



Prevalence of Anxiety, Depression, and Trauma Among Male Prisoners in Sulaymaniyah Reformatory Center

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Abstract

Background: Prisoners often experience a higher prevalence of mental health disorders compared to the general population, including anxiety, depression, and trauma-related disorders. This study assesses the levels of psychological distress among male prisoners in Sulaymaniyah Reformatory Center, Iraq.

Objective: The study aimed to determine the prevalence of anxiety, depression, and post-traumatic stress disorder (PTSD) among male prisoners and to explore the associations between these disorders and socio-demographic factors, as well as the duration of detention.

Methods: An institution-based cross-sectional descriptive-analytic study was conducted in 2023. A total of 99 male prisoners were assessed using semi-structured interviews, which included the Hopkins Symptoms Checklist-25 (HSCL-25) for anxiety and depression, and the Harvard Trauma Questionnaire (HTQ) for PTSD. The data were analyzed using SPSS version 26.0, and Pearson's chi-square and ANOVA tests were applied to explore associations.

Results: Of the 99 prisoners assessed, 69% exhibited symptoms of anxiety, depression, and/or PTSD. The prevalence of anxiety was 94.1%, depression 95.6%, and PTSD 61.8%. No significant associations were found between age, education, and marital status with the mental health outcomes, though a significant association was observed between the duration of detention and the severity of anxiety symptoms.

Conclusion: The study found high levels of psychological distress among prisoners in Sulaymaniyah Reformatory Center, underlining the urgent need for mental health awareness and the establishment of early screening and treatment strategies in Iraqi prisons.

What is already known about the topic?

- Prison populations worldwide exhibit significantly higher rates of **mental health disorders**, particularly **anxiety, depression, and trauma-related conditions**, compared to the general population.

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Introduction:

Globally, the prison population is estimated to exceed 11 million, with Iraq having a rate of 179 individuals per 100,000 inhabitants (Helen and Walmsley, 2024). Among these individuals, mental health disorders are highly prevalent, with anxiety, depression, and post-traumatic stress disorder (PTSD) being particularly common. Research indicates that prisoners are at a higher risk of experiencing mental health issues, with some studies suggesting that the prevalence of such disorders can be five times higher in the prison population compared to the general public (Liu et al., 2021; Reta et al., 2020; Solomon et al., 2019). Factors contributing to this higher prevalence include both internal and external stressors, such as guilt, stigma, overcrowding, poor living conditions, and abuse by fellow inmates or prison staff (Mansor et al., 2015; Thekkumkara et al., 2022). While mental health problems may predate imprisonment, the stresses of incarceration often exacerbate existing conditions.

Despite the recognition of the mental health crisis within prisons, early detection and rehabilitation remain rare, especially in developing countries. Mental health screening is essential for identifying and addressing these issues early, and failure to do so can lead to severe consequences, including suicide (Martin et al., 2013; Steadman et al., 2025). Thus, understanding the scope of mental health issues among prisoners is crucial to improving prison healthcare systems and ensuring better outcomes for incarcerated individuals.

Aim:

The aim of this study is to assess the prevalence of anxiety, depression, and post-traumatic stress disorder (PTSD) among male prisoners in the Sulaymaniyah Adult Male Reformatory Center, Iraq, during the year 2023. Additionally, this study aims to explore the associations between these psychological distress symptoms and sociodemographic factors, such as age, marital status, education level, as well as the duration of detention. By providing insights into the mental health of prisoners, this study seeks to highlight the need for early screening and effective mental health interventions within Iraqi prisons.

Materials and Methods

Study Design

This study employed an institution-based cross-sectional descriptive-analytic design to assess the levels of psychological distress among male prisoners in the Sulaymaniyah Adult Male Reformatory Center in Iraq. The research was conducted in 2023, focusing on

the prevalence of anxiety, depression, and post-traumatic stress disorder (PTSD) among the prisoners. The study also aimed to identify the associations between these psychological conditions and certain socio-demographic factors, as well as the duration of detention.

Study Population

The study was conducted in the Sulaymaniyah Adult Male Reformatory Center, which houses male prisoners from the Sulaymaniyah governorate. A total of 99 male prisoners who sought mental health assessment from the team of Mental Health Counselors, working in collaboration with a national non-governmental organization, were included in the study. These prisoners were assessed based on their requests for mental health evaluations during the study period.

Sampling Method

A convenient sampling method was employed, where prisoners who voluntarily approached the team of counselors and requested an assessment for psychological conditions were included in the study. As part of this method, all 99 individuals who met the inclusion criteria were assessed for psychological distress.

Inclusion Criteria

The study included male prisoners whose cutoff scores on the assessment tools indicated symptoms of anxiety, depression, and/or post-traumatic stress disorder (PTSD). This criterion ensured that only prisoners showing signs of significant psychological distress were considered for the analysis.

Exclusion Criteria

Prisoners who refused to participate in the mental health assessment or who did not meet the diagnostic thresholds for anxiety, depression, or PTSD were excluded from the study.

Data Collection Tools

Data were collected using a semi-structured interview questionnaire that consisted of two sections:

1. **Socio-Demographic Characteristics:** The first section gathered demographic data, including age, marital status, educational background, and duration of detention.
2. **Mental Health Assessments:** The second section included standardized tools to assess the symptoms of anxiety, depression, and PTSD:

- Hopkins Symptoms Checklist-25 (HSCL-25): This tool assesses anxiety and depression symptoms. It consists of 25 items, with Part I focusing on 10 items for anxiety symptoms and Part II focusing on 15 items for depression symptoms. Each item is rated on a 4-point scale ranging from 1 (Not at all) to 4 (Extremely). A score greater than 1.75 indicates the presence of anxiety or depression.
- Harvard Trauma Questionnaire (HTQ): This tool assesses trauma-related symptoms and PTSD. It includes 16 items derived from the DSM-IV criteria for PTSD. Individuals with a score of 2.5 or higher are considered symptomatic.

Data Collection Process

The data collection was carried out by a team of trained mental health counselors from a national non-governmental organization working within the Sulaymaniyah Reformatory Center. The counselors conducted one-on-one semi-structured interviews with each prisoner who agreed to participate. During these interviews, the prisoners' socio-demographic details were collected, and they were then asked to complete the HSCL-25 and HTQ questionnaires. The counselors ensured that the prisoners understood the questions and provided a supportive environment to establish trust.

Statistical Analysis

The collected data were analyzed using the Statistical Package for Social Sciences (SPSS) version 26.0. The analysis included the following steps:

1. Descriptive Statistics: Frequencies and percentages were used to describe the socio-demographic characteristics of the participants. Means and standard deviations were calculated for the scores of the assessment tools (HSCL-25 and HTQ).
2. Association Analysis: Pearson's chi-square and ANOVA tests were used to examine the relationships between socio-demographic variables (such as age, marital status, education level, and duration of detention) and the levels of psychological distress (anxiety, depression, and PTSD). A p-value of less than 0.05 was considered statistically significant.

Ethical Considerations

The study received ethical approval from the Ethics Committee of Sulaimani Polytechnic University – College of Health and Medical Technology – Nursing Department. Informed consent was obtained from all participants, ensuring that they were aware of the study's purpose and their right to withdraw at any time without penalty. Confidentiality of

participants' data was maintained throughout the study, and the findings were reported in aggregate form to protect the anonymity of the prisoners.

Results

Socio-Demographic Characteristics

A total of 99 male prisoners participated in the study, with the age distribution ranging from 20 to 49 years. The majority of participants were in the age groups 20–24 years (26.5%) and 25–29 years (26.5%). The mean age of the participants was 30.54 ± 7.57 years. In terms of educational background, most prisoners (60.3%) had completed primary school, while 4.4% were illiterate and 5.9% had attended university. Regarding marital status, 45.6% of the participants were single, 38.2% were married, and 16.2% were divorced.

Prevalence of Anxiety, Depression, and PTSD

Out of the 99 prisoners assessed, 68 prisoners (69%) exhibited symptoms of anxiety, depression, and/or PTSD. The prevalence of each disorder was as follows:

- Anxiety: 94.1% (n=64) of the participants scored above the threshold of 1.75 for anxiety, making them symptomatic. The mean anxiety score was 2.38, with the highest reported score being 3.5. The most common anxiety symptom was "Feeling tense or keyed up," and the least common symptom was "Spells of terror or panic."
- Depression: 95.6% (n=65) of the participants scored above the threshold for depression, with a mean score of 2.66 and the highest score of 3.9. The most frequently reported depressive symptom was "Feeling no interest in things," while the least reported symptom was "Thoughts of ending your life."
- Post-Traumatic Stress Disorder (PTSD): 61.8% (n=42) of the prisoners exhibited PTSD symptoms, with a mean score of 2.59. The most common PTSD symptom was "Recurrent thoughts or memories of the most hurtful or terrifying events," and the least common symptom was "Thoughts of ending your life."

Comorbidity of Anxiety, Depression, and PTSD

Among the 68 symptomatic prisoners, 76.4% (n=52) had both anxiety and depression symptoms, while 57.3% (n=39) exhibited anxiety, depression, and PTSD symptoms.

Association Between Socio-Demographic Factors and Mental Health Disorders
No significant associations were found between the prisoners' age, educational status, or marital status with their total scores for anxiety, depression, or PTSD. However,

the duration of detention was found to have a significant association with anxiety scores. Anxiety symptoms were more prevalent among prisoners who had been incarcerated for a shorter duration, suggesting that the initial period of imprisonment may contribute more significantly to the development of anxiety symptoms.

These results underscore the high prevalence of psychological distress among prisoners in the Sulaymaniyah Adult Male Reformatory Center, highlighting the need for effective mental health screening and intervention strategies.

Table 1: Sociodemographic characteristics of the prisoners.

Variables	Categories	Frequency	Percent
Age-groups in years	20 – 24	18	26.5
	25 – 29	18	26.5
	30 – 34	13	19.1
	35 – 39	09	13.2
	≥ 40	10	14.7
Educational status	Illiterate	03	4.4
	Primary School	41	60.3
	Secondary School	11	16.2
	High School	09	13.2
	University (Institute or college)	04	5.9
Marital status	Single	31	45.6
	Married	26	38.2
	Divorced	11	16.2
Total		68	100.0

Table 2: Individual anxiety scores.

Symptoms	1		2		3		4		Mean
	F	%	F	%	F	%	F	%	
Suddenly scared for no reason	24	35.3	15	22.1	22	32.4	7	10.3	2.18
Feeling fearful	13	19.1	15	22.1	24	35.3	16	23.5	2.63
Faintness, dizziness or weakness	32	47.1	17	25	12	17.6	7	10.3	1.91
Nervousness or shakiness inside	10	14.7	14	20.6	23	33.8	21	30.9	2.81
Heart pounding or racing	19	27.9	21	30.9	19	27.9	9	13.2	2.26
Trembling	41	60.3	12	17.6	11	16.2	4	5.9	1.68
Feeling tense or keyed up	1	1.5	04	5.9	18	26.5	45	66.2	3.57
Headaches	27	39.7	17	25	13	19.1	11	16.2	2.12
Spells of terror or panic	44	64.7	16	23.5	7	10.3	1	1.5	1.49
Feeling restless/ can't sit still	7	10.3	10	14.7	16	23.5	35	51.5	3.16

Table 3: Individual depression scores.

Symptoms	1		2		3		4		Mean
	F	%	F	%	F	%	F	%	
Feeling low on energy	5	7.4	8	11.8	36	52.9	19	27.9	3.01
Blaming yourself for things	2	2.9	3	4.4	20	29.4	43	63.2	3.53
Crying easily	34	50	12	17.6	16	23.5	6	8.8	1.91
Loss of sexual interest or pleasure	20	29.4	16	23.5	25	36.8	7	10.3	2.28
Poor appetite	26	48.2	18	26.5	20	29.4	4	5.9	2.03
Difficulty falling asleep or staying asleep	3	4.4	7	10.3	21	30.9	37	54.4	3.35
Feeling hopeless about the future	20	29.4	10	14.7	19	27.9	19	27.9	2.54
Feeling blue	2	2.9	4	5.9	34	50	28	41.2	3.29
Feeling lonely	9	13.2	12	17.6	18	26.5	29	42.6	2.99
Thoughts of ending your life	63	92.6	3	4.4	1	1.5	1	1.5	1.12
Feeling of being trapped or caught	14	20.6	16	23.5	29	42.6	9	13.2	2.49
Worrying too much about things	3	4.4	10	14.7	23	33.8	32	47.1	3.24
Feeling no interest in things	12	17.6	13	19.1	24	35.3	19	27.9	2.74
Feeling everything is an effort	10	14.7	2	2.9	32	37.1	24	35.3	3.03
Feeling worthless	24	35.3	12	17.6	17	25	15	22.1	2.34

Table 4: Individual PTSD scores.

Symptoms	1		2		3		4		Mean
	F	%	F	%	F	%	F	%	
Recurrent thoughts or memories of the most hurtful or terrifying events	0	0	10	14.7	30	44.1	28	41.2	3.26
Feeling as though the event is happening again	16	23.5	12	17.6	23	33.8	17	25	2.6
Recurrent nightmares	7	10.3	21	30.9	27	39.7	13	19.1	2.68
Feeling detached or withdrawn from people	14	20.6	13	19.1	23	33.8	18	26.5	2.66
Unable to feel emotions	24	35.3	16	23.5	25	36.8	3	4.4	2.1
Feeling jumpy, easily startled	21	30.9	16	23.5	24	35.3	7	10.3	2.25
Difficulty concentrating	10	14.7	6	8.8	36	52.9	16	23.5	2.85
Trouble sleeping	7	10.3	4	5.9	21	30.9	36	52.9	3.26
Feeling on guard	22	32.4	16	23.5	22	32.4	8	11.8	2.24
Feeling irritable or having outbursts of anger	12	17.6	7	10.3	28	41.2	21	30.9	2.85
Avoiding activities that remind you of the traumatic or hurtful event	7	10.3	10	14.7	38	55.9	13	19.1	2.84
Inability to remember parts of the most traumatic or hurtful events	20	29.4	24	35.3	20	29.4	4	5.9	2.12
Less interest to daily activities	30	44.1	18	26.5	13	19.1	7	10.3	1.96
Feeling as if you don't have a future	18	26.5	16	23.5	18	26.5	16	23.5	2.47
Avoiding thoughts or feelings associated with the traumatic or hurtful experience	2	2.9	11	16.2	37	54.4	18	26.5	3.04
Sudden emotional or physical reaction when reminded of the most hurtful or traumatic events	16	23.5	17	25.0	33	48.5	2	2.9	2.31

Discussion

The prevalence of mental health disorders among prisoners varies significantly across different countries, with variations influenced by cultural, socioeconomic, and judicial factors, as well as the quality of prison infrastructure and healthcare services. Studies show that anxiety and depression are particularly common in prison populations worldwide, but estimates differ greatly depending on research methodology and screening tools used (Kastos et al., 2022). This study focused on the prevalence of anxiety, depression, and post-traumatic stress disorder (PTSD) among prisoners in the Sulaymaniyah Adult Male Reformatory Center in Iraq. The findings revealed that 69% of the prisoners exhibited symptoms of one or more of these disorders, a rate higher than the 42% reported in Iran (Welu et al., 2021), but lower than the 81% and 85% observed in India and Pakistan, respectively.

In a similar study conducted in two prisons in Baghdad, the prevalence of psychological distress was found to be 70% (Hussein et al., 2020), which aligns with the results of the present study. However, the rate of depressive symptoms in the current study (95.6%) was notably lower than the 82.5% prevalence found in Egyptian prisons (Reta et al., 2020). The difference may be due to variations in the screening tools used (e.g., the Egyptian study employed the SCL-90 tool) and the smaller sample size (n=80) in that study.

Further comparisons show that the prevalence of anxiety and depression in this study is lower than the 62.7% reported in a systematic review covering several prisons in Africa, Europe, and the United States (Figuerola & Proaño, 2022). Regarding PTSD, the prevalence found in this study (61.8%) is similar to the 68.4% observed in a sample of Turkish prisoners (Boysan et al., 2018). Consistent with findings from other settings (Facer-Irwin et al., 2019), this study found a strong correlation between PTSD, depression, and anxiety, with many prisoners experiencing multiple disorders simultaneously.

No significant associations were found between age, marital status, or educational level and the prevalence of mental health disorders in this study. These results contrast with studies in England (Butcher et al., 2021) and Poland (Stawinska-Witoszynska et al., 2021), which found that younger prisoners tend to have more severe mental health issues.

Similarly, while marital status and educational level did not show a significant relationship with mental health outcomes in the present study, contrary findings have been reported in studies conducted in Baghdad (Hussein et al., 2020) and Ethiopia (Reta et al., 2020), where marital status and education were associated with mental health outcomes. Interestingly, some studies from Ethiopia (Reta et al., 2020) suggest that higher levels of education are linked to greater depressive symptoms, potentially due to unmet expectations of treatment or respect. In contrast, studies in Addis Ababa (Solomon et al., 2019) indicated that lower education levels were associated with higher levels of psychological distress, possibly due to limited coping mechanisms.

The duration of detention was found to be significantly associated with anxiety, with new prisoners exhibiting more severe anxiety symptoms than those who had been incarcerated for longer periods. This finding aligns with studies in Baghdad and Iran (Hussein et al., 2020; Sepehrmanesh et al., 2014), suggesting that the stress associated with initial detention may be a critical factor in the onset of anxiety symptoms. However, this result differs from a study in Brazil (Costa et al., 2020), which found no such association.

Conclusions

This study highlights the high prevalence of anxiety, depression, and PTSD (69%) among prisoners in the Sulaymaniyah Adult Male Reformatory Center, which is consistent with international findings that show similarly elevated rates in prison populations. Given the shared facilities and administrative structures in the region, these findings may be applicable to other reformatories in the Kurdistan Region of Iraq and beyond. There is a clear need for enhanced mental health awareness and the implementation of early screening and treatment programs to address these prevalent mental health issues among prisoners.

Declaration Section

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Ethical Considerations

This study was approved by the Ethics Committee of Sulaimani Polytechnic University – College of Health and Medical Technology – Nursing Department.

Conflict of Interest

The author declares no conflicts of interest.

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No funding was received for this study.

Data Availability

The data generated during this study are available upon request by contacting the corresponding

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