

## Pattern of Psychiatric Morbidity and Substance Abuse among Iraqi Prisoners

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### Abstract

**Objective:** Mental disorders and substance abuse are one of the most frequent disorders in the world. Mental health of prisoner's is a major issue of public health.

**Methods:** This is a cross-sectional study carried at 3 prisons in Baghdad. All prisoners, both awaiting trial and sentenced prisoners, both gender were included, using stratified random sampling technique. Basic socio-demographic variables were collected using an information list filled during interview. Prisoners' mental state was checked by self-reporting questionnaires scale (SRQ-20). Positive SRQ-20 test prisoners were selected for administration of the DSM-IV Structured Interview (SCID) by consultant psychiatrist.

**Results:** A total of 1447 prisoners were approached; 70% responded; Mean age 33.9±7.17 years. About 50% of prisoners stay in prison between 5-10 years. The prevalence of psychiatric morbidity (positive SRQ-20 responses) was 749 (73.9%). Generalized anxiety disorder was 7.2% of psychiatric morbidity, obsessive compulsive disorder 1.5%, panic disorder 4.8%, substance abuse 50.1%, depression 11.9%, psychosis 9.2%, schizophrenia 3.2%, posttraumatic stress disorder 1.6%, and personality disorder 10.5%.

**Conclusion:** this study shows high psychiatric morbidity and substance abuse among Iraqi prisoners that require further attention to enhance mental health and concentrated on the role of mental health workers for early detection and proper treatment of psychiatric disorders in prison.

**Keywords:** Prisoner, Psychiatric Morbidity, Substance Abuse, Iraq

### Introduction

Mental disorders are one of the most frequent disorders in the world. Mental health of prisoner's is a major issue of public health [1]. Studies show that mental illnesses are high prevalence among the prisoners than the general population [2]. Although little is known about mental health disorders of prisoners, but it differ widely from general population [3]. There are a number of important factors which could be help to explain the high rates of mental illnesses among prisoners [4]. These factors could include deinstitutionalization of mentally ill people, increase drugs and alcohol use by people with mental disorders and none effective function of mental health services to cover the needs of mental illness of prisoners [5]. The environment of prison and rules regulate daily life inside prison can affect the prisoner's mental health [6]. Imprisonment, like other forms of incarceration, is a significant stressful event in an individual's life [2]. Imprisonment being a form punishment produces significant changes in one's physical, psychological, and social functioning. Despite our ability to cope and adapt as humans, traumatic events may change a person's biopsychosocial status to such an extent that the memory of certain negative events affects the

coping ability with reality [7]. In the prison, however, basic human values are distorted, contributing to temporary or even irreversible psychological sequelae. These complications vary from mood disorders such as depression, substance related disorders, personality disorders, and psychotic disorders [8, 9]. In order to survive in the prison, the inmates have to undergo extremely harsh policies and rough conditions of imprisonment. They have to adapt to these frustrations and deprivations of life. This prolonged adaption leads to a lot of psychological changes [10]. Prisoners have to reside for years in prison and sometimes for lifelong. It is a big issue facing the mental health workers why mental illness of prisoners deteriorated after imprisonment and they develop psychiatric disorders [11]. Prison is not a pleasant place to live because it estranged prisoners away from their families, home, friends, and outer world. Alienation of prisoners from their families and society is the most obvious cause to destroy the prisoners' well-being, which lead to stress and other mental health problems [12, 13]. Furthermore; unhygienic environment, overcrowding, delay legal process (under trial cases), physical and psychological suffering by prison officials and group clashes and conflict among prisoners group also disturb mental health of prisoners [14]. Offender stigma leaves most damaging effect on prisoners [15]. offender who cope with the environment able to

adjust in prison but those who unable to adjust with circumstances of the prison develop feel of guilty, aggression, suicidal ideation and depression, anxiety and other psychological symptoms [16]. Psychiatric disorders include substance misuse; personality disorder, psychoses depression, and anxiety were common among prisoners [17-19]. Mental disorders prevalence was 5-10 times higher than the general population. European prisons show 5% psychotic disorders, 25% anxiety and depression and 40% substance abuse [20]. A review of literature in 24 countries showed prevalence of depression 10% in male and 14% in female prisoners, and about 4% of psychotic illness in both genders [21]. Severe mental illness prevalence 10-15%, while 2% among general population. Over 50% of prisoners in the United States with mental health problems: state prisoners 56%, federal prisoners 45%, and 64% in local jails [22]. According to WHO, health in prison project, done in clearly indicated that something must be done to improve healthcare in prison [23]. The current study was carried out to find the prevalence of psychiatric morbidity and substance abuse among prisoners in Iraqi.

## Methods and Patients

### Setting and Design

The current study is a cross-sectional study including analytic component. It was carried out in 3 prisons in Baghdad. The data was collected during the period from December, 1<sup>st</sup>, 2011 to December, 1<sup>st</sup>, 2013.

**Sampling and Study Population:** All prisoners, both awaiting trial and sentenced prisoners, both gender were included, using stratified random sampling technique.

### Inclusion criteria

All the prisoners who entered jail during period of study, aged  $\geq 18$  years, of both gender, gave informed written consent and accepted to have the interview and participate in this study were included.

### Exclusion criteria

Acute medical illness, refused consent, mental retardation, language barriers, different nationality, age  $>18$  years prisoners were excluded.

### Data collection tools

Socio-demographic variables were collected using an information list filled during interview. Prisoners' Mental status was checked by

self-reporting questionnaires (SRQ-20) that was carried by the WHO and used in different countries. The cut-off point of SRQ-20 used by previous studies carried out in Iraq was seven [24]. Prisoners showed scores above cut off point of SRQ-20, were selected for administration of the DSM-IV Structured Interview (SCID) which done by consultant psychiatrist. Information regarding substance abuse was collected through the same interview [25].

### Definition of variables

Psychiatric morbidity explained by many independent variables. Independent variables were socio-demographic characteristics including; gender, age, marital status, occupation, level of education, smoking habits and duration in prisons.

### Statistical analysis

Analysis and processing of data was conducted by version 19a statistical package for social sciences (SPSS-19). Results are represented by percentages for qualitative variables. Chi-square was used to find the relation between two qualitative variables. P values were calculated to determine associations between sociodemographic factors and mental illness.  $P \leq 0.05$  was taken as statistically significant.

### Ethical issues

Study was carried out under the agreement of the Iraqi correctional directorate and cooperation with the prisons' health centers. Full description of the aims and type of the study was done. Oral and written consent were taken from the prisoners. Confidentiality was assured to each prisoner and was informed that the data collected will be used only for study purposes; Information and data entered into the computer system were secured with code numbers, only the researcher has access to information in database.

### Results

Present study assessed the psychiatric morbidity in Iraqi prisoners. The total number of investigated prisoners was 1447. Those agreed to participate in this study 1013. Participation rate 70%. The age range 25–54 years. Mean age  $33.9 \pm 7.17$  years. About 60% of prisoners were below 35 years age, predominantly male 96.2%, married 74.2%, about 75% low education, self-employed free work 50%, majority were lived with their families 96.2%. About 50% of prisoners stay in prison between 5-10 years (Table 1).

**Table 1: Sociodemographic characteristics of the prisoners participate in this study and the correlation with the duration of imprisonment**

| Sociodemographic characteristics of Iraqi prisoners participate in the study |                  | Duration of Prison |      |                |       |                  |      | Total (1013) |      | P     |
|--|------------------|--------------------|------|----------------|-------|------------------|------|--------------|------|-------|
|  |                  | Below 5 yrs        |      | 5 yrs - 10 yrs |       | More than 10 yrs |      | No.          | %    |       |
|  |                  | No.                | %    | No.            | %     | No.              | %    |              |      |       |
| Age Groups   | 25 yrs - 29 yrs  | 123                | 34.5 | 163            | 45.7  | 70               | 19.6 | 356          | 35.1 | 0.000 |
|  | 30 yrs - 34 yrs  | 22                 | 8.3  | 132            | 49.8  | 111              | 41.8 | 265          | 26.2 |       |
|  | 35 yrs - 39 yrs  | 9                  | 5.7  | 88             | 55.7  | 61               | 38.6 | 158          | 15.6 |       |
|  | 40 yrs - 44 yrs  | 34                 | 32.9 | 65             | 61.9  | 6                | 5.7  | 105          | 10.4 |       |
|  | 45 yrs - 49 yrs  | 3                  | 2.9  | 57             | 54.8  | 44               | 42.3 | 104          | 10.2 |       |
|  | 50 yrs - 54 yrs  | 2                  | 8    | 1              | 4     | 22               | 88   | 25           | 2.5  |       |
| Gender   | Male             | 182                | 18.6 | 489            | 50.2  | 303              | 31.1 | 974          | 96.2 | 0.331 |
|  | Female           | 11                 | 28.2 | 17             | 43.5  | 11               | 28.2 | 39           | 3.8  |       |
| Marital Status   | Single           | 47                 | 30.7 | 56             | 36.6  | 50               | 32.6 | 153          | 15.1 | 0.000 |
|  | Married          | 127                | 16.8 | 386            | 51.3  | 239              | 31.7 | 752          | 74.2 |       |
|  | Divorced         | 19                 | 17.6 | 64             | 59.2  | 25               | 23.1 | 108          | 10.7 |       |
| Occupation   | Employed         | 30                 | 14.0 | 104            | 48.6  | 80               | 37.3 | 214          | 21.2 | 0.001 |
|  | Unemployed       | 50                 | 17.4 | 167            | 58.4  | 69               | 24.1 | 286          | 28.2 |       |
|  | Free Work        | 113                | 22.0 | 235            | 45.8  | 165              | 32.1 | 513          | 50.6 |       |
| Education  | Illiterate       | 51                 | 32.9 | 59             | 38.06 | 45               | 29.0 | 155          | 15.3 | 0.000 |
|  | Primary          | 84                 | 32.4 | 120            | 46.33 | 55               | 21.2 | 259          | 25.6 |       |
|  | Intermediate     | 34                 | 9.42 | 206            | 57.06 | 121              | 33.5 | 361          | 35.6 |       |
|  | Secondary        | 14                 | 7.9  | 108            | 61.01 | 55               | 31.0 | 177          | 17.5 |       |
|  | University       | 10                 | 16.4 | 13             | 21.3  | 38               | 62.2 | 61           | 6.0  |       |
| Living Circumstances   | Live with family | 187                | 18.7 | 498            | 50    | 312              | 31.2 | 997          | 98.5 | 0.095 |
|  | Live Alone       | 6                  | 37.5 | 8              | 50    | 2                | 12.5 | 16           | 1.5  |       |
| Total  |                  | 193                | 19%  | 506            | 50%   | 314              | 31%  | 1013         | 100% |       |

The prevalence of psychiatric morbidity (positive SRQ-20 responses) was high among Iraqi prisoners with nearly three fourth of the participants 749 (73.9%). Table 2 shows factors associated with mental illness. The affected participants with psychiatric morbidity were younger age groups (below 35 years) 495 (66.1%), male gender 96%, married 73%, free work occupation 52.5%, low education 77.4%, about half of them was stay in prisons 5-10 years (49.3%), was live within their families (98.5%), smokers (80.4%), substance abusers (50.1%). The age, education, duration of prison, and substance abuse were significantly associated with psychiatric morbidity (Table 2).

**Table 2: SRQ-20 respondents in relation to some sociodemographic variables**

|                    |                  | SRQ responses |      |               |      | Total (1013) |      | P value |
|--------------------|------------------|---------------|------|---------------|------|--------------|------|---------|
|                    |                  | Negative(264) |      | Positive(749) |      | No.          | %    |         |
|                    |                  | No.           | %    | No.           | %    |              |      |         |
| Age Group          | 25 yrs - 29 yrs  | 75            | 28.4 | 281           | 37.5 | 356          | 35.1 | 0.000   |
|                    | 30 yrs - 34 yrs  | 51            | 19.3 | 214           | 28.6 | 265          | 26.2 |         |
|                    | 35 yrs - 39 yrs  | 53            | 20.1 | 105           | 14   | 158          | 15.6 |         |
|                    | 40 yrs - 44 yrs  | 39            | 14.8 | 66            | 8.8  | 105          | 10.4 |         |
|                    | 45 yrs - 49 yrs  | 33            | 12.5 | 71            | 9.5  | 104          | 10.2 |         |
|                    | 50 yrs - 54 yrs  | 13            | 4.9  | 12            | 1.6  | 25           | 2.5  |         |
| Gender             | Male             | 255           | 96.6 | 719           | 96   | 974          | 96.2 | 0.665   |
|                    | Female           | 9             | 3.4  | 30            | 4    | 39           | 3.8  |         |
| Marital Status     | Single           | 36            | 13.6 | 117           | 15.6 | 153          | 15.1 | 0.310   |
|                    | Married          | 205           | 77.7 | 547           | 73.0 | 752          | 74.2 |         |
|                    | Divorced         | 23            | 8.7  | 85            | 11.4 | 108          | 10.7 |         |
| Occupation         | Employed         | 67            | 25.4 | 147           | 19.6 | 214          | 21.1 | 0.079   |
|                    | Unemployed       | 77            | 29.2 | 209           | 27.9 | 286          | 28.2 |         |
|                    | Free Work        | 120           | 45.4 | 393           | 52.5 | 513          | 50.7 |         |
| Education          | Illiterate       | 25            | 9.5  | 130           | 17.4 | 155          | 15.3 | 0.004   |
|                    | Primary School   | 81            | 30.7 | 178           | 23.7 | 259          | 25.6 |         |
|                    | Intermediate     | 89            | 33.7 | 272           | 36.3 | 361          | 35.6 |         |
|                    | Secondary        | 47            | 17.8 | 130           | 17.4 | 177          | 17.5 |         |
|                    | University       | 22            | 8.3  | 39            | 5.2  | 61           | 6.   |         |
| Duration of Prison | Below 5 yrs      | 35            | 13.3 | 158           | 21.1 | 193          | 19   | 0.016   |
|                    | 5 yrs - 10 yrs   | 137           | 51.9 | 369           | 49.3 | 506          | 50   |         |
|                    | More than 10 yrs | 92            | 34.8 | 222           | 29.6 | 314          | 31   |         |
| Living             | Live with family | 259           | 98.1 | 738           | 98.5 | 997          | 98.4 | 0.408   |
|                    | Live Alone       | 5             | 1.9  | 11            | 1.5  | 16           | 1.6  |         |
| Smoking In Prison  | Non Smoker       | 46            | 17.4 | 147           | 19.6 | 193          | 19   | 0.433   |
|                    | Smoker           | 218           | 82.6 | 602           | 80.4 | 820          | 81   |         |
| Substance Abuse    | Non abusers      | 264           | 100  | 374           | 49.9 | 638          | 63   | 0.000   |
|                    | Abusers          | 0             | 0    | 375           | 50.1 | 375          | 37   |         |
| Total              |                  | 264           | 100% | 749           | 100% | 1013         | 100% |         |

Clinical interview by consultant psychiatrist for those with positive SRQ-20 responses (749) (73.9%) of the participants, based on DSM-IV check list was done. Interview showed that; generalized anxiety disorder was 7.2% of psychiatric morbidity, obsessive compulsive disorder 1.5%, panic disorder 4.8%, substance abuse 50.1%, depression 11.9%, psychosis 9.2%, schizophrenia 3.2%, posttraumatic stress disorder 1.6%, and personality disorder 10.5% of the psychiatric morbidity among Iraqi prisoners (Table 3).

**Table 3: Frequency and percentages of psychiatric morbidity among Iraqi prisoners with SRQ-20 positive responses, after clinical interview based on DSM-IV check list**

| Psychiatric morbidity | Total (749) |       |
|-----------------------|-------------|-------|
|                       | No.         | %     |
| GAD                   | 54          | 7.2 % |
| PANIC                 | 36          | 4.8%  |
| PTSD                  | 12          | 1.6%  |
| OCD                   | 11          | 1.5%  |
| SUBSTANCE ABUSE       | 375         | 50.1% |
| DEPRESSION            | 89          | 11.9% |
| PSYCHOSIS             | 69          | 9.2%  |
| SCHIZOPHRENIA         | 24          | 3.2%  |

Table 4 show the frequency and percentages of psychiatric morbidity from the total size of the sample, and correlation with the duration of prison. No mental illness 26.1%. Psychiatric morbidity was 73.9% of the total sample including; generalized anxiety disorder 5.3%, panic disorder 3.6%, posttraumatic stress disorder 1.2%, obsessive compulsive disorder 1.1%, substance abuse 37%, depression 8.7%, psychosis 6.8%, schizophrenia 2.4%, and personality disorder 7.8%.

**Table 4: Show the frequency and percentages of psychiatric morbidity among the total sample with statistical relation with duration of imprisonment**

| Frequency and percentages of psychiatric morbidity among the total sample with statistical relation with duration of imprisonment |                   | Durations of Prison |           |           | Total (1013) |       | P Value |
|---|-------------------|---------------------|-----------|-----------|--------------|-------|---------|
|   |                   | <5 yrs              | 5-10yrs   | >10 yrs   | No.          | %     |         |
| SRQ – 20 Responses  | Negative          | 35                  | 137       | 92        | 264          | 26.1% | 0.016   |
|   | Positive          | 158                 | 369       | 222       | 749          | 73.9% |         |
| Clinical Diagnosis  | No mental illness | 35                  | 137       | 92        | 264          | 26.1% | 0.000   |
|   | GAD               | 13                  | 22        | 19        | 54           | 5.3%  |         |
|   | PANIC             | 7                   | 18        | 11        | 36           | 3.6%  |         |
|   | PTSD              | 0                   | 12        | 0         | 12           | 1.2%  |         |
|   | OCD               | 2                   | 9         | 0         | 11           | 1.1%  |         |
|   | SUBSTANCE ABUSE   | 87                  | 184       | 104       | 375          | 37%   |         |
|   | DEPRESSION        | 29                  | 35        | 25        | 89           | 8.7%  |         |
|   | PSYCHOSIS         | 9                   | 25        | 35        | 69           | 6.8%  |         |
|   | SCHIZOPHRENIA     | 9                   | 14        | 1         | 24           | 2.4%  |         |
| PERSONALITY DISORDER  | 2                 | 50                  | 27        | 79        | 7.8%         |       |         |
| Total   |                   | 193 (19%)           | 506 (50%) | 314 (31%) | 1013         | 100%  |         |

Table 5 shows the statistical significances of each clinical diagnosis, resulted from the DSM-IV Structured Interview for (SCID), with the sociodemographic characteristics of the Iraqi prisoners included in this study.

**Table 5: Statistical correlation (P value) of the clinical diagnoses with sociodemographic characteristics of the participants of this study; P<0.05 considered for significance**

|                      | Substance Abuse | GAD   | PANIC | PTSD  | OCD   | Depression | Psychosis | Schizophrenia | Personality Disorder |
|----------------------|-----------------|-------|-------|-------|-------|------------|-----------|---------------|----------------------|
| Age Group            | 0.000           | 0.000 | 0.022 | 0.000 | 0.001 | 0.000      | 0.000     | 0.000         | 0.000                |
| Gender               | 0.022           | 0.000 | 0.222 | 0.486 | 0.505 | 0.048      | 0.085     | 0.321         | 0.064                |
| Marital Status       | 0.000           | 0.017 | 0.161 | 0.340 | 0.145 | 0.000      | 0.042     | 0.014         | 0.000                |
| Occupation           | 0.000           | 0.887 | 0.021 | 0.036 | 0.225 | 0.761      | 0.000     | 0.102         | 0.048                |
| Education            | 0.000           | 0.009 | 0.024 | 0.079 | 0.122 | 0.006      | 0.000     | 0.235         | 0.000                |
| Prison Duration      | 0.023           | 0.359 | 0.997 | 0.002 | 0.057 | 0.003      | 0.001     | 0.005         | 0.000                |
| Living Circumstances | 0.278           | 0.198 | 0.557 | 0.659 | 0.673 | 0.211      | 0.276     | 0.530         | 0.241                |

The study found substance abuse was the most frequent among Iraqi prisoners during the time of the study, 37% out of the total sample, and about 50% of the psychiatric morbidity. Polypharmacy abuser was 27.6% of total sample, double drugs was 8.3%, and single drug abuser was 1.1%. Drugs most frequent were; Carbamazepine (Tegretol) 71.1%, Procyclidine (Kemadrin) 51.5%, Tramadol (Tramal) 47.5%, Carisoprodol (Somadri) 42.4%, Diazepam (Valium) 30.1%, Alprazolam (Zolam) 28.3%, Clonazepam (Revotril) 19.7%, Orphenadrine (Norgesic) 17.3%, and Codeine(cough syrups) 15.3% (Table 6). The statistical relations of drugs with the sociodemographic characteristics were assessed at P<0.05 for significance (Table 7).

**Table 6: Frequency and percentages of the abused drugs among Iraqi prisoners**

| Drugs Abused             | No. | Substance abusers(375) | Total sample(1013) |
|--------------------------|-----|------------------------|--------------------|
| Carbamazepine (Tegretol) | 267 | 71.2%                  | 26.4%              |
| Procyclidine (Kemadrin)  | 193 | 51.5%                  | 19.1%              |
| Tramadol (Tramal)        | 178 | 47.5%                  | 17.6%              |
| Carisoprodol (Somadri)   | 159 | 42.4%                  | 15.7%              |
| Diazepam (Diazepam)      | 113 | 30.1%                  | 11.2%              |
| Alprazolam (Zolam)       | 106 | 28.3%                  | 10.5%              |
| Clonazepam (Revotril)    | 74  | 19.7%                  | 7.3%               |
| Orphenadrine (Norgesic)  | 65  | 17.3%                  | 6.4%               |
| Codeine (Cough syrups)   | 57  | 15.2%                  | 5.6%               |

**Table 7: Shows the statistical significant correlation of each abused drug with the sociodemographic characteristics considering P<0.05 for significant relation**

| Correlation of abused drugs with the sociodemographic characteristics of the participants | Carbamazepine | Procyclidine | Tramadol | Carisoprodol | Diazepam | Alprazolam | Clonazepam | Orphenadrine | Codeine |
|---|---------------|--------------|----------|--------------|----------|------------|------------|--------------|---------|
| Age Group   | 0.000         | 0.000        | 0.000    | 0.000        | 0.000    | 0.000      | 0.065      | 0.000        | 0.001   |
| Gender  | 0.789         | 0.000        | 0.000    | 0.000        | 0.024    | 0.306      | 0.074      | 0.095        | 0.120   |
| Marital Status  | 0.007         | 0.001        | 0.000    | 0.000        | 0.001    | 0.370      | 0.357      | 0.000        | 0.004   |
| Occupation  | 0.000         | 0.061        | 0.028    | 0.000        | 0.000    | 0.008      | 0.288      | 0.100        | 0.026   |
| Education   | 0.003         | 0.000        | 0.000    | 0.000        | 0.000    | 0.170      | 0.054      | 0.267        | 0.060   |
| Prison Duration   | 0.002         | 0.070        | 0.018    | 0.023        | 0.219    | 0.604      | 0.114      | 0.489        | 0.328   |
| Living Circumstances  | 0.308         | 0.058        | 0.147    | 0.085        | 0.331    | 0.168      | 0.870      | 0.317        | 0.022   |

## Discussions

The psychiatric disorders prevalence among Iraqi prisoners within the current study was 73.9%. Significant statistical correlation of psychiatric disorders was found with; age (P<0.001), education (P=0.004), duration of imprisonment (P=0.016), and substance abuse

(P<0.001). The prison is a correctional institute in which prisoners have restricted liberty, autonomy, and communication with family and friends. This can be devastating to some prisoners leading to disturbance in their physical, psychological and social status.

Current study prevalence is higher than that of James and Glaze who estimated that the prevalence rate of mental illness to be in the range of 45%-64% in the United States. Furthermore current study prevalence is higher than many studies carried out across many countries and cultures like; Weenie MT (2016) in Zambia (29.8%), Maruf (2015) in Bangladesh (57.2%), Ibrahim (2015) in Ghana (50%), Sepehrmanesh

Z (2014) in Iran (43.4%), Armiya'u (2013) in Nigeria (57%), Mundt AP (2013) in Chile (26.6%), Kumar V (2013) in India (33%), Naidoo (2012) in South Africa (55.4%), Nseluke (2011) in Zambia (63.1%), Steadman (2009) USA (31%), and Brooke (1996) in England (63%) [1, 4, 26-34].

Current study prevalence of mental disorder is less than many studies; Ibrahim EM (2014) Egypt (92.9%), Saha SK (2014) West Bengal (84%), Chan LG (2013) Singapore (88.3%), Goyal SK (2011) India (80.2%), Vicence (2011) Spain (84.4%), Dudeck (2009) Germany (83%), Bolton (2009) The Nederland (57%), Butler (2006) Australia (80%), Von Schonfeld (2006) Germany (83.5%), Langveld (2001) Norway (80%), Wallace (1998) Australia (92.9%), Tihonen and Hakula (1994) Finland (85%) [23,35-45].

The prevalence of the current study is nearly synonymous to these studies; Ayirolimeethal (2014) India (68.6%), Andreoli SB (2014) Brazil (68.9%), and Linda and Teplin (1997) America (75 %) [1,46,47].

Differences in prevalence rates could partly be explained by differences in sampled populations, socio cultural differences, methodological issues and differing classification systems. High prevalence could be due to prison circumstances and long period of isolation, and mental health requirements were recognized less by mental health workers.

Clinical diagnosis of depression among the Iraqi prisoners was 8.7% of the total sample, which is represent 11.9% of the psychiatric morbidity. Depression is much lower than findings of many studies; Ibrahim EM (2014) in Egypt (82.5%), Sepehrmanesh Z (2014) in Iran (27.6%), Mundt AP (2013) in Chile (15%), Armiya'u (2013) in Nigeria (30.8%), Kumar V (2013) in India (16.1%), Chan LG (2013) in Singapore (21.6%), Goyal SK (2011) in India (21%), Agbahowe et al. (1998) Nigeria reported 23% depression of the prisoners [1,23,28-30,36,37,48]. Singh and Verma (1976) found depressive illness (16%), Wallace et al 1998 in Australia (1.6%), Anxiety disorders were 11.2% of the total sample which is 15.1% of the psychiatric morbidity [44, 49]. Anxiety disorders were less than; Ibrahim EM (2014) in Egypt (51.2%), Sepehrmanesh Z (2014) in Iran (40.6%), and Armiya'u (2013) in Nigeria (20.1%) [1,23,28]. Anxiety disorders were higher than; Mundt AP (2013) in Chile (8.3%), and Goyal SK (2011) in India (1.2%), and nearly synonymous with Kumar V (2013) in India (10.2%), Psychosis and schizophrenia were 9.2% of the total sample which is 12.4% of the estimated psychiatric morbidity of this study [29,30,37]. Our findings were less than; Lawal (2014) in Nigeria (41.2%), Chan LG (2013) in Singapore (21.6%), and Naidoo (2012) in South Africa (42%) [31,36,50]. Psychosis and schizophrenia of this study were higher than; Sepehrmanesh Z (2014) in Iran (4.3%), Andreoli SB (2014) in Brazil (5.5%), Armiya'u (2013) in Nigeria (1.8%), Kumar V (2013) in India (4.2%), Goyal SK (2011) in India (0.4%), Wallace et al 1998 in Australia (3.1%) [1,28,30,37,47]. Agbahowe et al. (1998) in Nigeria reported schizophrenia in 2% of prisoners [48]. Our finding was synonymous with Ayirolimeethal (2014) in India (9.8%) [46]. This variation is due to different study design.

Personality disorders were 7.8% of the total sample which is 10.5% of the estimated psychiatric morbidity. This was less than; Sepehrmanesh Z (2014) in Iran (28.3%), Ayirolimeethal (2014) in India (19.2%), and Naidoo (2012) in South Africa (46.1%) [1,31,46].

Personality disorders were higher than Wallace et al 1998 in Australia (1.7%) [44].

The commonest psychiatric diagnosis was substance abuse disorder occurring in 37% of the total prisoners' sample which is about 50% of the total psychiatric morbidity in this study. Prescription drugs were more frequent among Iraqi prisoners like; Carbamazepine (Tegretol) 71.1%, Procyclidine (Kemadrin) 51.5%, Tramadol (Tramal) 47.5%, Carisoprodol (Somadril) 42.4%, Diazepam (Valium) 30.1%, Alprazolam (Zolam) 28.3%, Clonazepam (Revotril) 19.7%, Orphenadrine (Norgesic) 17.3%, and Codeine (cough syrups) 15.3%. Substance use disorder was synonymous with Maruf (2015) in Bangladesh (38.4%) [26]. It is higher than these studies; Sepehrmanesh Z (2014) in Iran (17.4%), Andreoli SB (2014) in Brazil (26.5%), Mundt AP (2013) in Chile (12.2%), Chan LG (2013) in Singapore (27.9%), Naidoo (2012) in South Africa (23.3%), and Wallace et al 1998 in Australia (6.4%) [1,29,31,36,44,47]. Substance use disorder of this study was less than these studies; Lawal (2014) in Nigeria (58.8%), Ayirolimeethal (2014) in India (59.3%), Armiya'u (2013) in Nigeria (48.7%), Kumar V (2013) in India (58.8%), and Goyal SK (2011) in India (56.4%) [28,30,37,46,50].

This study conclude that mental health services of prisoners required more attention to enhance the level of mental health of prisoners and staff of prison, and concentrated on the role of workers in mental health including specialist psychiatrists, clinical psychologist, mental health nurses and social counselors for early detection and proper management of psychiatric illness among prisoners.

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