Research Article

Psycho-Socio-Demographic Risk Factors of Self-injurious Behaviors in Iranian Females Inmates: A Case-Control Study

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Abstract

Background: Self-injurious behavior or self-harm among inmates is a common phenomenon. However, no study has yet been conducted in Iran regarding self-harm in female inmates.

Objectives: The present study aimed to investigate the psycho-socio-demographic risk factors associated with non-suicidal self-harm in Iranian female inmates.

Patients and Methods: Participants in this case-control study were 306 female inmates in Tehran, who were randomly selected and divided into two groups: (1) 88 individuals who scored 5 or higher on the Sansone Self-harm Inventory (SHI), and (2) 88 individuals randomly selected from the 218 inmates who did not self-harm as the comparison group. The participants completed a researcher-designed questionnaire, SHI, and the Difficulties in Emotion Regulation Scale. The data were analyzed using logistic regression analysis in SPSS version 16.

Results: Logistic regression analysis revealed that marital status (B = 1.438, P = 0.002), arrest history (B = 1.295, P = 0.005), substance abuse (B = 1.198, P = 0.011), psychiatric diagnoses (B = 1.126, P = 0.018), parental divorce (B = 1.280, P = 0.005), and difficulties in emotion regulation (B = 0.027, P = 0.022) were significant predictors of self-harm in inmates. Although there was a difference in the addiction rates of parents between those with self-harm and those without, this variable did not predict self-harm in female inmates (B = 0.488, P = 0.307).

Conclusions: The results of this study underscore the importance of family-based preventive interventions to prevent self-harm behaviors among female inmates.

Keywords: Females, Inmates, Self-injurious Behavior, Self-harm

1. Background

More than 11 million people are in prison worldwide (1). Inmates suffer from numerous health-related problems, such as chronic medical conditions (hypertension, persistent hepatitis, HIV infection) and symptoms of mental illness (mental disorders as defined in DSM-5). Moreover, the prevalence of these conditions in prisons is higher than in the general population, with more than half of incarcerated individuals experiencing symptoms of psychiatric disorders (2). For example, Ceylan, Hesapcioglu, Kasak, and Yavas (3) found that mental disorders are more common among juvenile inmates than their non-prison peers. Numerous studies have demonstrated the high prevalence of mental disorders among inmates (4, 5).

One of the significant health-related issues among incarcerated individuals is non-suicidal self-harm (NSSH). Non-suicidal self-harm is defined as any intentional behavior that causes harm to the body, is socially unacceptable, and may include actions such as cutting, burning, hitting the head or face, and even amputation (6). The annual rate of self-harm among female inmates is four to five times higher than that of male inmates. Overall, the rate of self-harm in female

inmates is more than ten times higher than in male inmates (7). According to a systematic review, about half of those who died by suicide in prison had a history of self-harm (8). Self-harming behavior also impacts other inmates and prison staff (9). Understanding the risk factors for non-suicidal self-harm can improve prevention efforts in this population.

Factors associated with self-harm in prison include current psychiatric diagnoses, current or recent suicidal ideation, experiences of sexual or physical victimization while incarcerated, and socio-demographic and criminological factors (10). Studies have shown that crimes related to drug use (11) and having more frequent arrest histories are linked to self-harm (12). The study by Ceylan, Hesapcioglu, Kasak, and Yavas (3) revealed that poor psychosocial conditions, family difficulties, non-suicidal self-injury, tattoos, and low parental education levels were common among adolescent inmates.

One of the most critical risk factors for non-suicidal self-harm is emotional dysregulation. Wolff et al. (2019) demonstrated that emotional dysregulation dimensions are associated with NSSH (13). Both theoretical and empirical work have identified NSSH as a consequence of poor emotional regulation (14) and ineffective strategies for managing affect (15). Understanding the factors that predispose individuals to engage in criminal behavior is essential for preventive interventions. To date, no study has investigated the risk factors for non-suicidal self-harm behavior among Iranian female inmates.

2. Objectives

The aim of the present study was to examine the psycho-socio-demographic risk factors related to non-suicidal self-harm in female inmates in Tehran.

3. Patients and Methods

3.1. Setting

The statistical population of the current research consisted of all female inmates in one of the prisons in Tehran Province in 2023. The design of this study was approved by the Ethics Committee of Islamic Azad University (Tehran Shomal Branch), with the ethics committee code: IR.IAU.TNB.REC.1403.004.

3.2. Study Design

This case-control study was conducted to explore psycho-socio-demographic risk factors among Iranian female inmates. First, the necessary permits were obtained from the Prisons Organization of the Islamic Republic of Iran. Then, one of the prisons in Tehran Province was selected for the research. By visiting various sections of the prison (mothers' section, theft section, drug section, and financial section), 306 inmates were randomly selected using the Krejcie and Morgan formula (16). It is important to note that no participants were selected from the section of inmates with acute psychiatric problems. The inclusion criteria for this research were as follows: No history of psychotic disorders, no use of psychiatric drugs during the research period, no acute physical diseases, at least a high school diploma, and an age range of 25 to 40 years. After providing necessary explanations about how to complete the research questionnaires, all subjects were asked to provide written consent to participate in the research. Subjects who declined participation were excluded.

The inmates were then asked to complete the Sansone Self-harm Inventory (SHI) (17). Among the 306 inmates who completed the SHI, 88 individuals who scored higher than 5 and met the inclusion criteria were selected. From the remaining participants who scored lower than 5, 88 individuals who also met the inclusion criteria were randomly selected as the comparison group.

3.3. Data Collection

In this study, we used three questionnaires:

3.3.1. Researcher-Designed Questionnaire

To collect the demographic data of the participants, a researcher-designed questionnaire was used, which included information such as age, marital status, history of arrest, history of mental disorders, substance abuse, parental addiction, and parents' divorce.

3.3.2. The Self-harm Inventory

The SHI was developed by Sansone, Wiederman, and Sansone (17) to assess deliberate self-harm. It is a 22-item questionnaire that evaluates the respondent's history of

self-harm behaviors, such as drug and alcohol abuse, cutting, and burning the body. The SHI has demonstrated good convergent validity with the diagnostic interview for borderlines (DIB) and the Personality Diagnostic Questionnaire-Revised (PDQ-R) (17). Various studies have confirmed the scale's good internal consistency (18-20). The Korean version of the SHI also showed good internal consistency (21). In the current study, the internal consistency of the items, as measured by Cronbach's alpha, was 0.77.

3.3.3. The Difficulties in Emotion Regulation Scale

This scale contains 36 items rated on a five-point Likert scale, ranging from 1 (almost never applies to me) to 5 (almost always applies to me). The minimum possible score is 36, and the maximum is 180. Factor analysis identifies six factors: Strategies, non-acceptance, awareness, impulse, goals, and clarity (22). In the study by Gratz and Roemer, the validity of this scale was deemed favorable, and its reliability was reported as 0.43 (22). In the current study, the internal consistency of the items, as measured by Cronbach's alpha, was 0.81.

3.4. Statistical Analysis

After data collection, statistical analysis was performed using SPSS 16 software. Multiple logistic regression analysis was conducted to assess the relationship between the studied variables (marital status, arrest history, substance abuse, psychiatric diagnoses, parental addiction, and parental divorce) and the likelihood of self-harm among inmates. Odds ratios (ORs) were calculated, adjusted for age, education, drug and alcohol abuse, and financial and economic conditions.

4. Results

The mean age of inmates with self-harm was 35.59 years (SD = 9.26), while the mean age of inmates without self-harm was 37.73 years (SD = 10.77). Other socio-demographic characteristics of the research participants are presented in Table 1.

The comparison of inmates with self-harm and those without self-harm in terms of socio-demographic features is presented in Table 2. There was a significant difference between the two groups concerning the variables of marital status (X^2 = 11.08, P < 0.001), arrest history (X^2 = 20.09, P < 0.001), substance abuse (X^2 = 31.03, P < 0.001), having psychiatric diagnoses (X^2 = 24.56, P < 0.001), parents' addiction (X^2 = 6.32, P < 0.01), and divorce of parents (X^2 = 20.79, P < 0.001). Logistic regression analysis was used to examine the variables that predict self-harm among inmates. The variables entered into the analysis were marital status, arrest history, substance abuse, having psychiatric diagnoses, parents' addiction, divorce of parents, difficulties in emotion regulation, and age. An enter method was employed in the analysis. According to the findings, marital status, arrest history, substance abuse, having psychiatric diagnoses, divorce of parents, and difficulties in emotion regulation were identified as risk factors for self-harm among inmates (Table 3). However, inmate age and parents' addiction were not significant predictors of self-harm.

5. Discussion

The results of this study showed that the history of mental disorders among inmates who engaged in self-harming behavior is higher than that of inmates without this behavior. This finding is consistent with previous research (3, 23). Psychotic spectrum disorders, mood disorders, and personality disorders increase the risk of suicide among deliberate self-harm patients, but the effect varies depending on gender, age, and history of previous self-harm (24).

Another result of the current research was a significant difference in drug use history between inmates with self-harming behavior and those without this behavior. This result aligns with other studies in this field (4). Individuals with a history of substance use and co-occurring mental illness are at greater risk of re-incarceration (25). Studies have also shown a relationship between personality disorders and inappropriate coping strategies that lead to incarceration (26).

The study also found that the divorce rate among the parents of inmates with self-harming behavior was higher than that of inmates without this behavior. In fact, 48.7% of the parents of these inmates were divorced or deceased, while only 51.3% of the parents were still living together (3). Parental conflicts are associated with antisocial behavior, which can lead to incarceration (27).

Table 1. Distribution of Alleged Crimes Committed by Inmate with and Without Self- harm [a]

Variables	Inmate with Self-harm	Inmate Without Self-harm
Theft	14 (15.9)	17 (23.9)
Illegal drug sale	12 (13.6)	30 (42.3)
Financial crimes	24 (27.3)	9 (12.7)
Other crimes	32 (36.4)	12 (16.9)
Not reported	6 (6.8)	3 (4.2)
Total	88 (100)	71 (100)

[a] Values are expressed as No. (%).

Table 2. Comparison of Socio-Demographic and Clinical Characteristics of the Inmate with Self-harm and Inmate Without Self-harm

Variables	Inmate with Self-harm; (n = 88)	Inmate Without Self-harm; (n = 71)	X^2	P-Values
Marital status			11.08	< 0.001
Single	58	28		
Married	30	43		
Arrest history			20.09	< 0.001
Yes	65	28		
No	22	43		
Substance abuse			31.03	< 0.001
Yes	65	21		
No	23	50		
Having psychiatric diagnoses			24.56	< 0.001
Yes	62	22		
No	26	49		
Parents addiction			6.32	< 0.012
Yes	56	31		
No	32	40		
Divorce of parents			20.79	< 0.001
Yes	58	21		
No	30	50		

Another finding was that inmates with a history of previous incarceration were more likely to exhibit self-harming behavior than those without this problem. One possible reason for recidivism among inmates is the presence of antisocial traits. According to the DSM-5, antisocial personality disorder is defined as "a pattern of disregard for and violation of the rights of others occurring from the age of 15 and characterized by three or more components: Failure to conform to social norms, deceitfulness, impulsivity, aggressiveness, disregard for the safety of self and others, consistent irresponsibility, and lack of remorse." The prevalence of this disorder ranges from 0.2% to 3.3% in the general population but can reach up to 70% in inmates and individuals with substance misuse issues (28). Several

studies suggest that antisocial personality disorder and psychopathy are associated with impulsivity (29), making individuals more prone to re-offending and engaging in dangerous behavior in the future (30).

Additionally, the research found a relationship between marriage and self-harming behavior among inmates. One possible explanation for this result is Hirschi's (2002) social control theory. According to this theory, individuals with limited social bonds are more likely to engage in criminal and delinquent behaviors. These bonds are defined by attachment, commitment, involvement, and belief. Previous research has shown that individuals who have been abused tend to have lower social bonds and are also more likely to offend (31, 32).

Table 3. Logistic Regression Analysis of Variables that Predict Committing Self-harm in Inmate

Variables	B	Adjusted OR [a]	P	CI
Marital status	1.438	4.212	0.002	1.685 - 10.525
Arrest history	1.295	3.652	0.005	1.487 - 8.968
Substance abuse	1.189	0.305	0.011	0.122 - 0.795
Having psychiatric diagnoses	1.126	0.324	0.018	0.127 - 0.826
Parents addiction	0.488	1.629	0.307	0.639 - 4.151
Divorce of parents	1.280	0.278	0.005	0.114 - 0.679
Difficulties in Emotion regulation	0.027	0.974	0.022	0.952 - 0.996
Age	0.012	0.607	1.012	0.968 - 1.057

Abbreviations: OR, odds ratio; CI, confidence interval.

[a] Adjusted for age, education, drug and alcohol abuse, financial and economic situation.

The results of this research showed no significant difference between the addiction rates of the parents of inmates with self-harming behavior and those without. This finding is not in line with the results of other studies. Sadock (33) reported that substance and alcohol abuse in parents increases the risk of developing conduct disorders in children. The small sample size and the cross-sectional nature of this research may explain this lack of discrepancy.

The results of the logistic regression analysis indicated that difficulty in emotional regulation can predict self-harm in female inmates. Youth with a history of self-harm reported more difficulties in emotion regulation compared to those who had never self-injured (34). In the absence of emotion regulation skills, self-harm is often used as a compensatory strategy to manage negative emotions. It may serve as a way to distract oneself from distress, regain a sense of control, or experience self-efficacy (35).

This study had several limitations. The small sample size was a key limitation, so generalizing the results to other groups should be done with caution. It is recommended to conduct similar research with larger samples. As the research method was descriptive, it is not possible to establish cause-and-effect relationships between the variables. Another limitation was the inability to classify inmates based on their psychiatric disorders due to the small sample size. Additionally, the SHI scale is a self-report tool, which may lead participants to either overstate or understate their condition. Future researchers are encouraged to use diagnostic interviews alongside questionnaires for a more accurate assessment.

A general limitation of using questionnaires in research is social desirability bias, where respondents may answer questions in a way that maintains or improves their social desirability. However, since the sample selection was randomized throughout the study, researcher bias was minimized.

Given the limitations of using questionnaires, it is recommended to incorporate other data collection methods, such as interviews, in future research.

5.1. Conclusions

The results of this study showed that marital status, arrest history, substance abuse, psychiatric diagnoses, parental addiction, divorce of parents, and difficulties in emotion regulation are significant risk factors for non-suicidal self-harm among Iranian female inmates. Regular monitoring of inmates for self-injurious behavior is essential, as this study helps identify and prioritize inmates at risk. To effectively treat mental disorders and prevent self-harm in female inmates, strong coordination between prison authorities and health centers is crucial.

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Footnotes

Authors' Contribution: Farokh Arjmandi was involved in the presentation of the research design, literature review and data collection. Mohsen Ahmadi Tahour was involved in data analysis, writing the manuscript and submitting it, Hossein Bigdeli was involved in revising the manuscript and making its corrections.

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Data Availability: The data presented in this study are uploaded during submission as a supplementary file and are openly available for readers upon request.

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