



# Depressive symptoms in a case series of incarcerated delinquent children and young adolescents with non-suicidal self-injury experience in Sulaymaniyah, Iraq

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## Original Article

### Abstract

**BACKGROUND:** The aim of this study was to investigate the prevalence of depression among incarcerated delinquent children and young adolescents with a history of non-suicidal self-injury (NSSI), as well as to identify the primary reasons for NSSI among these individuals in the city of Sulaymaniyah, Kurdistan Region, Iraq.

**METHODS:** This study was a case series and was conducted at one of the juvenile detention centers (JDCs) in the city of Sulaymaniyah in the year 2023. The study utilized a census approach and included 50 cases with a history of self-injury. The Birlerson Depression Self-Rating Scale (DSRS) was used to collect data related to depression, while a researcher-developed checklist was utilized to identify the primary reasons for NSSI. Independent t-tests were performed to compare mean depression scores across sociodemographic groups. The significance level in this study was set at  $P < 0.05$ . The analyses were conducted using Stata software.

**RESULTS:** The age of participants ranged from 13 to 17 years, with a mean age of 15.7 years. All participants in this study were boys. The mean depression score for all participants was 26.42 with a standard deviation (SD) of 6.38. Using a DSRS cutoff score of 15 points as a risk of depression, the scores of 92% of the subjects exceeded the cutoff. Among the variables examined, only a history of drug abuse showed a significant association with depression. The three main reasons, with the highest percentages, in descending order, were "To release emotional pressure that builds up inside of me" (75%), "To control how I am feeling" (66%), and "To get rid of intolerable emotions" (61%).

**CONCLUSION:** A high percentage of incarcerated delinquent children and young adolescent with NSSI have symptoms of depression, which should be given special and immediate attention by health policy makers. It is recommended that the findings of this study be used in designing psychological and educational programs and interventions to reduce NSSI among children and young adolescents.

**KEYWORDS:** Children; Adolescents; Depression; Non-Suicidal Self-Injury; Iraq

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### Introduction

Non-suicidal self-injury (NSSI) is the intentional act of causing harm to one's own

body without the intent of suicide.<sup>1</sup> This behavior is particularly prevalent among children and adolescents and has raised significant concerns.<sup>2</sup> Studies have indicated that the prevalence of NSSI among community adolescents is approximately 17.2%.<sup>3</sup> NSSI not only inflicts immediate physical pain and

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injury but also significantly increases the risk of future suicide attempts.<sup>3</sup> Given its high prevalence and associated risks, NSSI has become a noteworthy public health issue worldwide.<sup>4</sup>

NSSI is a deliberate and socially unacceptable behavior that individuals engage in as a way to cope with emotional distress.<sup>3</sup> It is important to distinguish NSSI from culturally accepted practices, like tattooing or body piercing, as the latter are not considered self-harm under this definition.<sup>5</sup> In children and teenagers, the primary aim of self-harm is often not suicide but rather to alleviate inner turmoil or seek attention through minor injuries. However, NSSI can become addictive and pose a serious risk of severe physical harm or even death. Additionally, NSSI is a strong predictor of future suicide attempts.<sup>6</sup> Furthermore, engaging in NSSI can hinder the development of healthy coping mechanisms, leading to feelings of guilt, depression, and exacerbation of underlying psychological issues.<sup>5</sup>

Regrettably, the treatment of NSSI can be quite challenging. However, by enhancing our comprehension of the underlying reasons why individuals engage in NSSI, we can potentially improve the effectiveness of treatment approaches for these individuals.<sup>7</sup> Various factors have been identified as associated with NSSI among children and adolescents. These include being girl, low self-esteem in girls, involvement in illegal drug use, smoking, experiences of bullying, living in a non-intact family structure, low socioeconomic status, and having knowledge of someone who has engaged in self-harm.<sup>8</sup> Longitudinal studies have also revealed that mental health problems such as anxiety, depression, high-risk alcohol consumption, cannabis use, and substance misuse are risk factors for the development of NSSI.<sup>9</sup> Protective factors, however, are not yet fully understood, although supportive and intact parental relationships have shown some positive influence. The etiology of NSSI

involves a range of social and psychological factors, including depression, disappointment, low stress tolerance, low self-esteem, dysfunctional family and community relationships, personal difficulties, a family history of psychiatric problems, peer influence, experiences of rape or abuse, drug abuse, and economic poverty.<sup>10</sup>

Children and young adolescents are part of sensitive and vulnerable groups, and depression among this age group can have detrimental consequences. Therefore, it is crucial to promptly identify and provide treatment for depression in these individuals.<sup>11</sup> Among children, those who have experienced NSSI, violence, street children, and children with a history of delinquency and substance abuse have a higher likelihood of experiencing mental disorders such as depression and anxiety.<sup>12</sup> These factors increase their susceptibility to mental health challenges and necessitate targeted interventions.<sup>13</sup> Depressive symptoms are prevalent among children and young adolescents in youth detention centers (YDCs), with a significant percentage of individuals experiencing moderate-to-severe levels of depression.<sup>21</sup> Studies have indicated that up to 47% of youth in these settings exhibit depressive symptoms and rates of affective disorder can range from 28% to 48%.<sup>14,15</sup> The impact of unrecognized and untreated depression on the trajectory of youth involved in the criminal justice system is substantial, as depression has been linked to increased rates of recidivism.<sup>14</sup>

The significant occurrence of depression among incarcerated children and adolescents highlights the necessity for a deeper understanding of the factors that contribute to depression within this vulnerable subgroup. Given the importance of the topic and the lack of information available, this study has two primary objectives. Firstly, it aims to determine the prevalence of depression among children and young adolescents with a history of NSSI

who have been referred to a juvenile detention center (JDC) in Sulaymaniyah, Kurdistan Region, Iraq, along with identifying associated factors. Secondly, the study seeks to identify the most common causes of NSSI among these children and young adolescents.

## Methods

This research was a case series conducted in 2023 on 50 children and young adolescence referred to a JDC with a history of NSSI in the city of Sulaymaniyah. The study was conducted as a census. JDC is a facility where children and adolescents under the age of 18 are held for committing crimes.

In this study, the standardized Birleson Depression Self-Rating Scale for Children (DSRS-C), consisting of 18 questions, was used to assess the depression status of children and young adolescence.<sup>16</sup> The DSRS-C measures the direction of disturbances felt in the past week, and respondents are asked to select one of the following options: "most of the time", "sometimes", or "never". The scale assigns scores of 2, 1, or 0 to the respective responses. The scores are summed to obtain a total score. Children who scored 15 and above on the DSRS-C were significantly more likely to have a depressive diagnosis (major depression or dysthymia).<sup>17</sup> The questionnaire was translated from English to Kurdish by a research team and reviewed by a panel consisting of three psychologists, one epidemiologist, and one statistics specialist. It was then completed by a sample of 15 individuals to assess its reliability using Cronbach's alpha. Cronbach's alpha was used to examine the internal consistency reliability of the depression measurement. The Cronbach's alpha for the Birleson Depression Self-Rating Scale (DSRS) was 0.815, indicating good internal reliability. Additionally, a checklist was designed based on literature review to identify the reasons for NSSI. Reasons selected by over 50% of the participants were reported as the main reasons

for NSSI. Furthermore, data related to variables such as age, education level, place of residence (urban or rural), living situation (both parents or others), history of drug use, experience of torture or violence, and the number of referrals to YDC were collected. The data for this study were collected through interviews conducted by psychologists with the referred children or adolescents at YDC. Verbal and written consent was obtained from all participants, and the study was carried out according to the ethical regulation established by Scientific Affairs and Postgraduate Studies of University of Sulaymaniyah, in accordance with the ethical principles of Declaration of Helsinki for medical research involving human subjects.

**Statistical analysis:** The study utilized descriptive, reliability, and inferential statistical analyses. Frequencies and percentages were calculated to describe the sample characteristics. Independent t-tests were performed to compare mean depression scores across sociodemographic groups. The analyses were conducted using Stata software (version 16, Stata Corporation, College Station, TX, USA).

## Results

The age of participants ranged from 13 to 17 years, with a mean age of 15.7 years. All participants in this study were boys. Among the participants, 24% were illiterate, 28% lived in rural areas, 16% had drug use experience, and 72% had violence or torture experience (Table 1).

The mean depression score for all participants was 26.42 with a standard deviation (SD) of 6.38. 92% of the participants had score more than 15 (percentile 8), 75% had score more than 23 (percentile 25), 50% and 75% had score more than 27 and 25, respectively (percentile 50 and 75, respectively). According to the P-values, there were no statistically significant differences in depression scores between age groups, education levels,

living arrangements, residency types, experience of violence/torture, or number of visits (all P-values > 0.05). However, adolescents who used drugs had a higher mean score of 29.37 compared to 25.86 for non-users, with a P-value of 0.049 (Table 2).

In this study, the main reasons for NSSI are presented in figure 1. By "main reasons", we refer to the reasons selected by more than 50% of the study participants as contributing factors to NSSI. The three main reasons, with the highest percentages, in descending order, were "To release emotional pressure that builds up inside of me" (75%), "To control how I am feeling" (66%), and "To get rid of intolerable emotions" (61%) (Figure 1).

### Discussion

In the present study, many of children and young adolescents showed significant levels of depressive symptoms. According to the findings of this study, more than 90% of the

studied subjects had symptoms of depression.

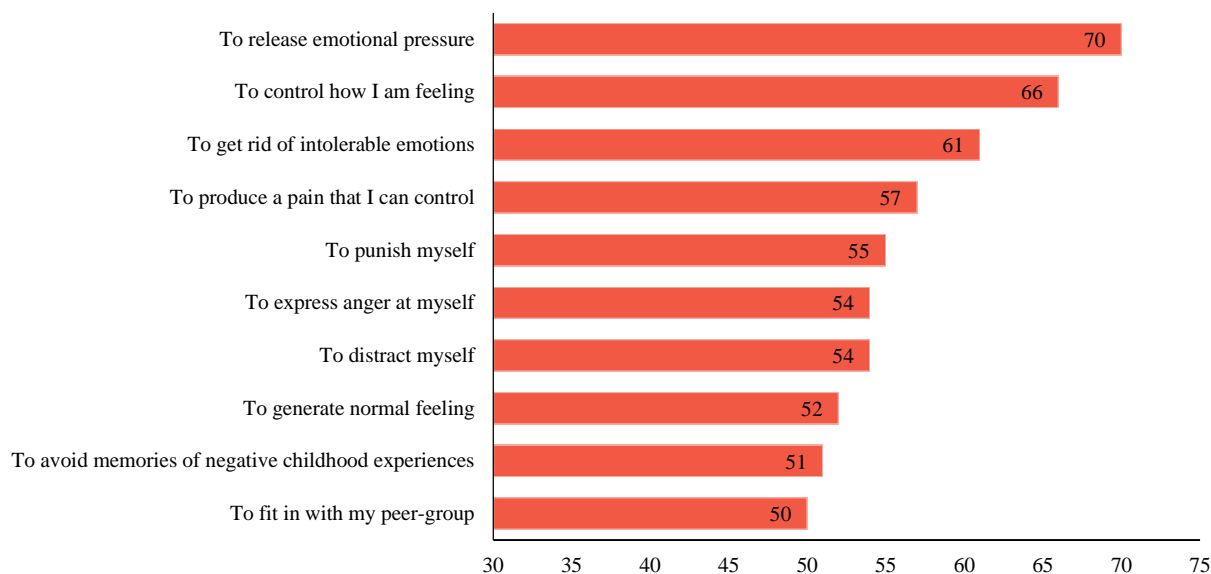
**Table 1. Demographic and background characteristics of study participants**

Variables	n (%)
Total	50 (100)
Age groups (year)	
13-15	15 (30)
16-17	35 (70)
Education	
Illiterate	12 (24)
Literate	38 (76)
Living status	
With parent	34 (68)
Other	16 (32)
Residency	
Urban	36 (72)
Rural	14 (28)
Drug use experience	
Yes	8 (16)
No	42 (84)
Violence or torture experience	
Yes	36 (72)
No	14 (28)
Number of referral to juvenile detention center	
1	35 (70)
> 2	15 (30)

**Table 2. Depression Self-Rating Scale (DSRS) scores and prevalence of depression risk according to demographic and background characteristics**

Variables	Mean ± SD	P	DSRS ≥ 15 [n (%)]
Total	26.42 ± 6.38		46 (92.00)
Age groups (year)			
13-15	27.33 ± 6.29	0.513	
16-18	26.03 ± 6.47		
Education			
Illiterate	28.58 ± 5.35	0.180	
Literate	25.74 ± 6.59		
Living status			
With parent	25.91 ± 5.56	0.417	
Other	27.50 ± 7.94		
Residency			
Urban	26.36 ± 6.59	0.917	
Rural	26.57 ± 6.02		
Drug use experience			
Yes	20.37 ± 4.43	0.049	
No	25.86 ± 6.59		
Violence or torture experience			
Yes	26.25 ± 7.16	0.766	
No	26.86 ± 3.88		
Number of referral to juvenile detention center			
1	25.40 ± 6.86	0.084	
> 2	28.80 ± 4.41		

SD: Standard deviation; DSRS: Depression Self-Rating Scale



**Figure 1. Main reasons for non-suicidal self-injury (NSSI) among study participants**  
(Note: One participant could choose more than one option)

Moreover, 75% had score more than 23 (percentile 25), and 50% and 75% had score more than 27 and 25, respectively (percentile 50 and 75, respectively). In terms of overall level of psychopathology in this delinquent sample, there were elevated levels of depressive symptoms and more frequent and varied substance use than has been reported on the basis of administering equivalent measures in general adolescent populations, consistent with other studies of incarcerated youth.<sup>14,15,18</sup> Regarding the overall level of psychopathology within this delinquent group, there were higher levels of depressive symptoms and a greater prevalence of substance use compared to what has been observed in general adolescent populations using equivalent measurement tools.<sup>18</sup> These findings align with previous studies conducted on incarcerated youth, which have consistently reported elevated levels of depressive symptoms.<sup>19</sup> In a systematic review and meta-analysis, the prevalence of severe depression among children and adolescents in Juvenile Detention and Correctional Facilities was reported to be more than 17%.<sup>20</sup> According to a

study conducted by McCarty et al., approximately 47% of youth in JDCs experience moderate to severe levels of depressive symptoms, with rates of affective disorder ranging from 28% to 48%.<sup>14</sup> In another study conducted by Kashani et al. in the United States of America (USA), the prevalence of depression was investigated among delinquent children and adolescents and non-delinquent children and adolescents, and its prevalence was reported as 18% and 4%, respectively.<sup>21</sup> According to a study conducted by da Silva et al., which focused on delinquent children and adolescents, out of the total participants, 28.00% demonstrated moderate to severe depressive symptoms, and 34.28% showed moderate to severe anxiety symptoms.<sup>22</sup>

Based on the findings of this study, among the variables examined, only a history of drug abuse showed a significant association with depression. Based on studies, it has been found that youth who engage in substance abuse are at a higher risk for various mental health problems compared to nonusers. These problems include depression, conduct problems, personality disorders, suicidal

thoughts, attempted suicide, and completed suicide. Children and adolescents with depression disorders have higher rates of substance use. According to a study conducted in Brazil among incarcerated delinquent children and adolescents, the prevalence of depression was found to be 28%, while the prevalence of substance abuse was approximately 90% (156 participants). However, no statistically significant correlation was observed between these two variables.<sup>21</sup>

In a study conducted by Klonsky, which focused on self-injury in young adults who engaged in cutting behavior, the primary reasons for NSSI were identified as "To release emotional pressure that builds up inside of me", "To control how I am feeling", "To get rid of intolerable emotions", and "To produce a pain that I can control".<sup>23</sup> These findings align with the results of the present study. Regrettably, the treatment of self-injury poses significant challenges, as highlighted by Muehlenkamp's study.<sup>24</sup> However, enhancing our understanding of the underlying reasons why individuals engage in self-injurious behavior holds the potential to improve treatment outcomes for these individuals. Various studies have provided evidence supporting several functions of self-injury, including its role in regulating negative emotions, self-punishment, influencing others, halting dissociative episodes, resisting suicidal urges, and seeking sensations.<sup>23,25</sup> By delving deeper into these functions, clinicians and researchers can develop more targeted and effective interventions to address the specific needs and motivations of individuals who engage in self-injury.<sup>24</sup>

This study has certain limitations that should be taken into consideration. The sample size is small, and the study was conducted only on male individuals. There is a limited number of demographic and

background variables studied, for example, data regarding the variable of type of self-harm were not collected. Another limitation of this study is that data collection relied on self-report measures, although efforts were made to minimize recall bias by shortening the recall period to two weeks in order to reduce retrospective bias. For future studies, it is suggested that a similar study be conducted with an adequate sample size among female individuals as well. This would help provide a comprehensive understanding of the subject by including both male and female populations.

### Conclusion

This study demonstrated a significantly high prevalence of depression among incarcerated delinquent children and adolescents with a history of NSSI, emphasizing the need for specialized attention and consideration by policymakers and healthcare authorities. Additionally, the findings revealed a considerable percentage of individuals who have experienced torture or violence, which warrants further investigation in future studies. Moreover, this study identified the primary reasons for NSSI among these individuals, suggesting the importance of integrating them into the planning and implementation of psychological and educational interventions.

### Conflict of Interests

Authors have no conflict of interests.

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