

## Summary

# The Role Of Emotion Regulation Difficulties And Coping Attitudes In Predicting The Functions Of Non-Suicidal Self Injury Among Male Prisoners

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Self-injurious behaviour is considered a significant mental health issue frequently encountered in the context of penal institutions (Dixon-Gordon et al., 2012). It is defined as an act where an individual causes injury to their own body without the intent of suicide, usually resulting in tissue damage, and is outside of social norms (Fulwiler et al., 1997; Klonsky et al., 2014; Winchel & Stanley, 1991). There are different forms of self-injurious behaviours. The most common is cutting oneself. This is frequently followed by behaviours such as burning oneself, hitting oneself and not allowing wounds to heal (R. Favazza, 1992). In recent years, the scientific community's interest in self-injurious behaviour has increased significantly. For the first time in 2013, the diagnostic criteria for self-injurious behaviour were determined by the American Psychiatric Association (American Psychiatric Association, 2013).

Many different models have been developed to explain NSSI. The "Four-Function Model" by Bentley, Nock, and Barlow (2014) explains non-suicidal self-injury (NSSI) by identifying underlying functional mechanisms. These functions fall into two categories: autonomous (intrapersonal) and social (interpersonal). Autonomous functions serve to either alleviate "negative" or enhance "positive" affective and cognitive states, encompassing emotion regulation, suicide prevention, distress labeling, self-punishment, and dissociation prevention. Social functions similarly aim to reduce "negative" or increase "positive" desired social situations, including boundary setting, interpersonal interaction, seeking revenge, excitement, peer bonding, resilience testing, autonomy demonstration, and self-care. This model sheds light on the multifaceted nature of NSSI and its underlying motivations, providing insights for intervention and prevention efforts (Bentley et al., 2014; Bentley et al., 2017; Bildik et al., 2012; Klonsky and Glenn, 2009).

Self-injurious behavior is a significant mental

health issue in correctional facilities and among inmates (Dixon-Gordon et al., 2012; Favril et al., 2020; Ricarte et al., 2022). Prison entry is highly stressful, and adapting to prison life is challenging, increasing the risk of mental health problems (Carcedo et al., 2008; Nurse et al., 2003; Senol-Durak & Gencoz, 2010; Watzke et al., 2006).

Research across various countries has revealed the prevalence of self-injurious behavior in correctional facilities (Eren et al., 2018; Maden, Chamberlain, & Gunn, 2000; Ricarte et al., 2022; Sakelliadis et al., 2010). In the Netherlands, common forms of self-injury in forensic settings include cutting, ingesting harmful substances, suffocation, hitting oneself, and punching walls (De Vogel & Verstegen, 2021). While the general population's annual self-injury rate is about 1%, it can range from 5-6% in men to 20-24% in women in prison populations (Hawton et al., 2014). Additionally, self-injurious behavior among inmates significantly increases suicide risk (Humber et al., 2013; Ricarte et al., 2022). Due to these reasons, it is important to address the relationship between self-injurious behavior and its functions in the context of prisons.

Incarcerated individuals are significantly influenced by various factors leading to self-injurious behaviour. The prison environment, coupled with factors like the shock of imprisonment and overcrowded cells, exacerbates this tendency (Dixon-Gordon et al., 2012; Shelton et al., 2017). Studies indicate that alcohol and drug addiction, impulsivity, depression, childhood trauma, and other personal factors further contribute to this behaviour (Dixon-Gordon et al., 2012). Therefore, it can be said that a specific risk for self-injurious behavior emerges as a result of the combination of prison environment characteristics and personal traits.

According to Nock's (2010) proposed model on how NSSI emerges, it is suggested that NSSI is used as a means to resolve negative emotional experiences or social situations. Various factors play a significant role

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in the onset of this behavior, forming components of a multifaceted model, with the primary initiator being an experience that induces stress and the inability to use an alternative emotion regulation and coping mechanism. NSSI, in this model, is viewed as a learned behavior that resolves emerging emotional and social stressors (Nock, 2010). NSSI serves as both an emotion regulation tool and a coping strategy. Within the framework of the Four-Function Model (Bentley et al., 2014), risk factors for NSSI include difficulties in emotion regulation, low stress tolerance, harmful coping mechanisms, and poor social skills, emphasizing the role of acquiring emotion regulation, coping, interpersonal, and problem-solving skills in treatment processes. Based on this, it is anticipated in this study that emotion regulation and coping variables align with the structures of the mentioned models and could have explanatory power regarding the functions of NSSI. Moreover, it is observed that in the literature, these variables are typically not concurrently considered when exploring the functions of NSSI in correctional settings.

Difficulty in emotion regulation, one of the variables of this study, refers to impairment in managing emotions (Shedler & Westen, 2004). This encompasses challenges in emotional awareness, clarity, and impulse control, as captured by the Difficulties in Emotion Regulation Scale (DERS). Emotion regulation skills are thought to develop early in life, influenced by caregiver relationships (Fraleigh et al., 2000). Additionally, perceived parental attention impacts these skills in adults (Tani et al., 2018). The ability to regulate emotions in individuals has the potential to change and develop in later years (Gross, 1998). Some studies have found that difficulties experienced in emotion regulation are related to self-injurious behaviour and its initiation and persistence (Gratz & Roemer, 2008). Notably, those with a self-injury history often face greater emotional challenges (Tuna, 2017). Studies on convicts indicate that emotion regulation issues are tied to anger control and personality disorders (Robertson et al., 2014; Glenn & Klonsky, 2009). Given that these variables are thought to be related to self-injurious behaviour in convicts and detainees (Miller & Fritzon, 2007), it is expected that difficulty in emotion regulation is related to self-injurious behaviour in the prison environment and could affect its functions.

Another variable addressed in our research to predict the functions of self-injurious behaviour is coping attitudes. Individuals use cognitive and behavioural efforts, known as “coping” or “stress coping,” to address stressors and environmental demands (Folkman, 1984). Coping attitudes usually categorize these efforts into problem-focused coping, which targets problem resolution and emotion-focused coping, managing emotional

distress (Lazarus & Folkman, 1984). In another model used in this study, coping attitudes are categorized into 13 and then 15 dimensions (Carver, Scheier, & Weintraub, 1989; Carver & Scheier, 1994). Later, these dimensions began to be categorized into three main classifications: problem-focused coping, emotion-focused coping, and dysfunctional coping (Greer, 2007; Kallasmaa & Pulver, 2000; Lyne & Roger, 2000). Problem-focused coping aims to solve the problem or make changes at the source of stress, while emotion-focused coping involves managing or reducing emotional distress related to or arising from the situation. Avoidant or dysfunctional coping attitudes represent coping behaviors that can exacerbate distress or inhibit the use of functional coping attitudes. In a study, it was found that in 75% of individuals exhibiting NSSI, the reported function was “managing stress” (Klonsky, 2007). Based on this, it can be inferred that individuals with functional coping attitudes may be less likely to resort to NSSI as a means of coping with stress. Research in correctional settings has also identified relationships between coping attitudes and NSSI, as well as other triggering variables (e.g., Anestis et al., 2013; Çaynak & Kutlu, 2016; Haines & Williams, 1997; Mandhouj et al., 2014; Mckeown et al., 2017).

While knowledge of self-injurious behaviour has grown since the 2000s, further research is needed, especially regarding protective factors and treatments (Aksoy & Ögel, 2003; Brereton, 2018). The behaviour is common in penal institutions but understudied, with limited exploration of the link between emotional regulation difficulties and coping attitudes. Given the scarce studies in Türkiye on this issue, our research provides significant data for the literature, considering the population and sample studied.

In summary, this study aimed to understand the predictive power of emotion regulation difficulties and coping attitudes on the functions of NSSI among male inmates in correctional facilities. The research questions addressed were whether inmates’ difficulties in emotion regulation predict the eliciting function of NSSI and whether inmates’ coping attitudes predict the eliciting function of NSSI. Based on previous findings, it was anticipated that both independent variables used in the study would have an impact on NSSI function scores and significantly predict this variable.

## Method

### Participants

Participants of the study were selected using simple random sampling from among the prisoners on execution in the Manisa-Akhisar Open (n=400) and T-Type Closed Penitentiary Institutions (n=1400) of the Minis-

try of Justice in Turkey. 314 prisoners participated into first application interview and 193 participants who were determined to have a history of self-injurious behavior during the application constituted the sample. The selected participants were brought from their wards to the education unit classes with their consent, with the help of execution and protection officers in the Closed Penal Institution, and data collection was carried out individually by the researcher in this context. In its final form, the sample group consisting of 188 convicted and detained participants are all male, with ages ranging from 18 to 60, and an average age of 31.77. 43.6% of the participants ( $n=82$ ) are graduates from secondary school, 25% ( $n=47$ ) from elementary school, and 22.9% ( $n=43$ ) are high school graduates. Four individuals are illiterate, and three have graduated from university. When looking at the participants' past self-harm methods, cutting 50.5% of all self-harming behaviors, followed by hitting and banging oneself at a rate of 39.8%.

### Measures

In the study, the data collection tools used were the Informed Consent Form, Demographic Information Form, Inventory of Statements About Self-Injury (ISAS), Difficulties in Emotion Regulation Scale (DERS), and the Coping Orientation to Problems Experienced Scale (COPE).

Inventory of Statements About Self-Injury (ISAS) was developed by Klonsky and Glenn (2009). The first section of the two-part inventory examines whether 12 types of self-injurious behaviours have occurred before, and if so, how many times ( $\alpha=0.84$ ) (Bildik et al., 2012). The second section of ISAS, consisting of 39 questions, explores the social and autonomous functions of self-injurious behaviour. Excellent internal consistency values have been found for both social and autonomous functions ( $\alpha=0.88$  and  $\alpha=0.80$ , respectively) (Klonsky & Glenn, 2009). The Turkish version of the inventory was developed by Bildik, Somer, Kabukçu, Başay et al. (2012), with the first section having an internal consistency coefficient of  $\alpha=0.79$ . The internal consistency coefficient for the second section was found to be  $\alpha=0.93$ . In this study, the internal consistency coefficient (Cronbach's alpha) for the total score of NSSI functions was found to be  $\alpha=0.80$ , while for the autonomous functions score, it was  $\alpha=0.83$ , and for the social functions score, it was  $\alpha=0.78$ .

The Difficulties in Emotion Regulation Scale (DERS) was developed by Gratz and Roemer (2004) to measure individuals' difficulties in emotion regulation. This self-report scale, composed of 36 items and utilizing a five-point Likert scale, has a Cronbach's Alpha

internal consistency coefficient of .93 in its original version, with all sub-dimensions having coefficients greater than .80 (Gratz & Roemer, 2004). The scale was adapted into Turkish by Rugancı and Gençöz ( $\alpha=.94$ ) (2010). In this study, the Cronbach's alpha coefficient for the total score of the scale was found to be 0.91, indicating high internal consistency.

Coping Orientation to Problems Experienced Inventory (COPE) was used to understand which stress-coping attitudes participants use to deal with stress-inducing events in the study. COPE is a scale developed to explore how individuals combat challenging events they encounter in daily life and the types of reactions they exhibit, consisting of 60 items and 15 sub-dimensions (Carver & Scheier, 1994). Many studies have found that problem-focused coping, emotion-focused coping, and avoidance coping form a suitable factor structure for this scale (Greer, 2007; Kallasmaa & Pulver, 2000; Lyne & Roger, 2000). This three-factor structure is also used in this study. The Turkish adaptation of COPE was conducted by Ağargün, Beşiroğlu, and Kiran in 2005, with a reliability coefficient of  $\alpha=.79$  (Ağargün et al., 2005). In this study, the Cronbach's alpha coefficient for the total score of the COPE scale was found to be  $\alpha=0.89$ . Specifically, the alpha coefficients for emotion-focused coping, problem-focused coping, and dysfunctional coping were  $\alpha=0.79$ ,  $\alpha=0.84$ , and  $\alpha=0.76$ , respectively, indicating good to acceptable levels of internal consistency.

### Analysis

The "SPSS 25.0 for Windows" package program was utilized to analyze research data. Among all participants, only those with a history of past self-injurious behaviour were included in the sample, and outliers were removed from the final sample by calculating the Mahalanobis distance.

Multiple linear regression analysis was utilized in the study since there is one dependent and two independent variables. Three distinct multiple linear regression analyses were conducted as the dependent variable consists of three dimensions that need to be assessed separately. A backward regression analysis was conducted to explain more variance with fewer variables. An independent variable that showed low impact was removed from the model in each step. Additionally, since COPE does not provide a single meaningful total score, its three dimensions were included in the analysis process separately.

### Results

#### Correlations between Variables

In our research, the correlation between the inde-

pendent variables generally aligns with the existing literature findings. A positive bivariate correlation is observed between the COPE - avoidance coping sub-factor scores and the social functions scores of self-injurious behaviour ( $r = .13$ ;  $p < .05$ ). Furthermore, there is also a positive bivariate correlation between the intrapersonal (autonomous) functions scores of self-injurious behaviour and the COPE - avoidance coping scores ( $r = .209$ ,  $p < .05$ ). Additionally, a noteworthy positive relationship has emerged between the intrapersonal functions scores of self-injurious behaviour and the scores indicating difficulties in emotion regulation ( $r = .296$ ,  $p < .05$ ). A positive bivariate correlation is observed between the total function scores of self-injurious behaviour and the avoidance coping scores ( $r = .220$ ,  $p < .05$ ). Lastly, a significant and positive relationship has emerged between the total function scores of self-injurious behaviour and the scores of emotion regulation difficulties ( $r = .244$ ,  $p < .05$ ).

#### **Predictive Levels of the Dependent Variable by Models Comprised of Independent Variables**

A multiple regression analysis was conducted to predict the social functions of self-injurious behaviour using four different models. The analysis results showed no significant variance explanation ( $p > .05$ ) in predicting social functions using variables of emotion-focused coping, problem-focused coping, avoidance coping, and emotion regulation difficulties. After excluding certain variables in steps two and three, no significant results were obtained. Although there was a positive correlation between avoidance coping scores and social functions of self-injurious behaviour ( $r = .13$ ,  $p < .05$ ), the variation was not significantly explained ( $p > .05$ ).

Multiple linear regression analysis with four different models was conducted to determine the extent to which independent variables predict the scores of intrapersonal functions of self-injurious behaviour. Upon reviewing these models, each significantly predicted the scores for the intrapersonal functions of self-injurious behaviour ( $p < .05$ ). The model consisting of scores for emotion-focused coping, problem-focused coping, avoidance coping, and emotional regulation difficulties significantly predicts the scores for the intrapersonal functions of self-injurious behaviour, explaining 10.2% of the total variance ( $F(4,182) = 5.165$ ,  $R^2 = .102$ ,  $p < .01$ ). The third model, composed of avoidance coping scores and emotional regulation difficulties scores, was able to explain 9.8% of the variance ( $F(2,184) = 9.967$ ,  $R^2 = .098$ ,  $p < .01$ ). In the fourth stage, the model consisted solely of emotional regulation difficulties scores. It was observed this variable alone explained 8.8% of the variance in the scores of intrapersonal functions of

self-injurious behaviour ( $F(1,185) = 17.796$ ,  $R^2 = .088$ ,  $\beta = .296$ ,  $p < .01$ ).

Using the backward elimination method in multiple linear regression analysis, low-impact independent variables were removed from the model at each step to predict the total functions scores of self-injurious behaviour. In the first stage, a model comprised of scores for emotion-focused coping, problem-focused coping, avoidance coping, and difficulties in emotion regulation significantly predicted total functions scores of self-injurious behaviour, explaining 8.3% of the total variance ( $F(4,182) = 4.123$ ,  $R^2 = .083$ ,  $p < .01$ ). In the second stage, problem-focused coping scores were removed from the model. The model with three remaining independent variables, significantly predicted total functions scores of self-injurious behaviour, accounting for 7.9% of variance in the dependent variable ( $F(3,183) = 5.257$ ,  $R^2 = .079$ ,  $p < .01$ ). The third-stage model included avoidance coping scores and difficulties in emotion regulation scores, explaining 7.8% of the variance ( $F(2,184) = 7.734$ ,  $R^2 = .078$ ,  $p < .01$ ).

When all data is considered, the social functions scores of self-injurious behaviour aren't predicted by any independent variables; autonomous function scores are predicted by a model using emotion regulation difficulties, emotion-focused, problem-focused, and avoidance coping scores, with the greatest impact coming from emotion regulation difficulties, which can predict this variable on its own. Total functions scores are predicted by a model using emotion regulation difficulties, emotion-focused, problem-focused, and avoidance coping scores, with the most significant model consisting of avoidance coping and emotion regulation difficulties scores.

#### **Discussion and Conclusion**

This study aims to determine the extent to which prisoners' emotion regulation difficulties and coping attitudes predict the functions of self-injurious behaviour. Furthermore, it seeks to provide a basis for developing future treatment approaches through these independent variables, which can be acquired and improved upon over time.

Following the analysis, it was found that no independent variable significantly predicts the interpersonal functions of self-injurious behaviour. However, a significant positive correlation was observed between avoidance coping scores and the interpersonal functions of self-injurious behaviour. It has been suggested that self-injurious behaviour could be a coping strategy used to connect with others (Yates, 2004). While avoidance-coping attitudes do not predict the social functions of self-injurious behaviour, the significant relationship

between the two variables might suggest that self-injurious behaviour functions as a form of avoidance coping.

After the analysis, it was observed that emotion regulation difficulties significantly predict the intrapersonal functions of self-injurious behaviour, with a significant positive relationship between the variables. However, avoidance coping attitudes didn't explain the variation in intrapersonal functions, even though a significant and positive correlation exists between the variables. Self-injurious behaviour, enacted due to intrapersonal functions, is expected to emerge when alternative and functional emotion regulation methods are unreachable. From this perspective, it was an anticipated result that individuals struggling with emotion regulation may resort to self-injurious behaviours as a means to regulate their emotions.

The research found that all models formed by the independent variables used significantly predicted the total function scores of self-injurious behaviour. Emotion regulation difficulties alone significantly predicted the total function scores of self-injurious behaviour; whereas, a positive correlation was observed between avoidance coping attitudes and the total function scores of self-injurious behaviour. The total function scores have a significant relationship with risky behaviours, as indicated by Oktan (2014). Considering this finding, having high total function scores for self-injurious behaviour is associated with the risk of engaging in self-injury again and having other psychological disorders. On the other hand, the presence of multiple functions for self-injurious behaviour in an individual increases the likelihood of repeating this behaviour.

In light of the research findings, it can be said that difficulties in emotion regulation are a risk factor for exhibiting self-injurious behaviour. When reviewing past studies, it is observed that the findings of this research support the findings in the literature. It has been found that difficulties in emotional regulation are associated with many psychological disorders and are particularly one of the underlying primary causes of borderline personality disorder (Tragesser et al., 2007). Self-injurious behaviour was seen as a symptom of borderline personality disorder until recent years (Klonsky et al., 2014). When this relationship is examined, the finding that difficulties in emotional regulation predict the total functions score has been an expected result.

### Recommendations

Based on the results of the research, some recommendations for researchers and practitioners are summarized below.

1. In Turkey, there is very little research in the con-
2. text of penal institutions related to self-injurious behaviour. It is believed that not only the functions of self-injurious behaviour but also the frequency of this behaviour based on age, gender, and some demographic variables, risk factors and protective factors of the behaviour, and interventions for self-injurious behaviour are some topics that need to be studied in penal institutions.
3. There is no scale in the literature that questions the frequency, recency, and severity of self-injurious behaviour. Developing scales that measure the intensity, diversity, methods used, and overall severity of self-injurious behaviour and can score this severity may provide a significant richness for future studies.
4. Developing preventive and therapeutic intervention methods based on emotional regulation difficulties and avoidant coping attitudes and testing their effectiveness can make a significant contribution to interventions for self-injurious behavior in the penal institutions.
5. Starting from the research findings, it is observed that a significant proportion of prisoners and detainees have previously displayed self-injurious behaviour. Therefore, it is recommended that all staff working in the penal institution context be trained about self-injurious behaviour and be informed about how to approach individuals who exhibit this behaviour.
6. In the context of penal institutions, it is believed that psycho-educational programs that will enhance emotion regulation skills and teach functional coping methods can reduce self-injurious behaviour.
7. Assessing whether prisoners experience difficulties in emotion regulation and whether they adopt avoidant coping attitudes can assist in determining the risk of self-injurious behaviour and training needs.
8. Group interventions and individual interventions are not methods that can be applied to everyone in inherently crowded environments. Therefore, in institutions with a high population, such as penal institutions and military barracks, it is important to apply practical intervention methods that can reach the entire mass to reduce self-injurious behaviour. For example, mindfulness practices can reduce difficulties in emotion regulation. Transforming this method, which is currently used in group studies organized by mental health professionals in penal institutions, into a weekly event for each ward, similar to sports hour, and being supported by institution staff, can make a significant difference.