

## REVIEW ARTICLE

# Prioritization of Iranian Male Mental Disorders Based on latest Prevalence, Burden, Male/Female Ratio and Expert Pane; a Systematic Review

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**Abstract:** Introduction: Mental disorders are the most prevalent health problems in the world. 23.6% of Iranians have at least one psychological disorder. Men usually neglect their mental health issues, and their top priority mental health disorders should be determined for health planning. Methods: International databases including Med-Line, Scopus, Web of Science, ProQuest, and SID national database were searched from 2015 to October 2020. The latest reported prevalence and percent of total DALY (Disability-adjusted life year), their difference between sexes as well as the expert panel's opinion about mental disorders were gathered in a matrix based on the Three-Dimensional Combined Approach Matrix (3D-CAM). Each item got a rank and prioritization was made base on mean rank. Results: Eight studies were included. The most prevalent mental disorders among the Iranian male population were Major Anxiety Disorders (MADs, 12%) and the highest burden belonged to Major depressive disorder (MDD) comprising 2.88% of the total DALY. Considering all parameters, the highest priority was the Drug Use Disorders (DUD) followed by Alcohol Use disorders (AUDs), Conduct disorder, MADs, Bipolar disorder, MDD, and Schizophrenia, respectively. Conclusion: Men are extremely affected by drug and alcohol use disorders in Iran and also there is a lack of practical screening and effective interventional programs for these disorders in the primary health care system. More intensive harm reduction programs are needed for decreasing devastating consequences of any substance use disorders as well as improving mental health literacy and raising awareness toward risk perception for preventive and controlling purposes.

**Keywords:** Mental disorders; Disease burden; Health priorities

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## 1. Introduction

Mental disorders are the most prevalent health problems in the world and often have an early onset in life, they are contributing significantly to the global disease burden as well (1). Currently, there is an alarming increase in the incidence of mental disorders around the world, which causes considerable morbidity (2). Studies have shown that the prevalence of mental disorders varies between 9.6 and 27.8% in the general population (3) The Iran mental health sur-

vey has shown that the one-year prevalence of any psychiatric disorder was 23.6% (4). Mental disorders include various modes such as depression, generalized anxiety disorders, post-traumatic stress disorder, social anxiety disorder and panic disorders which are the most important common mental health disorders affecting a large proportion (25%) of the world's population in both developing and developed countries (5). Mental health problems are related to poor educational achievement, unemployment, interpersonal difficulties and maladaptive parenting behaviors. Mental disorders may interpose with developmental duties in different periods (6).

Comorbidity in mental disorders is widespread (maximum: 50%) and individuals who have one mental disorder also have at least another comorbid mental disorder (7). Comor-

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bidity can be an index of more severity and chronicity of mental disorders and it is needed to be considered systematically in any clinical setting. Prevention of secondary conditions (comorbidities) is based on the effective management of primary conditions (8). Men are less concerned about their health problems especially those related to mental health since they are worried about their social role being destroyed since a high stigma is associated with these types of disorders (9, 10). Because of the low facilities and budget available for covering all mental health problems, we should focus on the most important and cost-effective targets either in research or the treatment sectors. Therefore, we aimed to find the top priorities of mental health disorders in men to be addressed in future health planning goals that may be made by policy-makers or researchers.

## 2. Methods

This study aimed to collect all latest reports about the prevalence and burden of mental health disorders in the general population in Iran. Accordingly, this PICO was considered to include all systematic reviews and nationwide studies in this area from the last 5 years. Considering the following keywords: “prevalence”, “burden”, “mental disorders”, “psychiatric disorders”, and “Iran”, an electronic search was done in international databases including Scopus, Medline, Web of Science, ProQuest, Google Scholar, and SID as a national database from 2015 until October 2020, eligible studies could have been published in either English or Farsi. The process of selecting articles was completed by two independent researchers in the field of mental health and general medicine. Exclusion criteria were non-Iranian participants and studies about interventions and correlations etc. or studies about specific groups (non-general population) and studies that were not systematic reviews or national surveys. Since there was only one source of burden of mental disorders, we considered only those disorders listed in that source. Accordingly, those studies that had reported the latest prevalence of selected disorders, were included. Extracted data were entered into a table which included bibliographic information of studies (author’s name, publication year), study type, and main study achievements about the prevalence of mental disorders. According to Three-Dimensional Combined Approach Matrix (3D-CAM) (11), the prioritization was made based on the mean rank of prevalence in men; male/female ratio of prevalence; DALY in men; male/female ratio of DALY and the ranking which was done by the expert panel who were asked about the least to most covered research topics in this area. Test of heterogeneity, subgroup analysis, risk of bias and meta-analysis were not applicable because we used the latest data for each disorder that themselves resulted from either a meta-analysis or a national survey and there weren’t

numerous records for each of given disorder to be pooled together.

## 3. Results

As shown in figure 1, at the initial phase of the electronic search, 211 articles were retrieved. After removing duplicates, 85 studies were screened for eligibility. Finally, eight studies were summarized. The agreement between search results were almost perfect between two researchers ( $\kappa = 91.5$ ). The most prevalent mental disorders among the Iranian male population were Major Anxiety Disorders (MADs, 12%, CI95%: 10.6-13.4) (Table1) and the highest burden belonged to Major Depressive Disorder (MDD) with 2.88% (CI95%: 2.05-3.87) of total DALYs. The highest male/female ratio was the prevalence of Alcohol Use Disorders (AUDs) which indicated that the prevalence of AUDs in men is 22.8 folds higher than in women. Considering all parameters including prevalence, burden, male/female ratio and the least to most covered research topics according to expert panel the highest priority was the Drug Use Disorders (DUD) followed by Alcohol Use disorders (AUDs), Conduct disorder, MADs, Bipolar, MDD, and Schizophrenia respectively (Table2).

## 4. Discussion

Our matrix of prioritization revealed that the top priority of mental health disorders in Iranian men belonged to DUDs and AUDs which mainly resulted by the huge difference between their prevalence in men and women. Indeed, men in Iran are suffering from these disorders almost 10-23 times more than women. This gender gap is also reported in other countries but some studies mentioned that the sex difference is narrowing because of socio-structural changes that have been occurring in developing countries. Besides the intensive programs which are needed for harm reduction in both sexes, despite the functional consequence of DUDs tends to be more severe in women, and male drug users are extremely higher than female ones and this needs more attention (20). Based on the expert panel’s opinion, AUDs are one of the least-covered research topics in Iran but from the aspect of global concern, AUDs are considered as the most prevalent mental disorders mostly in high-income and upper-middle-income countries; and are also associated with high mortality and burden of disease, mainly because of the adverse outcomes like liver cirrhosis or injuries (21). Since high stigma is associated with these disorders, AUDs are usually neglected, and also there are no practical screening programs for them in primary health care, it is suggested to implement a clinical intervention for these disorders in a supportive community environment (9). Despite the presence of most required rules and guidelines of standard alcohol policy including implementation of AUDs screening in PHC in Iran, since the al-

cohol use in Iran is totally banned, we are facing an underestimate in current use and also even unmet urgent medical cares for methanol poisoning cases (22).

Conduct disorder which is our major concern in adolescents younger than 18 years has a considerable sex difference in Iran and also this disorder got the first rank in terms of least-covered research topic from expert panel, these caused it to get the third priority in our study. Although in comparison with global statistics (3.6% and 1.5% in male and female respectively) (23) the overall prevalence of this disorder is significantly lower in our country, but we have a worse condition in male/female ratio (4.57 versus 2.4) (23), so we should take more powerful steps to care for our children especially boys, against such predisposing conditions such as low school achievement, disrupted families, poor parental supervision, low childhood socioeconomic status, and low family income (24, 25) and also it is suggested to the Iranian researchers to pay more attention to this neglected research area.

Although the MADs which mainly include Generalized Anxiety Disorder (GAD), Obsessive-Compulsive Disorder (OCD), Panic Disorder, Post-Traumatic Stress Disorder (PTSD) and Social Phobia (or Social Anxiety Disorder) are less prevalent in men than women, they got the fourth priority because of their higher overall prevalence among all mental disorders (12% and 19.4% in men and women respectively), indeed these types of mental disorders are the most prevalent mental disorders in both sex around the world (13, 23). Also, there are many studies on these topics. However, considering the burden of disease, they have the same burden as DUDs. There are several major risk factors including unemployment, low socioeconomic status, and urban residency for these type of mental disorders and a recent study by Hajebi and colleagues found that MADs are more prevalent in middle-aged men and also MADs cause more days out of role in men than women (13).

Compared with global prevalence (1.5%), Bipolar disorder has a relatively better condition in Iran (4). One of the most important concerns about this disorder is that the rate of suicide in these patients is 20-30 times higher than the general population (26). The most-covered research topic among our list was MDD. Iranian men were suffering from depression about half of the amount seen in women and also MDD has a relatively low overall prevalence in men so located in our lower level of priority, but unfortunately, this disorder has the highest burden of disease among all mental health disorders in Iran and should not be neglected in men because they are less likely to seek professional help in this regard than women (10). With respect to schizophrenia, we have partially the same condition as global prevalence (27).

The limitation of our study was that the latest data about the prevalence of one of our disorders (MDD) was extracted from

a systematic review article that was different from other disorders that were extracted from national surveys.

## 5. Conclusion

Since men usually neglect their health problems especially mental health issues they are extremely affected by DUD and AUDs in Iran when compared with women and also as a result of some legal issues the screening and interventional programs for these disorders are not practical and effective in PHC. More intensive harm reduction programs are needed for decreasing devastating consequences of any DUDs as well as preventive and controlling programs which would be achieved by improving mental health literacy and raising awareness toward risk perception. More studies on men's mental health specially in fields of conduct disorder and AUDs are suggested to be conducted that may have been neglected by men, researchers, and health policymakers.

## 6. Appendix

### 6.1. Acknowledgements

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### 6.2. Conflict of interest

The authors declare that there is no conflict of interests regarding the publication of this paper.

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None.

### 6.4. Author contribution

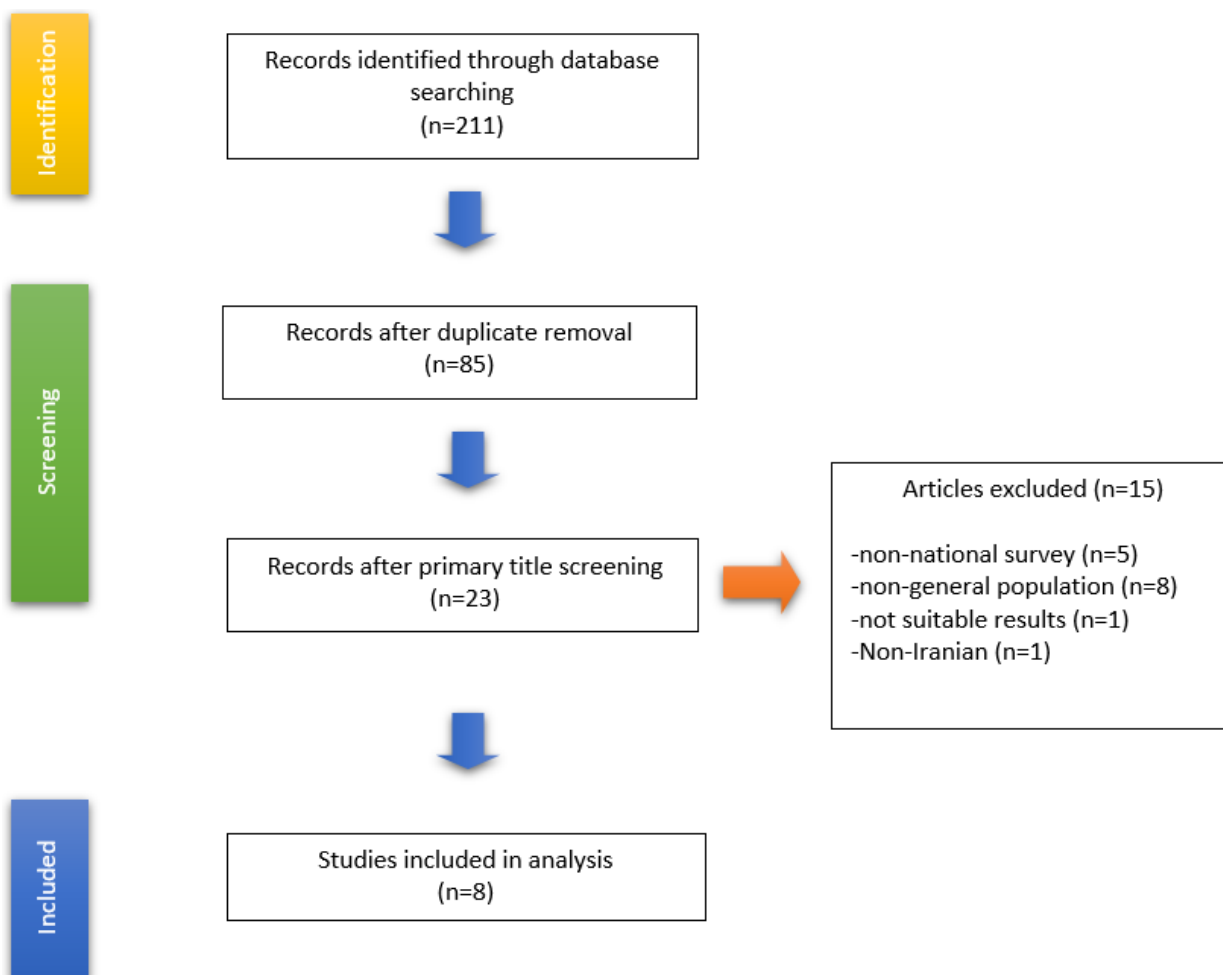
All the authors had the same contribution.

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**Figure 1:** PRISMA flow diagram of electronic search and selection process of included studies.

**Table 1:** Prevalence of mental disorders in the national survey or systematic review studies in Iran.

First author, year [ref.]	Study type	Total sample size	Prevalence of disorder in male (95% CI)	Prevalence of disorder in female (95% CI)
Gharraee. B., 2019 (12)	Systematic review	37867	MDD: 2.3% (1.6-3.6)	MDD: 4.8% (3.6-5.6)
Hajebi A., 2018 (13)	National survey	7886	MADs 12% (10.6-13.4)	MADs: 19.4% (17.9-20.9)
Amin-Esmaeili M, 2017 (14)	National survey	7840	AUDs: 1.83 (1.22-2.43)	AUDs: 0.08 (0-0.16)
Amin-Esmaeili M, 2016 (15)	National survey	7841	DUDs: 3.79%	DUDs:0.35%
Salmanian M., 2019 (16)	National survey	30532	Conduct disorder: 1.28% (1.13-1.53)	Conduct disorder: 0.28% (0.22-0.39)
Sharifi V., 2015 (4)	National survey	7886	Bipolar: 1.1% (0.7-1.6)	Bipolar: 0.8%(0.5-1.1)
Charlson FJ., 2018 (17)	Global	NA	Schizophrenia: 0.19% (0.17-0.22)	



**Table 2:** Prioritization of mental disorders based on table 1; the study of the Burden of Mental Disorders in the Eastern Mediterranean Region (18) and Institute of Health metrics and evaluation (IHME) (in Iran (19) and ranking which was done by expert panel who were asked about the least to most covered research topics.

Disorders	Prevalence in men% (Rank)	Prevalence Male /Female (Rank)	DALY in men% (Rank)	DALY Male/Female	Disorders	Prevalence in men% (Rank)
Drug use disorders	3.79 (2)	$(3.79/0.35) = 10.8$ (2)	2.43 (3)	$(2.43/0.91) = 2.67$ (1)	5	2.6
Alcohol use disorders	1.83 (4)	$(1.83/0.08) = 22.8$ (1)	0.27 (7)	$(0.27/0.12) = 2.25$ (2)	2	3.2
Conduct disorder	1.28 (5)	$(1.28/0.28) = 4.57$ (3)	0.32 (6)	$(0.32/0.18) = 1.77$ (3)	1	3.6
Major anxiety disorders	12 (1)	$(12/19.4) = 0.62$ (6)	2.44 (2)	$(2.44/3.99) = 0.61$ (7)	6	4.4
Bipolar	1.1 (6)	$(1.1/0.8) = 1.37$ (4)	0.71 (5)	$(0.71/0.91) = 0.78$ (5)	3	4.6
Major depressive disorder	2.3 (3)	$(2.3/4.8) = 0.48$ (7)	2.88 (1)	$(2.88/5.46) = 0.64$ (6)	7	4.8
Schizophrenia	0.19 (7)	$(0.19/0.19) = 1$ (5)	0.8 (4)	$(0.8/0.8) = 1$ (4)	4	4.8