

# Comparing Mental Disorder Symptoms Among Male and Female Prisoners

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## Abstract

**Background:** Several studies conducted around the world have reported a high prevalence of mental disorders among prisoners and suggest that some mental disorders are more prevalent among female prisoners compared to their male counterparts. However, a limited number of studies have been conducted to examine mental disorders among Iranian female prisoners and to compare their results with those of male prisoners.

**Objectives:** The main focus of this study was to compare mental disorder symptoms among male and female prisoners.

**Materials and Methods:** The statistical population of the current study included all male and female prisoners in Zahedan central prison. The sampling method was conducted such that a number of variables were evaluated, including prisoners' citizenship, marital status, home address, high level of supervision, and the type of crime committed. Among all prisoners, 275 individuals met the inclusion criteria to participate in this study. Therefore, to determine the sample size, Cochran's formula was used. Then, after applying a simple random method (i.e., sortation), 160 questionnaires were distributed to male and female prisoners. To collect data, the symptom checklist-90 was used.

**Results:** The results of the multivariate analysis of variance (MANOVA) indicated that symptoms of somatic complaints, depression, anxiety, aggression, and phobia were more prevalent among female prisoners compared to their male counterparts, and only symptoms of paranoid thoughts and psychosis were more prevalent among male prisoners compared to female prisoners ( $P \leq 0.01$ ). However, no significant difference was found among male and female prisoners with regard to obsession and interpersonal sensitivity ( $P \geq 0.05$ ).

**Conclusions:** Although the number of female prisoners is far less than that of male prisoners, the results of this study revealed that female prisoners suffer from more mental problems compared to male prisoners. Therefore, providing mental health services for this vulnerable population appears essential.

**Keywords:** Mental Disorder, Prisoners, Prison

## 1. Background

There are more than ten million prisoners living in prisons around the world, and nearly one million prisoners per decade are added to the world's prison population (1). Even in developed countries, the prison population has dramatically increased in recent decades, to the extent that the number of prisoners in the United States of America (US) which was 198,000 in 1971 had reached 1,600,000 in 2010. In addition, also in the US, the number of female prisoners rose from 6,300 in 1971 to 112,000 in 2010 (2).

The rate of mental health disorders among prisoners has consistently exceeded the rate in the general population (3). Several previously conducted studies have shown that the prevalence of mental disorders among prisoners is five to ten times more than in the general population,

such that, based on estimates, the prevalence of mental disorders among prisoners and in the general population is 80% and 31%, respectively (4). One in seven people passing through prisons worldwide suffers from a severe mental disorder (5).

Scientific evidence indicates that the prevalence of mental disorders among prisoners has been increasing over time (6). In a study carried out in France examining prisoners' mental disorders, the results demonstrated that the prevalence of schizophrenia among male prisoners was 17.9% to 24%, the prevalence of depression was 17.9% to 24%, and the prevalence of anxiety was 12% to 17.7% (7). Investigating the medical history of female prisoners showed that female prisoners, compared to their male counterparts, suffer more from mental disorders (8).

In another study conducted in England, which com-

pared mental disorders among male and female prisoners, the results revealed that the prevalence of symptoms of insanity among male and female prisoners was 2%. However, compared to male prisoners, females suffered from mental disabilities at a higher rate (6% versus 2%), personality disorders (18% versus 10%), mental disorders (18% versus 10%), and drug abuse (26% versus 12%) (9). Moreover, one out of every seven prisoners in Western countries suffers from mental illness and/or severe depression, which may lead to suicide, and one out of every two male prisoners and one out of every five female prisoners suffers from antisocial personality disorder (10).

Results of a study conducted in Australian prisons showed that the prevalence of mental disorders among female and male prisoners was 61% and 39%, respectively (11). Additionally, the findings of a study which examined mental disorders among Iranian prisoners revealed that 57.2% of Iranian male prisoners suffered from mood disorders, 29.1% and 17.8% of them suffered from severe and mild depression, respectively, and 7.7% of Iranian male prisoners suffered from anxiety disorders (12). A study carried out to investigate the prevalence of psychiatric disorders among male inmates in Qasr Prison in Tehran demonstrated that the prevalence of mood disorders, anxiety disorders, and adjustment disorders among prisoners was 30.7%, 7.7%, and 12.6%, respectively (13). Moreover, the results of a study carried out to examine the epidemiology of mental disorders in males in Adelabad Prison in Shiraz indicated that 75.1% of prisoners suffered from various types of mental disorders including mood disorders (41.9%), personality disorders (32.2%), anxiety disorders (8.1%), psychosomatic disorders (6.45%), and psychotic disorders and somatoform disorders (5.46%) (14).

The findings of another study examined the prevalence of personality disorders among female prisoners in Zahedan prison. They demonstrated that the most prevalent personality disorders were social personality disorder at 86.2%, drug dependence disorder at 60%, and sadistic-aggressive personality disorder, with a prevalence of 56.2% (15). In addition, a study conducted to investigate the prevalence of psychiatric disorders among prisoners in Sanandaj central prison showed that the prevalence of antisocial personality disorder among males was 45.9%. However, this prevalence was 16% among female prisoners, and the prevalence of borderline personality disorder among male and female prisoners was 14.2% and 8%, respectively (16).

The prevalence of mental illnesses among persons in prisons and jails has been well documented, as have concerns about the treatment and safety of this population (17). High rates of undetected mental disorders have been reported in male remand prisons. Little is known about

the levels of mental disorder that are undetected among female remand prisoners (18). Although several studies conducted around the world have examined and compared mental disorders among male and female prisoners, the number of Iranian studies carried out on the issue is very limited.

## 2. Objectives

The objective of the current study was to compare mental disorder symptoms among male and female prisoners in Zahedan central prison.

## 3. Materials and Methods

This descriptive study followed a casual comparative design. The statistical population of the current study included all male and female prisoners in Zahedan central prison. In this study, the simple random sampling method (i.e., sortation) was applied, such that after checking a number of variables including prisoners' citizenship (Iran), marital status (married), home address (native), high level of supervision (e.g., locked up in prison wards 24 hours a day for 7 days a week), and the type of crime committed (e.g., drug-related), among all male prisoners ( $N=3,460$ ) and female prisoners ( $N=111$ ), 275 prisoners met the inclusion criteria to participate in this study. Therefore, to determine the sample size, Cochran's formula was used, considering the following parameters ( $P=0.5$ ,  $q=0.5$ ,  $Z=1.96$ , and  $d=0.05$ ). Then, after using a simple random method (i.e., sortation), 80 questionnaires were distributed to male prisoners and 80 questionnaires were distributed to female prisoners.

### 3.1. Data Collection Tools

To collect data, the symptom checklist-90 (SCL-90) was used.

The symptom checklist-90 (SCL-90): The initial form of this scale was designed by Derogatis, Lipman, and Covi (1973) to indicate psychological aspects of physical and mental patients (19), and its final form was revised and developed by Derogatis, Rickels, and Rock (1976) (20). This short-answer checklist includes 90 five-point items (no = 0, a little = 1, some = 2, high = 3, extreme = 4) that assess nine dimensions, as follows: 1. somatic complaints (1-4-12-27-40-42-48-49-52-53-56-58), 2. obsession (3-9-10-28-38-45-46-51-55-65), 3. interpersonal sensitivity (6-21-34-37-41-61-69-73), 4. depression (5-14-20-22-26-29-30-31-32-54-71-79), 5. anxiety (2-17-23-33-39-57-72-78-80-86), 6. aggression (11-24-63-67-74-81), 7. phobia (13-25-47-50-70-75-82), 8. paranoid ideation (8-18-43-68-76-83), and 9. psychosis (7-16-35-62-77-84-85-87-88-90).

The first phase of scoring this scale provides a key to calculate the total score of each dimension. To this end, ten keys were developed for calculating nine dimensions of symptoms and additional questions.

In the second phase, the total score of a subject on each dimension was calculated and inserted into a table on an answer sheet used to record the subject's scores. To obtain the total score of each dimension, all numbers (other than zero) related to each dimension were added together. In the third phase, to calculate the mean of symptoms in each dimension, total scores of the subject in various dimensions of the scale (excluding additional questions) were divided by the number of questions related to each dimension (20).

#### 4. Results

In this study, the data was collected from 160 male and female prisoners whose descriptive information, including gender, age, criminal conviction history, and level of education, is presented in Table 1. The Wilks' lambda statistical indicator shows a statistically significant difference between these two groups of male and female prisoners in Zahedan central prison with regard to symptoms of mental disorder ( $F=10.425$ , Wilks' lambda = 0.615,  $P=0.00$ ) (Table 2). Moreover, the results of multivariate analysis of variance indicate a statistically significant difference between these two groups considering seven mental disorder symptoms (e.g., somatic complaints, depression, anxiety, aggression, phobia, paranoid thoughts, and psychosis), such that symptoms of somatic complaints, depression, anxiety, aggression, and phobia are more prevalent among female prisoners compared to their male counterparts. Only symptoms of paranoid thoughts and psychosis are more prevalent among male prisoners compared to female prisoners ( $P \leq 0.01$ ). However, no significant difference is found among male and female prisoners with regard to obsession and interpersonal sensitivity ( $P \geq 0.05$ ) (Table 3).

#### 5. Discussion

Prisons have become home to thousands of prisoners who are suffering from mental disorders and poor mental health (21). Suffering from poor physical and mental health is not uncommon among detainees and prisoners (22). Several studies have revealed the growing number of female prisoners (2) such that the prevalence of mental disorder symptoms was found to be higher among female prisoners than their male counterparts. The results obtained from this study indicated that symptoms of somatic complaints, depression, anxiety, aggression, and phobia

**Table 1.** Demographic Information of Male and Female Prisoners in Zahedan Central Prison, N = 160

Variables	No. (%)
<b>Gender</b>	
Male	80 (50)
Female	80 (50)
<b>Level of education</b>	
Illiterate	17 (10.6)
Elementary school	46 (28.7)
Middle school	54 (33.8)
High school	14 (8.8)
Diploma	29 (18.12)
<b>Criminal conviction history</b>	
Up to 2, y	43 (26.9)
3 - 4, y	73 (45.6)
5 - 6, y	19 (11.9)
More than 6, y	25 (25)
<b>Age</b>	
18 - 25, y	57 (35.62)
26 - 30, y	47 (29.37)
31 - 35, y	18 (11.25)
36 - 40, y	20 (12.5)
41 - 50, y	18 (11.25)

were more prevalent among female prisoners compared to their male counterparts, and only symptoms of paranoid thoughts and psychosis were more prevalent among male prisoners compared to female prisoners ( $P \leq 0.01$ ). However, no significant difference was found among male and female prisoners with regard to obsession and interpersonal sensitivity.

The results obtained from 109 studies carried out on 58,000 prisoners in 24 countries around the world indicate that the prevalence of psychosis among male and female prisoners is 3.6% and 3.9%, respectively, and this prevalence is higher in prisons located in low-income countries. Additionally, the prevalence of severe depression among male and female prisoners is 10.2% and 14.1%, respectively (1). The findings of a systematic study examining 62 previously conducted studies carried out in 12 countries to investigate severe mental disorders among male and female prisoners demonstrate that, among male prisoners, 3.7% suffer from mental illnesses, 10% suffer from severe depression, 65% suffer from at least one personality disorder, and 47% suffer from antisocial personality disorder. Additionally, among female prisoners, 4% suffer from mental illnesses,

**Table 2.** The Wilks' Lambda Statistical Indicator Related to Positive Psychological States in Both Male and Female Prisoners in Zahedan Central Prison

	Wilks' Lambda	F	Sig	Effect Size	Power
Groups	0.615	10.425	0.000	0.38	1.00

**Table 3.** The Results of Multivariate Analysis of Variance Related to Mental Disorder Symptoms in Male Versus Female Prisoners

Variable	Male Prisoners		Female Prisoners		Mean Square	df	Sum of Squares	F	Level of Significance	Effect Size
	Mean	SD	Mean	SD						
Somatic complaints	2/15	0/97	2/53	0/92	5/71	1	5/71	6/33	0/01	0/03
Obsession	2/15	0/99	2/38	1/04	2/18	1	2/18	2/11	0/14	0/01
Interpersonal sensitivity	2/04	1/11	2/31	0/97	2/96	1	2/96	2/70	0/10	0/01
Depression	2.04	1.08	2.70	0.99	17.65	1	17.65	16.21	0.00	0.09
Anxiety	2/09	1/09	2/49	1/02	6/40	1	6/40	5/68	0/01	0/03
Aggression	1.79	1.19	2.30	0.77	10.67	1	10.67	10.51	0.00	0.06
Phobia	1/50	1/15	1/87	1/12	5/57	1	5/57	4/27	0/04	0/02
Paranoid thoughts	2.40	1.07	1.94	0.98	8.40	1	8.40	7.88	0.00	0.04
Psychosis	2.18	1.28	1.67	0.94	10.25	1	10.25	8.09	0.00	0.04

12% suffer from severe depression, 42% suffer from at least one personality disorder, and 21% of female prisoners suffer from antisocial personality disorder.

However, incidences of psychosis and severe depression among prisoners are higher than what were mentioned in these studies. Prisoners are ten times more likely to suffer from antisocial personality disorder compared to the general population (10). Since 73% of female prisoners suffer from severe mental disorders, it can be concluded that there is a strong correlation between mental problems and committing crimes in females (2). In addition, the results of a study conducted to examine the prevalence of mental disorders among prisoners in the state of Sao Paulo in Brazil indicated some differences between lifetime and 12-month prevalence rates of mental disorders among male and female prisoners, such that lifetime and 12-month prevalence of any kind of mental disorder among female prisoners was 68.9% and 39.2%, respectively, and was 56.1% and 22.1%, respectively, among male prisoners. Moreover, lifetime and 12-month prevalence of anxious-phobic disorders among female prisoners was 50% and 27.7%, respectively, and 35.3% and 13.6%, respectively, among male prisoners.

In addition, lifetime and 12-month prevalence of affective disorders among female prisoners was 40% and 21%, respectively, and 20.8% and 9.9%, respectively, among male prisoners. Additionally, lifetime and 12-month prevalence of severe mental disorders (e.g., bipolar disorders and severe depression) among female prisoners was 25.8% and 14.7%, respectively, and 12.3% and 6.3%, respectively, among male prisoners (23). In a study conducted by Wolff, Morgan, Shi, Huening, and Fisher, the results indicated that the

prevalence of mental disorders among female and male prisoners was 46.1% and 19.8%, respectively; moreover, 6.6% of male prisoners and 19.4% of female prisoners in the study suffered from severe mental disorders (17).

The results of studies carried out in Iran reported a high prevalence of mental disorders among prisoners (12-16) such that 57.2% of Iranian male prisoners suffered from mood disorders, 29.1% and 17.8% of them suffered from severe and mild depression, respectively, and 7.7% of Iranian male prisoners suffered from anxiety disorders (12). The most prevalent personality disorders among Iranian female prisoners were adjustment disorders: 12.6% (13), social personality disorder: 86.2%, drug dependence disorder: 60%, and sadistic-aggressive personality disorder: 56.2% (15). The prevalence of antisocial personality disorder among Iranian male prisoners was 45.9%, while among female prisoners it was 16%. The prevalence of borderline personality disorder in male and female prisoners was 14.2% and 8%, respectively (16). Moreover, mental health problems are the most significant cause of morbidity in prisons.

### 5.1. Conclusion

The results of this study include several concepts. First, although the number of female prisoners is far less than male prisoners, some mental disorders, including somatic complaints, depression, anxiety, aggression, and phobia are more prevalent among female prisoners compared to their male counterparts. Second, the results show that prisoners, particularly female prisoners, have a serious need for treatment related to mental disorders. Therefore, given the high prevalence of mental disorders among

prisoners, especially female prisoners, and considering the fact that the studies conducted in Iran on the issue are very limited, conducting separate and repeated studies in prisons seems essential. Since a significant number of prisoners suffer from mental health problems (24), gaining knowledge related to mental disorders aimed at reducing them appears essential (25).

Over 90% of prisoners have a mental disorder. The prison environment and the rules and regimens governing daily life inside prison can be seriously detrimental to mental health (26). Thus, changes should be considered to prison policies and programs to rise motivation for better future in prisoners, creating positive changes in prisoners' attitude toward rules and regulations, social interactions, and communication, which can provide the ground work for major changes in prisoners' character.

### 5.2. Limitations

A main reason for lack of precise information on the prevalence of mental disorders among prisoners is that different studies applied various assessment methods. Moreover, the number of studies conducted on the prevalence of mental disorders among prisoners in Iran is very limited.

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### Footnote

**Authors' Contribution:** Study design, Muhammad Ali Fardin, Mahmoud Shirazi; data collection and analysis, Muhammad Ali Fardin, Mohammad Ali Mohammady Far; manuscript preparation, Muhammad Ali Fardin, Khaled Badpa.

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