consensus on each category describing affect regulation strategies that were used within a prison population, no additional categories were considered for the main study.

A thirty item Affect Regulation Strategy Checklist (ARSC) was derived based on participants' responses and by simplifying items in the WCC and CCS for each of the cognitive, distraction, social interaction and aggression categories. Eight items comprised cognitive strategies. These included items that focused on problem-solving ('I try and work out a way to do something about the problem'), cognitive avoidance ('Instead of worrying, I try to think about other things'), and reinterpreting situational stressors ('I think about the situation in a different way so it doesn't seem so bad'). Five items focused on cognitive control of affective experiences

('I tell myself that there's no use feeling this way'; 'I concentrate on trying to relax'; 'I concentrate on trying to think clearly'; 'I stop myself before I get intensely stressed or depressed') and tolerating intense negative affect ('I tell myself to ride it through because it will pass').

Twelve non-aggressive distraction strategies that did not involve social interaction comprised the distraction scale. Strategies included leisure activities such as 'I read', 'I do sporting activities', 'I watch t.v.', 'I use a relaxation technique', and 'I go and do something like a drawing or a painting'. Two items concerned turning to religious activities ('I read a Bible' and 'I pray') and one concerned working ('I go and work really hard'). The range of activities also included less active strategies such as 'I cry', 'I go somewhere to be alone', and substance use ('I get drunk' and 'I take other drugs').

The social interaction scale comprised four items. Two items concerned using social interaction as a means of distraction which were 'I try and joke around with my friends' and 'I do other things with my friends'. The remaining two items concerned engaging social interaction to assist in the source of stress and were 'I try and get someone else to help me do something about the problem' and 'I talk to friends about my problems'.

Six items were included in the aggression scale. Three of these described strategies directed at objects ('I slam doors'; 'I take it out on my belongings'; 'I throw things'). The remaining three described aggressive actions that were directed towards others ('I verbally abuse other people'; 'I hit other people'; 'I yell',).

An independent rater was asked to categorise items in the ARSC using the above definitions and there was disagreement on only one item suggesting good reliability for items in each of the scales. The only item not categorised correctly was 'I concentrate on trying to relax' from the cognitive category, which was classified by the independent rater

as a distraction strategy. The term 'concentrate', however, suggested that this item focused on cognitive processing, hence it was retained in the cognitive scale.

CHAPTER THREE - THE MAIN STUDY

Method

Participants

Two samples of male prisoners, a self-harm group and a control group, were selected from two maximum security prisons in Western Australia. To preserve prisoners' privacy by limiting file access to existing correctional employees and retaining prisoners' anonymity, potential participants were selected by the prisons' psychologists based on their knowledge of prisoners and cross-checking information on files. Psychologists involved in selection were also available for referrals if participants appeared distressed during the interview.

Psychologists approached every prisoner who met the criteria for the self-harm group over a two and a half-month period. Prisoners for the self-harm group were required to have committed at least two acts of self-harm while in prison or in the community (the most recent act within a year), but to be assessed as not currently at risk of self-harm. This was to minimise the risk of prisoners being coerced into participating by virtue of their vulnerable state. Self-harm was defined as the act of intentionally inflicting harm on oneself resulting in injuries that require medical attention. Self-report was used to determine whether these acts were intentional rather than accidental through interviews by the prison psychologists, although at times that were not connected to the present study. Suicidal intent was not considered as this information is variably available in prison records and the purpose of the current study was to examine individual difference characteristics in prisoners vulnerable to self-harm regardless of intent. The prison psychologist was asked to select matched participants for the control group who

did not have a known history of self-harm. Control prisoners were matched with self-harm prisoners according to prison, race (Aboriginal Australian, or not), and age. Age was matched by finding a prisoner on the muster with a date of birth as close as possible to that of the self-harm prisoners'.

Forty prisoners, twenty in each group, participated. Fifteen from each group were tested in one prison and five from each group were tested in the other. Seven from each group were identified as Australian Aboriginal and thirteen as Non-Aboriginal. Age was calculated for each prisoner in years and months. The mean age for the self-harm group was 24 years (SD=3.37) and the mean age for the control group was 24.1 years (SD=3.85). No additional information regarding prisoners who participated was sought to respect the confidentiality of the information on prisoners' files.

Measures

Modified Affect Intensity Measure (AIM(M))

The final version of the AIM(M) comprised sixteen items that assessed four dimensions of affect intensity, as described in the pilot study in Chapter Two. Four items assessed positive affectivity (all positive affective experiences with high arousal), six items assessed negative intensity (general negative affective experiences, including those with high arousal), three items assessed serenity (positive affective experiences with low arousal) and three items assessed negative reactivity (intense negative affective experiences to situational stressors). Each item described a common affective experience and participants were required to rate how often they typically experienced this reaction on a frequency scale. The frequency scale was a six-point Likert-type scale, each which had corresponding label and numerical values: 'not at all' (0), 'hardly ever' (1),

'occasionally' (2), 'often' (3), 'most of the time' (4) and 'all the time' (5). Each of the scale labels and their corresponding numbers were printed across a white A4 page.

Verbal instructions given to participants when the scale was first presented were:

> For the first part of this interview I'm going to read some statements to you and ask you to use this scale to answer them. Have you used a scale like this before? .... This scale allows you to choose how often you experience what's described in the statements; you can select from 'not at all' to 'all the time'. The following statements describe emotional reactions to different situations. Please tell me whether these statements are generally true for you not at all, hardly ever, occasionally, usually, most of the time, or all the time. You can use either the words or the numbers in the scale to answer the statements. Do you understand?

After re-coding reverse worded items and averaging across items, the possible range of scores for each of the sub-scales was 0 – 5 with high scores corresponding to the frequent experience of: (a) positive affect with high arousal (positive affectivity); (b) intense negative affect in general, including high arousal (negative affectivity); (c) a lack of positive affect with low arousal (lack of serenity, with low scores corresponding to the frequent experience of low arousal positive states such as relaxation); and (d) intense negative affective responses to situational stressors (negative reactivity).

Global Affect Intensity Measure

A global affect intensity measure was also administered as an overall measure of affect intensity and as a validity check for the AIM(M). It required participants to self-

assess their emotional responsiveness in general. Responses were made on a scale from 'Mildly', which had a value of 1, to 'Intensely', which had a value of 10. These anchors and the numbers from 1 to 10 were printed across a white A4 page, and no other numbers were assigned labels. Responses were participants' global affect intensity scores.

Instructions given to participants were

> On a scale from one to ten, do you think you're a person who reacts intensely to things, or do you have fairly mild reactions?

Affect Regulation Strategy Checklist (ARSC)

The final version of the ARSC comprised thirty affect regulation strategies. These strategies described processes by which participants might decrease intense negative affective states. Strategies were rated against the frequency scale used in the administration of the AIM(M) and an effectiveness scale. The effectiveness scale was a six-point Likert-type scale with indicators of 'useless' (0), 'not much good' (1), 'fair' (2), 'good' (3), 'very good' (4), to 'excellent' (5). Each of the scale labels for this scale, and their corresponding numbers, were also printed across a white A4 page.

Participants were given the following instructions:

> The following statements describe things you might do to make yourself feel better when you feel bad, like being depressed, stressed or angry. First state how often you use each technique with the scale that you used earlier: not at all, hardly ever, occasionally, usually, most of the time, or all the time. Again, you can use either the words or the numbers in the scale. Then state how good each technique is at making you feel better using this other scale: useless, not much good, fair, good, very good or

excellent. Again, you can use either the words or the numbers in the scale. Do you understand?

As described in Chapter 2, the thirty items in the ARSC comprised four categories: cognitive, distraction, social interaction and aggression. Eight items referred to cognitive strategies, defined as strategies that require an individual to think about their situation, problem or feelings in a way that has the effect of reducing their negative affective state (e.g., 'I tell myself there's no use feeling this way'). These items focused on cognitive processes to reduce the intense affective response either by promoting relaxation, reframing the problem, diverting attention from the situation, or problem-solving. Twelve items described an array of distraction techniques, defined as non-aggressive strategies that effectively allow an individual to concentrate on another activity (other than those primarily involving social interaction), and hence avoid or ignore the aversive nature of their current state. These items described behaviour ranging from watching television, participating in sporting activities, or reading, through to taking drugs or alcohol, and engaging in religious activities such as praying. Four items referred to social interaction, defined as strategies that require an individual initiating behaviour with the purpose of interacting with other people (e.g., 'I try and joke around with my friends'). Additional interaction items encompassed other activities undertaken with friends and also seeking help from people. Six items referred to aggressive strategies defined as strategies that describe verbal or physical acts of aggression. Aggressive strategies included verbal abuse, yelling and hitting people, and throwing objects (e.g., 'I take it out on my belongings'). Scores for each of the scales were obtained by calculating the product of the frequency and effectiveness scale scores, then taking the mean of these scores for items in each scale.

Procedure

Prisoners selected by the prison psychologist were invited to participate voluntarily in a university study on how people experience emotions and react to stressful situations. Prisoners were individually directed to an interview room where the purpose of the study was reiterated and they were informed that participation involved an interview that would take about fifteen minutes. They were again informed that participation was voluntary, that they could withdraw at any time, and that individual responses would not be made available to prison administrators, or used in reports about the study. Prisoners were then asked if they had any queries and required to sign an informed consent form.

In each interview both measures of affect intensity, the AIM(M) and the global affect intensity measure, and the ARSC were administered. Instructions were given verbally and responses were recorded on answer sheets. Participants were first presented with the frequency scale and given the instructions to the AIM(M). AIM(M) items were then read to participants who rated each consecutively according to how frequently they had that experience in the situation described. On completion of the AIM(M), participants were presented with the global affect intensity scale and asked to rate their overall affect intensity between 1 and 10. Participants were then given the instructions to the ARSC. After each item was read to participants, they rated the strategy according to how often it was used when intense negative affect was experienced. If the strategy was used, its effectiveness at reducing intense negative affective states was then rated before the next item was presented. All thirty items were administered.

Results

An alpha level of .05 was used for all statistical tests. Two-tailed tests of significance were used for all t-tests. Although directional hypotheses were being tested, they were not so strongly supported by theory as to justify the use of one-tailed tests.

Affect Intensity Measures

The two measures of affect intensity were the sixteen item AIM(M), that had a Cronbach's alpha level of .80, and the single item global affect intensity score.

Participants mean AIM(M) scores for the four affect intensity sub-scales, positive affectivity, negative intensity, lack of serenity, and negative reactivity, were calculated by reverse-coding items that did not describe intense affective states. High scores on the sub-scales therefore corresponded to experiences of intense affective states or lack of serenity. Correlations between the four sub-scales are shown in Table 1. The positive affectivity

sub-scale did not significantly correlate with any of the other sub-scales suggesting that the experience of intense positive affect is not associated with other types of affective experiences. Negative intensity and negative reactivity sub-scales were significantly correlated (r (38) = .56, p = .01) so the experience of intense negative affect in general was associated with the intensity of responses to situational stressors. Although the lack of serenity sub-scale was not correlated with negative reactivity, it was significantly correlated with negative intensity (r (38) = .55, p = .01). A lack of serenity and relaxation was associated with the experience of intense negative affective states in general, but was not associated with responses to situational stressors.

Mean scores for AIM(M) affect intensity sub-scales for both groups are shown in Table 2. The self-harm group had a higher affect intensity score overall (M = 2.97, SD

= .64) than the control group (M = 2.08, SD = .44). Table 2 also shows that the self-harm group rated their affective experiences and lack of serenity higher than the control group

Table 1

Intercorrelations Between Mean Scores for Positive Affectivity, Negative Intensity, (lack of) Serenity and Negative Reactivity Sub-scales of the AIM(M) (N = 40).

Sub-scale	Positive affectivity	Negative intensity	(Lack of) Serenity	Negative reactivity
Positive affectivity (4 items)	- -	.11	-.19	.12
Negative intensity (6 items)		- -	.55**	.56**
(Lack of) Serenity (3 items)			- -	.15
Negative reactivity (3 items)				- -

Note. ** p = .01

on each of the affect intensity sub-scales. Scores were compared in a 4 x 2 mixed factorial design with affect intensity sub-scales (positive affectivity, negative intensity, serenity and negative reactivity) as the within subjects factor and group (self-harm and control) as the between subjects factor. This analysis revealed significant main effects for both the affect intensity sub-scales, F (3, 76) = 33.44, p < .001, and group, F (1, 38) =

22.23, $p < .001$. The interaction between affect and group was also significant, F (3, 76) = 5.64, $p = .003$. Four t-tests for independent samples were conducted to examine the interaction. These t-tests showed that while there was no significant difference between groups for

Table 2

Mean Scores for Positive Affectivity, Negative Intensity, Serenity, and Negative Reactivity Sub-scales in the AIM(M) for Self-harm and Control Groups.

Sub-scales	Self-harm (n = 20) M	SD	Control (n = 20) M	SD
Positive affectivity (4 items)	3.43	0.94	3.39	0.76
Negative reactivity (3 items)	3.28	1.10	2.60	1.15
Negative intensity (6 items)	2.88	0.96	1.33	0.59
(Lack of) Serenity (3 items)	2.21	0.90	1.30	0.56
Total	2.97	0.64	2.08	0.44

Note. Possible range = 0 - 5.

ratings of intense positive affect, t (38) = 0.16, $p = .87$, the self-harm group, compared to the control group, scored higher on lack of serenity, t (38) = 3.82, $p = 001$, and negative intensity, t (38) = 6.14, $p = .000$. There was also a trend for the self-harm group to rate items in the negative reactivity sub-scale higher compared to the control group, t(38) = 1.92, $p = .063$.

Global affect intensity scores were also rated significantly higher by the self-harm group (M = 7.38, SD=2.21) compared to the control group (M = 4.45, SD=1.29), t (30.59) = 5.12, $p < .001$. However, the Levene's test also indicated greater variance in the self-harm group than in the control group (F = 8.12, p = .007). Thirteen participants in the self-harm group rated their overall level of affect intensity above 6, although none of the control group rated themselves above this score. As expected, overall AIM(M) scores and global affect intensity scores were significantly positively correlated (r (38) = .78, p = .00) supporting the validity of the AIM(M) as a measure of overall emotional responsiveness.

Affect Regulation Strategies

Participants rated items on the ARSC in terms of the frequency with which strategies were utilised and the effectiveness of each strategy in decreasing negative affective states. The correlation between participants' mean frequency (M = 2.05, SD = .61) and mean effectiveness (M = 1.89, SD = .61) scores across the 30 ARSC items was .84 ($p < .001$). Due to the high correlation between these two ratings, analysis of ARSC items was conducted using the product scores of frequency by effectiveness ratings for each strategy to produce scores that reflect the overall utility of strategies for participants. These scores were summed and divided by 30 to produce an average ARSC score for each participant with a possible range between 0 and 25. A t-test for independent samples was then conducted on average ARSC scores which showed no significant difference between the self-harm group (M = 5.97, SD = 2.63) and the control group (M = 6.83, SD = 2 69), t (38) = 1.03, p = .31. However, comparing participants' total scores may have obscured differences between groups in the types of strategies utilised. Additional analyses were, therefore, conducted summing across items.

Examination of group means for individual items showed a different pattern for the self-harm group compared to the control group. The latter had relatively high scores for some items and low scores for others, whereas the self-harm group tended to have more moderate scores for all items. Using item mean scores as 'case scores' in a Levene's test showed a significant difference in the variance among items for the two groups, $F = 35.44$, $p < .001$. As can be seen in Table 3, the mean ratings of items for the control group ranged from 0.25 to 15.70 compared to the self-harm group, that had a narrower range, from 1.70 (for 'I read a Bible') to 9.60 (for 'I take other drugs'). The self-harm group tended to rate all strategies more uniformly whereas the control group rated some items quite high and others hardly at all. T-tests for independent samples were calculated, as an exploratory analysis, to compare groups' ratings on each of the thirty items. Table 3 shows that the control group rated undertaking sporting activities and five cognitive strategies (e.g., 'I concentrate on trying to relax'; 'I concentrate on trying to think clearly'; 'I tell myself that there's no use feeling this way'; 'I tell myself to ride it through because it will pass'; 'I think about the situation in a different way so it doesn't seem so bad') significantly higher than the self-harm group. The self-harm group rated two items from the aggression category significantly higher than the control group. These were to use verbal abuse and throw things.

Strategies were categorised, as described in the pilot study, into four scales: cognitive, distraction, social interaction, and aggression. Scales were devised on a theoretical basis, not factor analytic studies, so Chronbach's alpha was calculated for each to assess the reliability of scales. Poor internal consistency was found for the four items describing social interaction strategies (Chronbach's alpha = .43) and the twelve items describing distraction items (Chronbach's alpha = .64). However, high internal

Table 3

Mean Scores of ARSC Items and t-values for the Self-harm and Control Group (Arranged in Rank Order for the Control Group).

Item	Control (N = 20) M	SD	Self -harm (N = 20) M	SD	t – value
Sport	**15.70**	7.66	**7.48**	7.44	3.45**
Try to relax	**12.25**	7.42	**6.75**	7.05	2.40*
Joke with friends	**12.25**	7.72	**7.70**	8.33	1.79
Work hard	**11.65**	7.44	**9.42**	7.69	0.93
Try to think clearly	**11.40**	8.31	**5.95**	4.85	2.53*
Problem-solve	**10.95**	6.97	**6.80**	6.39	1.96
Do things with friends	**10.55**	6.37	**6.55**	6.50	1.97
Be alone	**10.05**	7.67	**8.20**	6.85	0.80
Watch t.v.	**10.00**	6.18	**6.80**	6.11	1.65
Say 'ride it through'	**9.75**	8.67	**2.90**	3.91	3.22**
Think about other things	**9.65**	6.37	**7.75**	6.71	0.92
Think of prob. differently	**9.60**	6.56	**5.85**	4.80	2.34*
Relaxation technique	**9.40**	9.46	**5.15**	5.90	1.71
Say 'no use feeling this way'	**9.10**	5.74	**4.68**	5.70	2.45*
Take drugs	**8.50**	10.49	**9.60**	9.50	0.35
Stop getting stressed	**7.70**	6.37	**6.15**	5.88	0.80
Read	**6.20**	7.86	**3.85**	5.76	1.08
Get drunk	**5.35**	6.23	**7.85**	10.07	0.87
Talk about problems	**4.40**	5.20	**5.45**	7.80	0.50
Yell	**3.45**	5.43	**6.90**	8.53	1.53
Pray	**3.10**	6.54	**1.90**	4.44	0.68
Draw/paint	**2.60**	4.86	**5.85**	7.70	1.60
Get someone to help	**2.35**	2.35	**4.10**	4.15	1.64
Read Bible	**1.85**	4.61	**1.70**	4.17	0.11
Verbal abuse	**1.80**	2.19	**6.90**	9.28	2.39*
Cry	**1.65**	3.91	**4.15**	4.58	1.86
Slam doors	**1.60**	2.37	**5.22**	8.30	1.88
Hit people	**1.15**	1.60	**3.59**	5.06	2.05
Take it out on belongings	**0.70**	2.25	**3.60**	6.95	1.77
Throw things	**0.25**	0.55	**4.20**	7.19	2.45*
TOTAL	**6.83**	4.40	**5.76**	2.01	1.21

Note: Possible range of mean scores is 0 - 25, t-test values compare self-harm and control groups, * $p < .05$ ** $p < .01$.

consistency was found for the eight items describing cognitive strategies (Chronbach's alpha = .86) and the six describing aggressive strategies (Chronbach's alpha = .87). Scale scores for the latter two categories were compared between groups. A t-test for independent samples indicated that the control group rated cognitive strategies as significantly higher (M=10.05, SD=4.86) than the self-harm group (M=5.79, SD=3.78), t (38)=3.10, p = .004. Results were reversed for aggression strategies in that the self-harm group (M = 5.07, SD = 6.04) rated these strategies higher than the control group (M = 1.49, SD = 1.42). The t-test for independent samples adjusted for unequal variances was significant, t (21.1) = 2.58, p = .02. The Levene's test showed that there was greater variability in the self-harm group's ratings of aggression items, F = 16.68, p < .001. Whereas for the control group the highest mean score for the six aggression items was five, scores for nine of the participants in the self-harm group ranged between five and eighteen.

Discussion

The results from both measures of affect intensity, the AIM(M) and the global affect intensity scores, supported the hypothesis that prisoners with a history of self-harm generally experience more intense emotional responsiveness than their counterparts who have not engaged in self-harm. However, while prisoners with a history of self-harm had significantly higher scores on negative intensity and lack of serenity, and demonstrated a tendency for situational stressors to elicit more intense negative affect, the two groups did not differ in positive affectivity on the AIM(M). This suggests that intense experiences of negative affect and less serene experiences are pervasive in prisoners who have a history of self-harm compared to other prisoners, although these experiences are not coupled with significantly more intense experiences of positive affect. This also suggests that prisoners with a history of self-harm not only experience negative affect more intensely, but would tend to react emotionally more frequently and be more susceptible to physiological arousal compared to other prisoners (Larsen et al., 1986). The results of the present study therefore suggest that prisoners with a history of self-harm experience emotional lability as they respond to more life events with more intense negative affective experiences, with infrequent overall experiences of serenity and calmness. These results are consistent with Shea's (1993) research that compared MMPI scores from forensic patients who had engaged in self-harm with MMPI scores from control prisoners. The self-harm group scored higher on scales that indicated they experienced more feelings of distress and alienation, reflecting erratic emotional experiences.

An important implication of the results of the present study is that they provide a context for the interpretation of previous research. Individuals prone to self-harm appear to be also prone to experience intense negative affect that may reach intolerable levels in

response to particular stressors, thereby precipitating acts of self-harm. This is consistent with the conclusions drawn by Pattison and Kahan (1993). This high affect intensity can remain a salient factor, even though previous research has shown that intense affective levels decrease following an incident (e.g., Schmidtke & Shaller,1992; Schotte et al., 1990). Schmidtke and Schaller (1992), for example, found that state measures of depression, hopelessness, and anxiety in participants who had attempted suicide decreased significantly, and were equal in intensity to their control group, several weeks following the attempted suicide. The present study suggests, however, that these individuals may none-the-less have a propensity to experience intense negative affect thus increasing the likelihood of future self-harm incidents.

Individuals who experience high negative affect intensity should also experience acute and agitated affect if frequent situational stressors occur, resulting in less subjective well-being compared to individuals who do not experience high negative affect intensity (Larsen & Diener, 1987). Ivanoff and Jang (1991) demonstrated an association between negative situations, high levels of negative emotional states, and suicidal behaviour. They found that suicidal ideation and preoccupation with self-harm were mediated by previous and current situational stressors, such as a history of juvenile incarceration and having a long prison sentence imposed. These negative situations increased state levels of depression and hopelessness, that in turn affected suicidal factors. Although they suggested social desirability interacted with hopelessness to increase suicidal behaviour, the cognitive processes involved in social desirability were not clearly defined. Ivanoff and Jang's study highlighted the complex relationship between stressors, emotional experiences, and self-harm. However, the present study has examined whether affect intensity is a pervasive characteristic indicative of vulnerability to self-harm that has

greater utility than assessing social desirability. It might be, however, that a propensity to experience intense negative affect and less relaxation manifests itself in less efficient cognitive functioning overall, although this was not specifically assessed in the present study.

An additional factor that would seem to impinge on subjective well-being, however, concerns the use of effective affect regulation strategies. Results from the present study suggested that prisoners with a history of self-harm not only experience negative affective states more intensely, but responses to the ARSC demonstrated that they engaged in less efficient means of reducing intense negative affective states. Prisoners with no history of self-harm rated only some strategies on the ARSC quite high, such as engaging in sporting activities and trying to relax, suggesting that these prisoners tend to use a limited number of strategies, albeit efficiently. Prisoners with a history of self-harm, however, reported using a greater variety of strategies that had overall less utility compared to the control group. It seems that the self-harm group tended to attempt a variety of strategies but none were particularly useful. So, although intense negative affect associated with self-harm incidents decreases to normal levels in a matter of time, individuals vulnerable to self-harm appear to be less well equipped to deal with intense emotional states in a functional manner. This might be why self-harm becomes an option to decrease these aversive states, but might also be indicative of an overall pattern of harmful strategies used to reduce intense negative affect. This supposition is supported by previous research that has demonstrated factors symptomatic of poor subjective well being are prevalent in samples with a history of self-harm. Liebling (1992), for example, found that a reported history of drug and alcohol problems and psychiatric disorder were more prevalent among juveniles with a history of self-harm than among control group

prisoners. Further to this, drug and alcohol problems and psychiatric disorder have also been associated with completed prison suicides (e.g. Dooley, 1990) suggesting that symptoms indicative of poor subjective well being, perhaps also as a result of ineffective affect regulation, might be pervasive in suicidal processes generally.

Intense negative emotional responses are associated with cognitive processes that include overgeneralisation and personalisation in response to emotion eliciting stimuli (Larsen et al., 1987). These processes focus on the nature of the stimuli and are congruent with cognitive processes that occur prior to self-harm incidents (Pattison & Kahan, 1993), that involve an inability to divert attention from the negative situation and a desire to self-harm. This is also perhaps why prisoners who self-harm have been found to be more impulsive (Shea, 1993) in that intense affective states affect concentration and limit the ability to deliberate (Larsen & Diener, 1987). Previous research has further demonstrated that intense negative affective states in individuals who self-harm are also associated with poor interpersonal problem-solving skills (Schotte et al., 1990), rigid thinking, and field dependence (e.g., Scmidtke & Schaller, 1992). Focussing and elaborating on the emotive nature of stimuli might be more likely to occur in prisoners vulnerable to self-harm, rather than cognitive processes that are functional for regulating stress, such as reinterpreting or avoiding stressors that must be tolerated, or devising strategies to change the situation (Miller, 1992).

The pattern of regulating intense negative affect reported by prisoners in the present study also provides greater insight into previous research that has suggested prisoners who self-harm have problems coping. Toch (1992), for example, asserted that an ability to harness stress differentiated prisoners who had not engaged in self-harm and attempted suicide. Survival within prison was determined by ability to engage strategies

such as utilising supports, taking a detached stance, and shutting off negative affect. The present study, however, suggests that the more critical skills involve strategies that utilise cognitive processes to facilitate a reduction in intense negative affective states. Liebling's (1992) notion that poor problem-solving ability in response to negative situations propels prisoners into self-harm is also supported in the present study. It seems that once intense negative affect is experienced, prisoners who self-harm are limited in efficiently reducing negative affect, although a range of cognitive skills may be affected in addition to problem-solving. Strategies in the cognitive scale in the present study included focusing on reducing the affective state, tolerating the affective state, or reinterpreting or avoiding the stressor, as well as problem-solving, to reduce intense negative affect.

The present study has not determined whether the apparent deficiency in cognitive strategies in the self-harm sample is a result of the intensity of the negative affect experienced. A more intense experience may preclude cognitive strategies being engaged. Alternatively, when intense negative affect is experienced equally by both groups, those with a history of self-harm may not use cognitive strategies, perhaps because other strategies have been reinforced previously. It may even be that not using cognitive strategies results in a higher intensity of affect. Previous studies that have identified problems in cognition in individuals with active suicidal processes (e.g., Schotte et al., 1990; Schmidtke & Schaller, 1992), have not compared performance with control groups exhibiting equal levels of negative affect. Whether intense negative affect inhibits cognitive processes, or prisoners who self-harm have differences in their motivation or ability to use these strategies, is therefore worthy of further investigation. It might also be the case that when negative affect is at a very intense level, cognitive

processes are inhibited, but prisoners who do not self-harm are able to engage in functional activities. Most notably from the present study was the much higher rating of sporting activities by the control group as a means of decreasing negative affect.

The present study also revealed that there is a tendency for some prisoners with a history of self-harm to also engage in aggressive strategies to reduce intense negative affect compared to those with no history of self-harm. These results are consistent with previous research suggesting that individuals who self-harm were likely to engage in more acts of aggression directed towards objects and people (e.g., Hillbrand et al., 1994). However, results from the present study further suggest that these behaviours are functional for some prisoners who self-harm in that they effectively reduce intense negative affective states. Although this response was not uniform in the self-harm group, an important concern regarding this finding is that the use of aggressive strategies is likely to result in an increase in negative situational factors with adverse consequences, such as retaliation and punishment. These situations are likely to increase the number of intense negative affective experiences encountered, thereby decreasing subjective well being, and increasing the likelihood of future self-harm incidents. In this respect, it is not surprising that once individuals engage in self-harm, a pattern of multiple incidents is frequently initiated (e.g., Hillbrand et al., 1994; Morgan et al., 1976; Wanstall & Oei, 1989).

Results of the present study are consistent with previous reported psychological experiences associated with self-harm incidents (e.g., Pattison & Kahan, 1993: Wanstall & Oei, 1989), that include intense negative affective states experienced in conjunction with cognitive constriction, or an inability to cogitate on matters other than sources of distress and/or self-harm. The present study suggests that when prisoners with a history

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of self-harm experience intense negative affect, cognitive strategies are less likely to be utilised to reduce this aversive state compared to those with no history of self-harm. This tendency to not use functional cognitive strategies appears to be pervasive and not restricted to those incidents involving acts of self-harm.

These results support a transactional theory of self-harm that assumes that several factors related to a person's experiences and style of behaviour, in conjunction with environmental factors, determine risk of suicidal behaviour (Schmidtke & Schaller, 1992). A modification of the transactional theory tested by Schmidtke and Schaller is proposed in light of the present study. Schmidtke and Schaller's research did not support the assumption that individuals vulnerable to suicidal behaviour were predisposed to perceive the world as undifferentiated and inarticulated, so when situational factors elicited negative affect the probability of suicidal behaviours increased. While problems in cognitive functioning were evident when negative affective states were intense, these dysfunctional processes were not present when affective states returned to normal levels. However, the results of the present study suggest that vulnerability to self-harm is associated with a predisposition to experience high negative affect intensity. It might be that it is the intensity of the negative affect that causes dysfunctional cognition when it occurs. Self-harm behaviour might develop through a learning process in which self-harm incidents are reinforced by positive consequences such as relief and attention from others when intense negative affective states are experienced. Further exploration is required, however, to investigate the relationship between cognitive processing when intense negative affect is experienced and self-destructive behaviour. Although intense emotional experiences are associated with elaboration of the emotional stimuli (Larsen et

al., 1987), the additional factors that play a role in the development of self-destructive behaviour from this experience are not clear.

Assessment, Intervention and Management Implications

The assessment of affect intensity and affect regulation might be useful for identifying individuals vulnerable to self-harm acts. To reduce the incidence of self-harm and suicide in custodial settings, this study suggests the employment of interventions and management strategies that specifically target prisoners assessed as high in negative affect intensity and with inefficient affect regulation. Administration of the AIM(M) and the ARSC are measures that might effectively detect prisoners vulnerable to self-harm. However, pending further research, these measures should be considered provisional.

While the present study suggests that affect intensity may be a useful factor in assessing risk of suicidal behaviour, it has failed to find that affect intensity is a uni-dimensional construct as proposed by Larsen and Diener (1987). Differences were found between the self-harm and control groups in their level of affect intensity for negative intensity and serenity but not positive affectivity and, accordingly, affect intensity as a construct requires further investigation. It could be that various other factors concerned with affect are more pertinent with respect to vulnerability to self-harm. One difficulty in the measurement of affect intensity, for example, concerns a possible confound between frequency and intensity. Measurement required the assessment of the frequency of intense affective experiences, hence being exposed to frequent negative experiences may have inadvertently affected individuals affect intensity score.

A prospective study of the predictive power and psychometric properties of these measures is required to confirm the structure of the AIM(M) and the ARSC using factor

analysis. While there is no particular reason to suspect that differences found between groups were the result of biases in sampling, additional research on the ability of these measures to correctly classify vulnerability in a larger sample of prisoners is desirable. The ARSC in particular would benefit from reviewing its structure. Although the present study failed to find the distraction and social interaction scales reliable, it could be that the multi-dimensional nature of these behaviours requires more detailed assessment. Social interaction in particular would seem to be important to continue investigating, as social withdrawal has been associated with self-harm behaviour (e.g., Wanstall & Oei, 1989).

Assessments conducted to identify prisoners vulnerable to self-harm should also include criminological and other demographic factors, such as the type of offence and sentencing, which might impact on an individual's subjective well-being, that is also determined by their level of affect intensity. These factors are pertinent to assess acute risk, as demonstrated by Ivanoff and Jang's (1991) research that suggested that current suicidal tendencies were mediated by various criminological experiences and their impact on hopelessness and depression. Prospective research, therefore, is required using a number of predictive factors to assess the ability of the measures in the present study to correctly classify prisoners who engage in suicidal behaviour. Classification analysis, such as logistical regression or discriminant function analysis, is required with classification tables to assess the overall accuracy of the AIM(M) and the ARSC in identifying prisoners who engage in suicidal behaviour, and to ascertain the nature of any misclassification. Given the gravity of the consequences, the measures will have little utility if misclassification occurs for individuals who engage in suicidal behaviour,

compared to the categorisation of individuals as 'at risk' who do not engage in suicidal behaviour.

The association between the experience of intense negative affective states and subsequent acts of self-harm, or other dysfunctional behaviour, can be addressed in clinical interventions by replacing the undesirable behaviour with an alternative behaviour that reduces this aversive state (e.g., Shearin & Linehan, 1994). Prisoners who self-harm might experience characteristically intense negative emotional responsiveness and less experience of serenity because of a physiological predisposition to under-arousal. The experience of intense emotional responsiveness therefore facilitates the achievement of arousal at base-line levels (Larsen & Diener, 1987). However, self-harm might have emerged through learning (e.g., Wanstall & Oei, 1989) as a means of attaining positive consequences to experiences of intense negative affect. Self-harm behaviour, however, might be replaced with other behaviour to regulate negative affect or achieve other desired consequences. In particular, the development of cognitive skills, anger management techniques, and promoting a repertoire of behaviours that reduce intense negative affect should reduce the incidence of self-harm. Results from the present study suggest, however, that an extensive repertoire of strategies to regulate affect is not crucial, but that a number of efficient strategies are required.

The present study suggests that it may be useful to educate staff who manage prisoners about affect intensity and the tendency of prisoners with a history of self-harm to experience intense negative affect and less serene, calm states. This knowledge might be useful for anticipating incidents of self-harm. Prisoners with high affect intensity might perceive events as more dramatic than others would expect them to, although it might not simply be during the initial reaction when management strategies are required.

Pervasive negative affective states surrounding stressors are experienced more intensely by prisoners with a history of self-harm compared to other prisoners, and might play an integral role in precipitating self-harm incidents. Furthermore, prisoners vulnerable to self-harm may become more easily aroused and experience more mood variability (Larsen et al., 1986). This suggests that appropriate support provided to vulnerable prisoners when intense negative affective states are observed, particularly as their repertoire of functional affect regulation strategies may be limited, may reduce incidents. Staff also need to be aware that aggressive behaviour might be used by vulnerable prisoners as a means of regulating negative affect, so training in conflict resolution strategies might facilitate management.

Results of the present study also suggest that when prisoners who are at risk of self-harm have limited or no access to activities that regulate affect, such as when placed in solitary confinement, they might not have the ability to reduce intense negative affect, thus increasing the probability of a self-harm incident. This phenomenon was described by Bach-y-Rita (1974) who observed that in a sample of prisoners with a history of violence, self-harm was more likely to be enacted when external controls evoked frustration. This emphasises the importance of prison managers ensuring that appropriate measures are undertaken to prevent intense negative affective experiences or to intervene when they occur. Promoting professional practice by staff, such as consistency in enforcing prison regulations and providing predictable routines, might reduce sources of distress. Assisting prisoners when intense negative affective states are experienced, even by promoting physical exercise as an appropriate means of regulating affect, might also assist in reducing the incidence of self-harm.

Conclusion

The current study has suggested that tendencies to either experience intense affect or where intense affective experiences are not reduced, risk of suicidal behaviour is increased. Pending further research into validating measures of affect intensity and affect regulation, the present study proposes that awareness of the issues associated with these affective experiences will further assist clinical and correctional staff in reducing self-harm incidents in custodial settings.

References:

Bach-y-rita, G. (1974). Habitual violence and self-mutilation. American Journal of Psychiatry, 131, 1018 – 1020.

Backett, S. A. (1987). Suicide in Scottish prisons. British Journal of Psychiatry, 151, 218 – 221.

Beck, A. T. (1976). Cognitive Therapy and the Emotional Disorders. New York: International Universities Press.

Beck, A. T., Kovacs, M., & Weissman, A. (1979). Assessment of suicidal intention: The Scale for Suicidal Ideation. Journal of Consulting and Clinical Psychology, 47, 343 – 352.

Beck, A. T., Ward, C. H., & Mendelsohn, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. Archives of General Psychiatry, 4, 561 – 571.

Beck, A. T., Weissman, A., Lester, D., & Trexler, L. (1974). The measurement of pessimism. The Hopelessness Scale. Journal of Consulting and Clinical Psychology, 42, 861 - 865.

Biles, D., & McDonald, D. (1992). Deaths in Custody Australia, 1980 – 1989. Canberra: P. J. Grills, Commonwealth Government Printer.

Dooley, E. (1990). Prison suicide in England and Wales, 1972 - 1987. British Journal of Psychiatry, 156, 40 – 45.

Edwards, A. L. (1970). The measurement of personality traits by scales and inventories. New York: Holt, Rinehart & Winston.

Edwards, J. R., & Baglioni, A. J. (1993). The measurement of coping with stress: Construct validity of the Ways of Coping Checklist and the Cybernetic Coping Scale. Work and Stress, 7, 17 - 31.

Eysenk, N. J. & Eysenk, S. B. J. (1964). Manual of the Eysenk Personality Inventory. London: University of London Press.

Folkman, & Lazarus (1985). If it changes, it must be a process: A study of emotion and coping during three stages of a college examination. Journal of Personality and Social Psychology, 48, 150 – 170.

Hillbrand, M., Krystal, J. H., Sharpe, K. S., & Foster, H. G. (1994). Clinical predictors of self-mutilation in hospitalized forensic patients. The Journal of Nervous and Mental Disease, 182, 9 - 13.

Ivanoff, A., & Jang, S. J. (1991). The role of hopelessness and social desirability in predicting suicidal behavior: A study of prison inmates. Journal of Consulting and Clinical Psychology, 59, 394 – 399.

Ivanoff, A., Smyth, N. J., Grochowski, S., Jang, S. J., & Klein, K. E. (1992). Problem-solving and suicidality among prison inmates: another look at state versus trait. Journal of Consulting and Clinical Psychology, 60, 970 – 973.

Larsen, R.J., & Diener, E. (1987). Affect intensity as an individual difference characteristic: A review. Journal of Research in Personality, 21, 1 - 39.

Larsen, R. J., Diener, E., & Cropanzano, R. S. (1987). Cognitive operations associated with individual differences in affect intensity. Journal of Personality and Social Psychology, 53, 767 – 774.

Larsen, R. J., Diener, E., & Emmons, R. A. (1986). Affect intensity and reactions to daily life events. Journal of Personality and Social Psychology, 51, 803 – 814.

Liebling, A. (1992). Suicides in prisons. London: Routeledge.

Linehan, M. M., & Nielsen, S. L. (1981). Assessment of suicide ideation and parasuicide: Hopelessness and social desirability. Journal of Consulting and Clinical Psychology, 49, 773 – 775.

Mehrabian, A. (1979). Manual for the questionnaire measure of stimulus screening and arousability. (Available from Albert Mehrabian, Deparment of Psychology, University of California at Los Angeles, Los Angeles, California 90024.)

Miller, S. M. (1992). Individual differences in the coping process: What to know and when to know it. In B. Carpenter (Ed). Personal Coping Theory, Research, and Application. (pp. 77 – 91). Westport: Praeger.

Morgan, H. H., Barton, J., Pottle, S., Pocock, H., & Burns-Cox, C. J., (1976). Deliberate self-harm: A follow-up study of 279 patients. British Journal of Psychiatry, 128, 361 – 368.

Neuringer, C. (1961). Dichotomous evaluations in suicidal individuals. Journal of Consulting Psychology, 25, 445 – 449.

Parker, J. D., & Endler, N. S. (1992). Coping with coping assessment: A critical review. European Journal of Personality, 6, 321 - 344.

Pattison, E. M., & Kahan, J. (1993). The deliberate self-harm syndrome. American Journal of Psychiatry, 140, 867 – 872.

Platt, J., Spivack, G., & Bloom, W. (1975). Manual for the Means-Ends Problem-Solving Procedure (MEPS): A measure of interpersonal problem-solving skill. Philadelphia: Hahnemann Medical College and Hospital.

Sarason, I. G., Johnson, J. H., & Siegel, J. M. (1978). Assessing the impact of life changes: Development of the Life Experiences Survey. Journal of Consulting and Clinical Psychology, 46, 932 – 946.

Schmidtke, A., & Schaller, S. (1992). Covariation of cognitive styles and mood factors during crises. In P. Crepet, G. Ferrari, S. Platt, & M. Bellini (Eds). Suicidal Behaviour in Europe: Recent Research Findings. (pp. 225 – 233). Rome; John Libbey CIC srl

Schotte, D. E., Cools, J., & Payvar, S. (1990). Problem-solving deficits in suicidal patients: trait vulnerability or state phenomenon? . Journal of Consulting and Clinical Psychology, 58, 562 – 564.

Shea, S. J. (1993). Personality characteristics of self-mutilating male prisoners. Journal of Clinical Psychology, 49, 576 – 564.

Shearin, E. N., & Linehan, M. M. (1994). Dialectical behaviour therapy for borderline personality disorder: theoretical and empirical foundations. Acta Psychiatrica Scandinavica, 89, 61 – 68.

Shneidman, E. S. (1989). Approaches and commonalities of suicide. In R. Diekstra, R. Maris, S. Platt, A. Schmidtke, & G. Sonneck (Eds). Suicide and its Prevention. (pp14 – 36). Leiden: E. J. Brill.

Speilberger, C. D., Gorsuch, R. L., & Lushene, R. E. (1970). Manual for the State-Trait Anxiety Inventory. Palo Alto: Consulting Psychologists Press.

Topp, D. O., (1979). Suicide in prison. British Journal of Psychiatry, 134, 24 – 27.

Toch, H. (1992). Mosaic of Despair: Human Breakdowns in Prison. Washington: American Psychological Association.

Underwood, B., & Froming, W. J. (1980). The Mood Survey: A personality measure of happy and sad moods. Journal of Personality Assessment, 44, 404 – 414.

Van Egmond, M. V., & Diekstra, R. F. K. (1989). The predictability of suicidal behaviour. The results of a meta-analysis of published studies. In R. Diekstra, R. Maris, S. Platt, A. Schmidtke, & G. Sonneck (Eds). Suicide and its Prevention. (pp 37 - 61). Leiden: E. J. Brill.

Wanstall, K., & Oei, T. P. (1989). Delicate wrist-cutting behaviour in adult psychiatric patients: A review. Australian Psychologist, 24, 13 – 25.

Weinfurt, K. P., Bryant, F. B., & Yarnold, P. R. (1994). The factor structure of the Affect Intensity Measure: In search of a measurement model. Journal of Research in Personality, 28, 314 - 331.

Witkin, H. Oltman, P. K., Raskin, E., & Karp, S. A. (1971). A manual for the Embedded Figures Tests. Palo Alto: Consulting Psychologists Press

Yudofsky, S. C., Silver, J. M., Jackson, W., Endicott, J., & Williams, D. (1986). The Overt Aggression Scale for the objective rating of verbal and physical aggression. American Journal of Psychiatry, 143, 45 – 49.

Zuckerman, M. (1979). Sensation seeking: Beyond the optimal level of arousal. Hillsdale, NJ: Erlbaum.

APPENDICES

Appendix A –Measures Administered in the Main Study

Modified Affect Intensity Measure (AIM(M))

DIRECTIONS: The following statements describe emotional reactions to different situations. Please tell me whether these statements are generally true for you NOT AT ALL, HARDLY EVER, OCCASIONALLY, USUALLY, MOST OF THE TIME or ALL THE TIME.

NOT AT ALL	HARDLY EVER	OCCASIONALLY	OFTEN	MOST OF THE TIME	ALL THE TIME
0	1	2	3	4	5

1. When I'm fed-up, I feel really agitated. _____
2. When things go right, I feel fantastic. _____
3. When something happens that makes me look good, I feel really proud. _____
4. 'Laid-back' could easily describe me. _____
5. When I get angry, I still think straight and don't freak-out. _____
6. I get more stressed-out than most other people. _____
7. When I get nervous, I shake. _____
8. When I'm happy, I feel pepped-up and excited more than calm and content. _____
9. If someone stops me doing what I want to do, I feel really annoyed. _____
10. I tend to overreact to things. _____
11. I stay calm even on days where everything goes wrong. _____
12. People that let me down really get to me. _____
13. When I feel down, I get really upset. _____
14. I feel quietly satisfied when people tell me I've done well. _____
15. I feel really hyped-up when something exciting is going to happen. _____
16. Sad movies really get to me. _____

Global Affect Intensity Measure

On a scale from 1 – 10, do you think you're a person who reacts intensely to things, or do you have fairly mild reactions?

1	2	3	4	5	6	7	8	9	10
Mildly									Intensely

The Affect Regulation Strategy Check-list (ARSC)

DIRECTIONS: The following statements describe things you might do to make yourself feel better when you feel bad, like being depressed, stressed or angry. First state how often you use each technique with the scale that you used earlier: not at all, hardly ever, occasionally usually, most of the time, or all the time. Then state how good each technique is at making you feel better: useless, not much good, fair, good, very good, or excellent.

NOT AT ALL	HARDLY EVER	OCCASIONALLY	OFTEN	MOST OF THE TIME	ALL THE TIME
0	1	2	3	4	5

USELESS	NOT MUCH GOOD	FAIR	GOOD	VERY GOOD	EXCELLENT
0	1	2	3	4	5

	How often	How good
1. I tell myself that there's no use feeling this way	_____	_____
2. I stop myself before I get intensely stressed or depressed	_____	_____
3. I think about the situation in a different way so it doesn't seem so bad	_____	_____
4. Instead of worrying, I try and think about other things	_____	_____
5. I go somewhere to be alone	_____	_____
6. I read	_____	_____
7. I try and joke around with my friends	_____	_____
8. I cry	_____	_____
9. I go and work really hard	_____	_____
10. I do other things with my friends	_____	_____
11. I talk to friends about my problems	_____	_____
12. I do sporting activities	_____	_____
13. I go and do something like a drawing or a painting	_____	_____
14. I watch t.v	_____	_____
15. I try and work out a way to do something about the problem	_____	_____
16. I try to get someone else to help me do something about the problem	_____	_____
17. I concentrate on trying to think clearly	_____	_____
18. I concentrate on trying to relax	_____	_____
19. I use a relaxation technique	_____	_____
20. I take it out on my belongings	_____	_____
21. I verbally abuse other people	_____	_____
22. I hit other people	_____	_____
23. I get drunk	_____	_____
24. I take other drugs	_____	_____
25. I read a Bible	_____	_____
26. I pray	_____	_____
27. I yell	_____	_____
28. I tell myself to ride it through because it will pass	_____	_____
29. I slam doors	_____	_____
30. I throw things	_____	_____

Appendix B – Statistical Analyses

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Overall AIM(M)

Reliability Coefficients

N of Cases = 40.0 N of Items = 16

Alpha = .7957

Overall AIM(M)

t-tests for independent samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
AIM				
Non self harm	20	2.0781	.443	.099
Self harm	20	2.9688	.639	.143

Mean Difference = -.8906

Levene's Test for Equality of Variances: F= 1.389 P= .246

t-test for Equality of Means					95%
Variances	t-value	df	2-Tail Sig	SE of Diff	CI for Diff
Equal	-5.12	38	.000	.174	(-1.243, -.539)
Unequal	-5.12	33.83	.000	.174	(-1.244, -.537)

Analysis of Variance of AIM(M) subscales (positive affectivity, negative intensity, serenity, negative reactivity) between groups (self-harm and control)

Within-Subjects Factors

Measure: MEASURE_1

AIMCAT	Dependent Variable
1	NEGINT
2	NEGREACT
3	POSITIVE
4	SERENITY

Between-Subjects Factors

		Value Label	N
GROUP	0	Non self harm	20
	1	Self harm	20

Descriptive Statistics

	GROUP	Mean	Std. Deviation	N
NEGINT	Non self harm	1.3333	.5948	20
	Self harm	2.8833	.9599	20
	Total	2.1083	1.1123	40
NEGREACT	Non self harm	2.6000	1.1476	20
	Self harm	3.2833	1.1044	20
	Total	2.9417	1.1643	40
POSITIVE	Non self harm	3.3875	.7586	20
	Self harm	3.4313	.9385	20
	Total	3.4094	.8426	40
SERENITY	Non self harm	1.3000	.5609	20
	Self harm	2.2083	.9030	20
	Total	1.7542	.8730	40

Mauchly's Test of Sphericity[b]

Measure: MEASURE_1

Within Subjects Effect	Mauchly's W	Approx. Chi-Square	df	Sig.	Epsilon[a]		
					Greenhouse-Geisser	Huynh-Feldt	Lower-bound
AIMCAT	.694	13.440	5	.020	.852	.942	.333

Tests the null hypothesis that the error covariance matrix of the orthonormalized transformed dependent variables is proportional to an identity matrix.

a. May be used to adjust the degrees of freedom for the averaged tests of significance. Corrected tests are displayed in the layers (by default) of the Tests of Within Subjects Effects table.

b. Design: Intercept+GROUP
Within Subjects Design: AIMCAT

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		Type III Sum of Squares	df	Mean Square	F	Sig.	Eta Squared	Noncent. Parameter	Observed Power[a]
AIMCAT	Sphericity Assumed	68.812	3	22.937	33.440	.000	.468	100.319	1.000
	Greenhouse-Geisser	68.812	2.555	26.935	33.440	.000	.468	85.431	1.000
	Huynh-Feldt	68.812	2.827	24.344	33.440	.000	.468	94.522	1.000
	Lower-bound	68.812	1.000	68.812	33.440	.000	.468	33.440	1.000
AIMCAT * GROUP	Sphericity Assumed	11.597	3	3.866	5.636	.001	.129	16.907	.939
	Greenhouse-Geisser	11.597	2.555	4.539	5.636	.002	.129	14.398	.908
	Huynh-Feldt	11.597	2.827	4.103	5.636	.002	.129	15.930	.928
	Lower-bound	11.597	1.000	11.597	5.636	.023	.129	5.636	.638
Error(AIMCAT)	Sphericity Assumed	78.196	114	.686					
	Greenhouse-Geisser	78.196	97.082	.805					
	Huynh-Feldt	78.196	107.413	.728					
	Lower-bound	78.196	38.000	2.058					

a. Computed using alpha = .05

Levene's Test of Equality of Error Variances[a]

	F	df1	df2	Sig.
NEGINT	3.254	1	38	.079
NEGREACT	.267	1	38	.608
POSITIVE	3.212	1	38	.081
SERENITY	3.853	1	38	.057

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept+GROUP
Within Subjects Design: AIMCAT

Tests of Between-Subjects Effects

Measure: MEASURE_1
Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Eta Squared	Noncent. Parameter	Observed Power[a]
Intercept	1043.164	1	1043.164	914.112	.000	.960	914.112	1.000
GROUP	25.367	1	25.367	22.229	.000	.369	22.229	.996
Error	43.365	38	1.141					

a. Computed using alpha = .05

Estimated Marginal Means

1. GROUP

Measure: MEASURE_1

GROUP	Mean	Std. Error
Non self harm	2.1552	.119
Self harm	2.9516	.119

2. AIMCAT

Measure: MEASURE_1

AIMCAT	Mean	Std. Error
1	2.1083	.126
2	2.9417	.178
3	3.4094	.135
4	1.7542	.119

Box's Test of Equality of Covariance Matrices[a]

Box's M	16.270
F	1.441
df1	10
df2	6904
Sig.	.156

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept+GROUP
Within Subjects Design: AIMCAT

Multivariate Tests[c]

Effect		Value	F	Hypothesis df	Error df	Sig.	Eta Squared	Noncent. Parameter	Observed Power[a]
AIMCAT	Pillai's Trace	.699	27.919[b]	3.000	36.000	.000	.699	83.756	1.000
	Wilks' Lambda	.301	27.919[b]	3.000	36.000	.000	.699	83.756	1.000
	Hotelling's Trace	2.327	27.919[b]	3.000	36.000	.000	.699	83.756	1.000
	Roy's Largest Root	2.327	27.919[b]	3.000	36.000	.000	.699	83.756	1.000
AIMCAT * GROUP	Pillai's Trace	.398	7.942[b]	3.000	36.000	.000	.398	23.826	.982
	Wilks' Lambda	.602	7.942[b]	3.000	36.000	.000	.398	23.826	.982
	Hotelling's Trace	.662	7.942[b]	3.000	36.000	.000	.398	23.826	.982
	Roy's Largest Root	.662	7.942[b]	3.000	36.000	.000	.398	23.826	.982

a. Computed using alpha = .05

b. Exact statistic

c. Design: Intercept+GROUP
Within Subjects Design: AIMCAT

T-tests comparing groups on positive affectivity, negative intensity, serenity, and negative reactivity on the AIM(M), and participants' means ARSC scores

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Mean	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
POSITIVE	Equal variances assumed	3.212	.081	-.162	38	.872	-4.37E-02	.2698	-.5900	.5025
	Equal variances not assumed			-.162	36.401	.872	-4.37E-02	.2698	-.5908	.5033
SERENITY	Equal variances assumed	3.853	.057	-3.821	38	.000	-.9083	.2377	-1.3895	-.4271
	Equal variances not assumed			-3.821	31.762	.001	-.9083	.2377	-1.3927	-.4240
NEGINT	Equal variances assumed	3.254	.079	-6.139	38	.000	-1.5500	.2525	-2.0612	-1.0388
	Equal variances not assumed			-6.139	31.717	.000	-1.5500	.2525	-2.0645	-1.0355
NEGREACT	Equal variances assumed	.267	.608	-1.919	38	.063	-.6833	.3561	-1.4043	3.761E-02
	Equal variances not assumed			-1.919	37.944	.063	-.6833	.3561	-1.4043	3.765E-02
AIM	Equal variances assumed	1.389	.246	-5.123	38	.000	-.8906	.1739	-1.2426	-.5387
	Equal variances not assumed			-5.123	33.827	.000	-.8906	.1739	-1.2440	-.5372
COPE	Equal variances assumed	.153	.698	1.025	38	.312	.8637	.8424	-.8416	2.5691
	Equal variances not			1.025	37.980	.312	.8637	.8424	-.8416	2.5691

T-test comparing groups on global affect intensity scores

Variable	Number of Cases	Mean	SD	SE of Mean
GLOBAL				
Non self harm	20	4.4500	1.287	.288
Self harm	20	7.3750	2.206	.493

Mean Difference = -2.9250

Levene's Test for Equality of Variances: F= 8.115 P= .007

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	-5.12	38	.000	.571	(-4.081, -1.769)
Unequal	-5.12	30.59	.000	.571	(-4.090, -1.760)

T-test comparing groups on mean strategy scores on the ARSC

Variable	Number of Cases	Mean	SD	SE of Mean
STRATEGY				
control	30	6.8317	4.400	.803
self-harm	30	5.7597	2.010	.367

Mean Difference = 1.0720

Levene's Test for Equality of Variances: F= 35.439 P= .000

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	1.21	58	.230	.883	(-.696, 2.840)
Unequal	1.21	40.60	.232	.883	(-.712, 2.856)

T-tests comparing groups on scores for the thirty ARSC items.

Variable	Number of Cases	Mean	SD	SE of Mean
P1 Tell myself				
Non self harm	20	9.1000	5.739	1.283
Self harm	20	4.6750	5.695	1.273

Mean Difference = 4.4250

Levene's Test for Equality of Variances: F= .101 P= .753

	t-test for Equality of Means				95%
Variances	t-value	df	2-Tail Sig	SE of Diff	CI for Diff
Equal	2.45	38	.019	1.808	(.764, 8.086)
Unequal	2.45	38.00	.019	1.808	(.764, 8.086)

Variable	Number of Cases	Mean	SD	SE of Mean
P2 Stop myself				
Non self harm	20	7.7000	6.367	1.424
Self harm	20	6.1500	5.878	1.314

Mean Difference = 1.5500

Levene's Test for Equality of Variances: F= .585 P= .449

	t-test for Equality of Means				95%
Variances	t-value	df	2-Tail Sig	SE of Diff	CI for Diff
Equal	.80	38	.429	1.938	(-2.374, 5.474)
Unequal	.80	37.76	.429	1.938	(-2.374, 5.474)

t-tests for independent samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
P3 Think different				
Non self harm	20	9.6000	6.557	1.466
Self harm	20	5.3500	4.804	1.074

Mean Difference = 4.2500

Levene's Test for Equality of Variances: F= 1.559 P= .219

	t-test for Equality of Means				95%
Variances	t-value	df	2-Tail Sig	SE of Diff	CI for Diff
Equal	2.34	38	.025	1.818	(.570, 7.930)
Unequal	2.34	34.84	.025	1.818	(.559, 7.941)

Variable	Number of Cases	Mean	SD	SE of Mean
P4 Think other things				
Non self harm	20	9.6500	6.368	1.424
Self harm	20	7.7500	6.711	1.501

Mean Difference = 1.9000

Levene's Test for Equality of Variances: F= .140 P= .711

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	.92	38	.364	2.069	(-2.289, 6.089)
Unequal	.92	37.90	.364	2.069	(-2.289, 6.089)

t-tests for independent samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
P5 Be alone				
Non self harm	20	10.0500	7.674	1.716
Self harm	20	8.2000	6.849	1.531

Mean Difference = 1.8500

Levene's Test for Equality of Variances: F= .288 P= .594

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	.80	38	.426	2.300	(-2.807, 6.507)
Unequal	.80	37.52	.426	2.300	(-2.807, 6.507)

Variable	Number of Cases	Mean	SD	SE of Mean
P6 Read				
Non self harm	20	6.2000	7.865	1.759
Self harm	20	3.8500	5.761	1.288

Mean Difference = 2.3500

Levene's Test for Equality of Variances: F= .660 P= .422

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	1.08	38	.288	2.180	(-2.064, 6.764)
Unequal	1.08	34.83	.288	2.180	(-2.076, 6.776)

t-tests for independent samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
P7 Joke with friends				
Non self harm	20	12.2500	7.718	1.726
Self harm	20	7.7000	8.329	1.863

Mean Difference = 4.5500

Levene's Test for Equality of Variances: F= .361 P= .551

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	1.79	38	.081	2.539	(-.591, 9.691)
Unequal	1.79	37.78	.081	2.539	(-.591, 9.691)

Variable	Number of Cases	Mean	SD	SE of Mean
P8 Cry				
Non self harm	20	1.6500	3.911	.874
Self harm	20	4.1500	4.580	1.024

Mean Difference = -2.5000

Levene's Test for Equality of Variances: F= 1.484 P= .231

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	-1.86	38	.071	1.347	(-5.227, .227)
Unequal	-1.86	37.09	.071	1.347	(-5.229, .229)

t-tests for independent samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
P9 Work				
Non self harm	20	11.6500	7.443	1.664
Self harm	20	9.4250	7.690	1.720

Mean Difference = 2.2250

Levene's Test for Equality of Variances: F= .021 P= .884

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	.93	38	.358	2.393	(-2.621, 7.071)
Unequal	.93	37.96	.358	2.393	(-2.621, 7.071)

Variable	Number of Cases	Mean	SD	SE of Mean
P10 Things with friends				
Non self harm	20	10.5500	6.370	1.424
Self harm	20	6.5500	6.501	1.454

Mean Difference = 4.0000

Levene's Test for Equality of Variances: F= .046 P= .832

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	1.97	38	.057	2.035	(-.121, 8.121)
Unequal	1.97	37.98	.057	2.035	(-.121, 8.121)

t-tests for independent samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
P11 Talk friends				
Non self harm	20	4.4000	5.195	1.162
Self harm	20	5.4500	7.797	1.743

Mean Difference = -1.0500

Levene's Test for Equality of Variances: F= .417 P= .522

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	-.50	38	.619	2.095	(-5.292, 3.192)
Unequal	-.50	33.09	.620	2.095	(-5.313, 3.213)

Variable	Number of Cases	Mean	SD	SE of Mean
P12 Sport				
Non self harm	20	15.7000	7.658	1.712
Self harm	20	7.4750	7.440	1.664

Mean Difference = 8.2250

Levene's Test for Equality of Variances: F= .271 P= .605

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	3.45	38	.001	2.387	(3.391, 13.059)
Unequal	3.45	37.97	.001	2.387	(3.391, 13.059)

t-tests for independent samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
P13 Draw				
Non self harm	20	2.6000	4.860	1.087
Self harm	20	5.8500	7.700	1.722

Mean Difference = -3.2500

Levene's Test for Equality of Variances: F= 5.807 P= .021

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	-1.60	38	.119	2.036	(-7.373, .873)
Unequal	-1.60	32.07	.120	2.036	(-7.398, .898)

Variable	Number of Cases	Mean	SD	SE of Mean
P14 TV				
Non self harm	20	10.0000	6.181	1.382
Self harm	20	6.8000	6.110	1.366

Mean Difference = 3.2000

Levene's Test for Equality of Variances: F= .155 P= .696

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	1.65	38	.108	1.943	(-.735, 7.135)
Unequal	1.65	37.99	.108	1.943	(-.735, 7.135)

t-tests for independent samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
P15 Work it out				
Non self harm	20	10.9500	6.970	1.558
Self harm	20	6.8000	6.387	1.428

Mean Difference = 4.1500

Levene's Test for Equality of Variances: F= .157 P= .695

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	1.96	38	.057	2.114	(-.130, 8.430)
Unequal	1.96	37.71	.057	2.114	(-.130, 8.430)

Variable	Number of Cases	Mean	SD	SE of Mean
P16 Someone else				
Non self harm	20	2.3500	2.346	.525
Self harm	20	4.1000	4.154	.929

Mean Difference = -1.7500

Levene's Test for Equality of Variances: F= 5.700 P= .022

Variances	t-test for Equality of Means t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	-1.64	38	.109	1.067	(-3.910, .410)
Unequal	-1.64	30.00	.111	1.067	(-3.929, .429)

t-tests for independent samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
P17 Think clearly				
Non self harm	20	11.4000	8.306	1.857
Self harm	20	5.9500	4.850	1.085

Mean Difference = 5.4500

Levene's Test for Equality of Variances: F= 4.424 P= .042

Variances	t-test for Equality of Means t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	2.53	38	.016	2.151	(1.095, 9.805)
Unequal	2.53	30.61	.017	2.151	(1.063, 9.837)

Variable	Number of Cases	Mean	SD	SE of Mean
P18 Relax				
Non self harm	20	12.2500	7.419	1.659
Self harm	20	6.7500	7.048	1.576

Mean Difference = 5.5000

Levene's Test for Equality of Variances: F= .171 P= .681

Variances	t-test for Equality of Means t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	2.40	38	.021	2.288	(.867, 10.133)
Unequal	2.40	37.90	.021	2.288	(.867, 10.133)

t-tests for independent samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
P19 Relaxation				
Non self harm	20	9.4000	9.456	2.114
Self harm	20	5.1500	5.896	1.318

Mean Difference = 4.2500

Levene's Test for Equality of Variances: F= 7.692 P= .009

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	1.71	38	.096	2.492	(-.795, 9.295)
Unequal	1.71	31.84	.098	2.492	(-.827, 9.327)

Variable	Number of Cases	Mean	SD	SE of Mean
P20 Belongings				
Non self harm	20	.7000	2.250	.503
Self harm	20	3.6000	6.954	1.555

Mean Difference = -2.9000

Levene's Test for Equality of Variances: F= 8.418 P= .006

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	-1.77	38	.084	1.634	(-6.209, .409)
Unequal	-1.77	22.94	.089	1.634	(-6.282, .482)

t-tests for independent samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
P21 Verbal abuse				
Non self harm	20	1.8000	2.191	.490
Self harm	20	6.9000	9.277	2.074

Mean Difference = -5.1000

Levene's Test for Equality of Variances: F= 27.810 P= .000

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	-2.39	38	.022	2.132	(-9.416, -.784)
Unequal	-2.39	21.11	.026	2.132	(-9.534, -.666)

Variable	Number of Cases	Mean	SD	SE of Mean
P22 Hit people				
Non self harm	20	1.1500	1.599	.357
Self harm	20	3.5875	5.061	1.132

Mean Difference = -2.4375

Levene's Test for Equality of Variances: F= 10.314 P= .003

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	-2.05	38	.047	1.187	(-4.841, -.034)
Unequal	-2.05	22.75	.052	1.187	(-4.893, .018)

t-tests for independent samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
P23 Drunk				
Non self harm	20	5.3500	6.226	1.392
Self harm	20	7.6500	10.070	2.252

Mean Difference = -2.3000

Levene's Test for Equality of Variances: F= 9.242 P= .004

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	-.87	38	.390	2.647	(-7.660, 3.060)
Unequal	-.87	31.68	.391	2.647	(-7.694, 3.094)

Variable	Number of Cases	Mean	SD	SE of Mean
P24 Drugs				
Non self harm	20	8.5000	10.486	2.345
Self harm	20	9.6000	9.500	2.124

Mean Difference = -1.1000

Levene's Test for Equality of Variances: F= .690 P= .411

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	-.35	38	.730	3.164	(-7.506, 5.306)
Unequal	-.35	37.64	.730	3.164	(-7.506, 5.306)

t-tests for independent samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
P25 Bible				
Non self harm	20	1.8500	4.614	1.032
Self harm	20	1.7000	4.169	.932

Mean Difference = .1500

Levene's Test for Equality of Variances: F= .069 P= .794

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	.11	38	.915	1.391	(-2.666, 2.966)
Unequal	.11	37.61	.915	1.391	(-2.666, 2.966)

Variable	Number of Cases	Mean	SD	SE of Mean
P26 Pray				
Non self harm	20	3.1000	6.537	1.462
Self harm	20	1.9000	4.436	.992

Mean Difference = 1.2000

Levene's Test for Equality of Variances: F= 3.190 P= .082

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	.68	38	.501	1.766	(-2.377, 4.777)
Unequal	.68	33.44	.502	1.766	(-2.395, 4.795)

t-tests for independent samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
P27 Yell				
Non self harm	20	3.4500	5.434	1.215
Self harm	20	6.9000	8.534	1.908

Mean Difference = -3.4500

Levene's Test for Equality of Variances: F= 5.511 P= .024

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	-1.53	38	.136	2.262	(-8.031, 1.131)
Unequal	-1.53	32.23	.137	2.262	(-8.059, 1.159)

Variable	Number of Cases	Mean	SD	SE of Mean
P28 Ride it through				
Non self harm	20	9.7500	8.669	1.938
Self harm	20	2.9000	3.905	.873

Mean Difference = 6.8500

Levene's Test for Equality of Variances: F= 15.149 P= .000

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	3.22	38	.003	2.126	(2.545, 11.155)
Unequal	3.22	26.41	.003	2.126	(2.479, 11.221)

t-tests for independent samples of GROUP

Variable	Number of Cases	Mean	SD	SE of Mean
P29 Slam doors				
Non self harm	20	1.6000	2.371	.530
Self harm	20	5.2250	8.295	1.855

Mean Difference = -3.6250

Levene's Test for Equality of Variances: F= 19.296 P= .000

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	-1.88	38	.068	1.929	(-7.531, .281)
Unequal	-1.88	22.08	.073	1.929	(-7.627, .377)

Variable	Number of Cases	Mean	SD	SE of Mean
P30 Throw things				
Non self harm	20	.2500	.550	.123
Self harm	20	4.2000	7.186	1.607

Mean Difference = -3.9500

Levene's Test for Equality of Variances: F= 19.766 P= .000

t-test for Equality of Means Variances	t-value	df	2-Tail Sig	SE of Diff	95% CI for Diff
Equal	-2.45	38	.019	1.612	(-7.213, -.687)
Unequal	-2.45	19.22	.024	1.612	(-7.324, -.576)

Reliability scores for mean product scores (frequency x effectiveness scores) for interaction, distraction, cognition, and aggressive strategy scales on the ARSC

Interaction strategies - product items

Reliability Coefficients

N of Cases = 40.0 N of Items = 4

Alpha = .4304

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Distraction strategies - product

Reliability Coefficients

N of Cases = 40.0 N of Items = 10

Alpha = .5981

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

Cognitive strategies - Product

Reliability Coefficients

N of Cases = 40.0 N of Items = 8

Alpha = .8573

R E L I A B I L I T Y A N A L Y S I S - S C A L E (A L P H A)

aggressive strategies - product scores

Reliability Coefficients

N of Cases = 40.0 N of Items = 6

Alpha = .8732

t-tests for independent samples of GROUP

cognitive strategies - product

Variable	Number of Cases	Mean	SD	SE of Mean
MEANCOG				
Non self harm	20	10.0500	4.855	1.086
Self harm	20	5.7906	3.775	.844

Mean Difference = 4.2594

Levene's Test for Equality of Variances: F= 1.266 P= .268

	t-test for Equality of Means				95%
Variances	t-value	df	2-Tail Sig	SE of Diff	CI for Diff
Equal	3.10	38	.004	1.375	(1.475, 7.044)
Unequal	3.10	35.82	.004	1.375	(1.470, 7.049)

t-tests for independent samples of GROUP

Aggressive strategies - product mean scores

Variable	Number of Cases	Mean	SD	SE of Mean
MEANAGG				
Non self harm	20	1.4917	1.424	.318
Self harm	20	5.0688	6.042	1.351

Mean Difference = -3.5771

Levene's Test for Equality of Variances: F= 16.676 P= .000

	t-test for Equality of Means				95%
Variances	t-value	df	2-Tail Sig	SE of Diff	CI for Diff
Equal	-2.58	38	.014	1.388	(-6.388, -.767)
Unequal	-2.58	21.10	.018	1.388	(-6.464, -.690)