https://doi.org/10.55453/rjmm.2024.127.1.4
The article was received on June 18, 2023, and accepted for publishing on September 2, 2023.

ORIGINAL ARTICLE

A Survey on Mental Health Status in West of Iran: A Spatial Analysis

Ehsan Nazari[1], Hojjat Sayyadi[2], Fathola Mohamadian[3], Sehat Aibod[4], Ali Sahebi[5], Maryam Kheiry[6], Yousef Veisani[7]

[1] Psychosocial Injuries Research Center, Ilam University of Medical Sciences, Ilam, IR Iran; ehsan.ilam49@gmail.com
[2] Non-Communicable Diseases Research Center, Ilam University of Medical Sciences, Ilam, IR Iran; Sayyadi.h@gmail.com
[3] Department of Psychology, Psychosocial Injuries Research Center, Ilam University of Medical Sciences, Ilam, IR Iran; mobinmohamadian@yahoo.com
[4] Psychosocial Injuries Research Center, Ilam University of Medical Sciences, Ilam, IR Iran; s_i1354@yahoo.com
[5] Non-Communicable Diseases Research Center, Ilam University of Medical Sciences, Ilam, IR Iran; ali.sahebi.phd@gmail.com
[6] Non-Communicable Diseases Research Center, Ilam University of Medical Sciences, Ilam, IR Iran; m.kheiry@yahoo.com
[7] Non-Communicable Diseases Research Center, Ilam University of Medical Sciences, Ilam, IR Iran; yousefveisani@yahoo.com

Correspondence: Yousef Veisani, yousefveisani@yahoo.com

Abstract: *Mental disorders clearly are among the major challenges of global health causing many concerns for health systems, health experts, and health policy makers. The present study was conducted to evaluate the mental health program in comprehensive health centers and health houses under the coverage of the Ilam University of Medical Sciences in the West of Iran. The present study was conducted based on the reports obtained from the mental health program in 2019. The data were recorded into registration and evaluation forms of mental disorders with the codes 102-19-03 and 102-19-01 and then entered into the Excel software. The prevalence per 100 and 100,000 people, as well as their 95% confidence intervals, were calculated using Formula 1 ROUND (Number of cases*100000/population) and Formula 2 ROUND (Prevalence ±1.96*SQRT (Prevalence *(1-Prevalence)/population). The results showed that the prevalence of depression was 19,100 [95% CI: 18999-19201] 19100), and the prevalence of anxiety was 304,66 [95% CI: 20348-30584] per 100,000 population. The highest prevalence among mental disorders was related to depression and anxiety. Considering the high average score of mental health status in people over 65 years old, it is necessary to implement measures and interventions to improve these individuals' mental conditions and upgrade their mental health.*

Keywords: *Spatial analysis; Ilam province; Mental health; Iran*

INTRODUCTION

According to the definition provided by the World Health Organization (WHO), mental health is "a health status that turns one's potential talents into reality, enabling people to cope with routine life tensions, accomplish valuable work, and upgrade their social participation" [1]. Mental health is an important component for evaluating the health status of a population and can be evaluated using various indicators [2]. In other words, the concept of mental health falls under the general concept of health and refers to all the methods and measures used to prevent people from developing mental disorders, as well as for the treatment and rehabilitation of affected individuals. Psychologists believe that mental health can be affected by individual characteristics, mental and environmental burdens, economic, social, and familial status, failure to achieve life goals, and lack of motivation [3]. Industrialization of countries, the growth of urbanization, migration to cities, etc. are phenomena that are associated with numerous troubles, including psychological and social problems. For this reason, mental health and mental disorders are considered top priorities in today's world. The high prevalence of mental disorders and their associated morbidities render them an immediate health priority [4].

Excessive attention to physical health problems (such as infectious and contagious diseases) has caused mental health to receive less priority in many countries around the world, including its social and spiritual aspects, which have been overlooked in most cases [5]. Statistics on the global burden of mental illnesses highlight the need to pay attention to these aspects more than ever. In parallel with the estimation of the WHO, Harvard University and the World Bank declared that mental disorders were responsible for about 13% of the total

burden of diseases in 2006, which was predicted to reach 15% by 2020. The rate of morbidities caused by these disorders has been reported beyond 33% [6]. In Iran, mental health disorders account for 14.5% of the total burden of diseases, and after traffic accidents, they share the second rank with cardiovascular diseases. In women, depression claims the first place of disease burden, while in men, addiction is considered the third cause of disease burden[7]. According to studies in Iran on individuals older than 15 years old, the prevalence of mental disorders has been 25.9% in women and 14.9% in men, and it was reported that overall, 21% of people suffered from some sort of mental problems. Some studies have assessed the prevalence of mental disorders in Ilam province{8]. In a population-based study by Visani et al. [9], the prevalence of DSM-IV mental disorders in both genders was investigated in the urban areas of Ilam province. Out of 763 participants aged 15 years and older in the recent study, 25.8% showed symptoms of mental distress, and the prevalence of mental disorders was reported to be 20.9% in men and 29.8% in women. Also, the prevalence of anxiety, major depressive disorder (MDD), and obsessive-compulsive disorder was higher in women than in men (23.6% vs. 18.2%; 22.7% vs. 17.4%; 13.9% vs. 10%, respectively). In women, the prevalence of phobia was reported as 10.4%.

Studying mental health status can provide managers and decision-makers of organizations with valuable information for planning educational, therapeutic, and preventive measures to reduce the incidence of these diseases in society. Such information can be obtained by monitoring the mental health status of people in different societies [5].

Assessment and monitoring of mental disorders in the country and in Ilam province can help better understand the condition of mental health and public health in society, which is an important and influential factor affecting social productivity and wealth creation. Therefore, researchers here aimed to investigate the mental health status of the urban population of Ilam using the data recorded in the registration and assessment forms designed for mental disorders. Furthermore, we evaluated the mental health program performed in comprehensive health centers and health houses covered by the Ilam University of Medical Sciences in the West of Iran.

MATERIALS AND METHODS

The present cross-sectional study was conducted on the basis of the reports derived from the mental health program in Ilam province in 2020. According to the statistics announced in 2021, Ilam province harbors a population of over 630,000 people living in ten cities: Ilam, Ivan, Chardavl, Sirvan, Malekshahi, Mehran, Abdanan, Dehloran, Badreh, and Darrehshahr (Figure 1).

Figure 1: The geographical location of Ilam province

This study was conducted to assess the mental health program implemented in the comprehensive health centers and health houses affiliated with the Ilam University of Medical Sciences in 2019. The study was approved by the institutional ethics committee under the code IR.MEDILAM.REC.1399.266. The data were gathered by reviewing registration and evaluation forms for mental disorders with the codes 102-19-03 and 102-19-01 in all ten cities of Ilam province. Then based on the population of each city in 2021, the prevalence of mental disorders was calculated in 100 and 100,000 people.

Analytic Method

After collection, the data of each city were entered into Microsoft Excel software, and formulas 1 and 2 were used to calculate the prevalence of mental disorders (with 95% CIs) in 100 and 100,000 people.

Formula 1: ROUND (Number of cases*100000/population)

Formula 2: ROUND Prevalence ±1.96*SQRT (Prevalence *(1-Prevalence)/population)

Also, to determine the geographical distribution of mental disorders in the cities of Ilam province, the commands of spatial analysis in the STATA 11 software (Stata Corp. LLC College Station, Texas, USA) were used.

RESULTS

The results showed that in Ilam province, the prevalence of depression was 19100 (95% CI: 18999-19201), and the prevalence of anxiety was 30466 (95% CI: 20348-30584) per 100,000 people. According to the results, the highest prevalence among mental disorders was related to depression and anxiety.

The highest rate of depression belonged to Ilam (20300, 95% CI: 20137-20463) and Malekshahi (21836, 95% I: 21297-22375) cities, while the lowest rate of depression was reported in

Sirvan (16292, 95% CI: 15691-16897) and Badreh (17299, 95% CI: 16706-17892).

Also, the highest rates of anxiety were recorded in the cities of Abdanan (22298, 95% CI: 21922-22674), Ivan (22559, 95% CI: 22228-22970), and Ilam (21200, 95% CI: 210135-21365). On the other hand, the cities of Sirvan (16769, 95% CI: 16184-17404), Chardavl (16499, 95% CI: 16228-16770), and Darrehshahr (19099, 95% CI: 17790-18408) had the lowest rate of anxiety (Table 1).

Table 1: The prevalence of depression and anxiety in the population of Ilam province per 100,000 people in separate cities

Location	Population	Major Depressive Disorder Prevalence		Anxiety Disorder Prevalence	
		Number of cases	Rate per 100,000 (CI 95%)	Number of cases	Rate per 100,000 (CI 95%)
Ilam	235144	47734	21200(210135-21365)	49850	20300(20137-20463)
Abdanan	46977	9630	22298(21922-22674)	10475	20499(20134-20463)
Ivan	48833	10236	22559(22228-22970)	11036	20961(20600-21322)
Mehran	27506	5281	22402(21909-22895)	6162	19199(18734-19664)
Badreh	15614	2701	17299(16706-17892)	2701	17299(16706-17892)
Dehloran	66339	13135	18900(18602-19198)	12538	19800(19497-20103)
Darrehshahr	59551	10838	18099(17790-18408)	10778	18200(17890-18510)
Shirvan	14404	2347	16796(16184-17404)	2419	1294(15691-16897)
Chardavl	72167	12412	16499(16228-16770)	11907	17199(16924-17474)
Malekshahi	22587	4932	17196(16704-17668)	3884	21836(21297-22375)
Total	580148	110808	30466(20348-30584)	176750	19100(18999-19201)

Regarding age distribution, the results showed that the highest prevalence of depression (29%), anxiety (35.5%), and psychotic disorder (22.6%) was observed in people over 65 years of age. The psychological disorders of mania (6.3%) and obsessive-compulsive disorder (13.3%) were more commonly observed in the age group of 15-24 years compared to other age groups.

Regarding the gender distribution of mental disorders, it was noticed that depression (20.3% vs. 22.7%), mania (2.6% vs. 4.7%), anxiety (23.6% vs. 32.18%), obsessive-compulsive disorder (10% vs. 13.79%), phobia (10.4% vs. 5%), and psychotic disorder (6.17% vs. 2.4%) were more frequent in women than in men (Table 2).

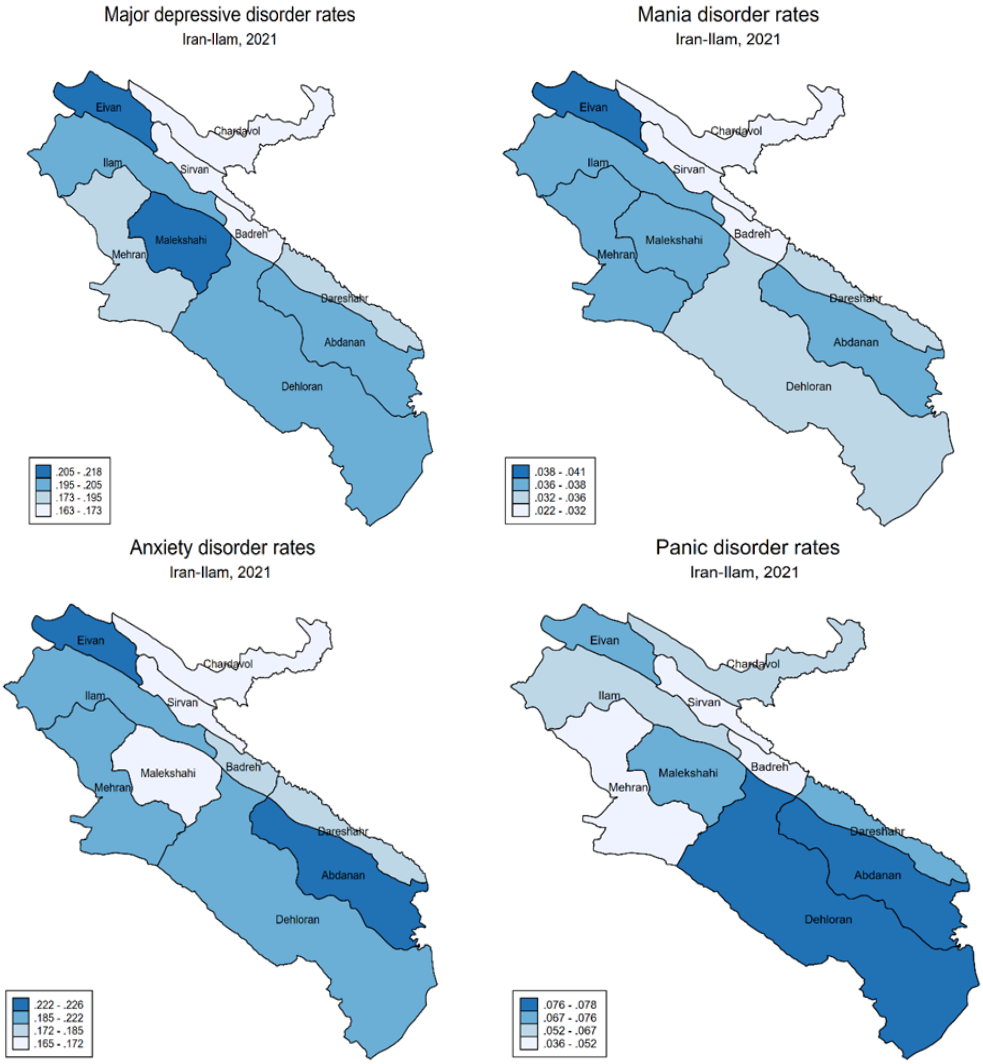
Table 2: The prevalence of mental disorders in Ilam province in various age groups and genders

Age groups/gender	Depression	Mania	Anxiety	OCD*	Phobia	Psychotic
	Prevalence (CI95%)	Prevalence (CI95%)	Prevalence (CI95%)	Prevalence (CI95%)	Prevalence (CI95%)	Prevalence (CI95%)
15-24 years	14.0 (7.08-15.1)	6.3 (5.9-7.3)	14.7 (12.1-16.8)	13.3 (9.04-15.15)	8.4 (6.9-11.1)	0.7 (0.01-5.9)
25-44 years	20.6 (18.2-22.3)	4.0 (2.6-9.1)	21.2 (16.2-18.2)	11.3 (9.13-14.2)	7.5 (6.9-11.1)	4.8 (3.6-6.3)
55-64 years	22.7 (20.2-24.3)	2.3 (1.4-2.9)	23.6 (20.3-25.2)	13.4 (8.1-16.1)	8.3 (7.9-11.3)	3.7 (1.2-5.7)
>65 years	23.6 (20.3-25.2)	0.4 (0.1-1.1)	35.5 (32.3-37.8)	9.7 (7.1-11.2)	9.7 (7.1-12.2)	22.6 (20.2-27.6)
Male	17.4 (15.1-19.6)	2.6 (1.3-8.7)	18.2 (15.2-21.1)	10.0 (8.1-12.4)	5.0 (3.7-8.2)	2.4 (1.4-4.1)

**OCD – Obsessive-compulsive disorder*

The results of the spatial analysis regarding the geographical distribution of mental disorders in Ilam province showed that depression, anxiety, and mania were more commonly observed in the northern compared to southern regions of the province, showing the highest prevalence in Ivan City. Also, panic disorder was more prevalent in southern cities of the province (Abdanan and Dehloran) than in other cities (Figure 2).

Figure 2: The results of spatial analysis. Geographical distribution of the most common mental disorders in Ilam province



DISCUSSION

The results of the present study showed that the highest prevalence of depression, anxiety, and psychotic disorders was observed in people over 65 years old. In this study, age showed a direct and significant correlation with having unsatisfactory mental health, indicating the importance of advancing age in the development of mental health problems such as depression, anxiety, and psychotic disorders. In other words, the incidence of mental health disorders increased with age, contradicting the findings of Heidari et al. [10] and Jafari et al. [11]. In recent studies, higher age was reported to be significantly associated with more favorable mental health. Other studies; however, have reported a significant relationship between mental health and advancing age, including a report by Visani et al. [12]. In another study, Noorbala et al. [13] noted that with increasing age, the likelihood of the development of mental disorders increased so the highest prevalence (49.9%) was related to people over the age of 65 years. Among the reasons for the higher prevalence of mental health disorders in older people can be retirement, menopause, loneliness-associated anxiety, and biological alterations. The results of these studies are generally consistent with our findings; nevertheless, some discrepancies can be explained by differences in the assessment tools employed and the age spectra of the studied populations.

The results of this study showed that the highest prevalence of panic disorder and obsessive-compulsive disorder was related to the age group of 15-24 years. Mental disorders in teenagers and young adults exacerbate the predicted future burden of diseases and adversely affect numerous life aspects, including educational performance, employment, income, personal relationships, and social participation, as well as workforce [14]. In a study in Brazil conducted on individuals aged 18 years and older, it was shown that younger people were more

vulnerable to mental problems [15]. In another study in Iran, Shirzadi et al. [16] declared a higher prevalence of these disorders in people aged 41 years or older compared to 18-40-year-old individuals.

Also, the results of the present study revealed a lower prevalence of depression and anxiety in women than in men. In a study, Falahzadeh and Momayezi [17], who investigated the prevalence of depression, anxiety, and stress in Yazd city of Iran, noted that depression, anxiety, and stress were more prevalent in women than in men, and this difference was statistically significant for anxiety (P=0.01) and stress (P=0.02), which was not consistent with our observation. We also noticed a higher prevalence of obsessive-compulsive disorders, phobia, and psychotic disorders in women compared to men, which was in agreement with the reports of Pendrez et al. [18], Kesler et al. [19], and Chang et al. [20]. The higher prevalence of mental disorders in women compared to men can be attributed to biological factors, gender-related differences, environmental and occupational stress, as well as limited sources of satisfaction and social participation of females.

Although in the present study, a significant portion of the urban population declared that they had unsatisfactory mental health conditions, this may not exactly match the clinical definition of adverse mental health. Therefore, the results of such subjective studies should not be regarded as a basis for judgment about the true condition of the mental health of respondents. Nevertheless, one should admit that a ratio of people, especially among women, suffer from some degree of mental health disorders. In this regard, the key measures that can be taken may be to initially achieve a correct understanding of the issue and then to implement comprehensive interventions for monitoring populations as large as possible, especially among vulnerable groups. Numerous viable strategies are available to maintain and improve public health. For example, unemployment has been pointed out as an important factor contributing to the development of mental health disorders [21]. So, an important intervention that governments can employ is to create more jobs, especially for youth, and to improve people's livelihoods as much as possible. Also, another effective measure for improving mental health is to remove the sources of distress, psychological pressure, and unnecessary tensions, which can be achieved with the help of mass media by nurturing a comfortable atmosphere. Moreover, the establishment of psychological counseling clinics can be among low-cost and beneficial measures to cover a large population, including young people, middle-aged, and elderly people, so that they can amend and improve their mental health.

CONCLUSIONS

The results of this study affirmed a relatively high prevalence of suspected mental health problems among people over 65 years of age, which is an alarming call,

requiring authorities and researchers to pay more attention to this issue and to identify and modify the factors affecting the mental health of these people. A unique observation in this study was the lower prevalence of anxiety and depression in women than in men. Also, we noticed that panic disorder and obsessive-compulsive disorder were most prevalent in the age group of 15-24 years. A reduction in the prevalence of mental disorders can enhance social liveliness. In this regard, increasing people's awareness of ways to reduce mental disorders, expanding psychological counseling centers across the city, the establishment of counseling phone lines, residing counselors and psychologists in public places such as mosques, expansion of parks and enjoyable environments, equipping parks with sports devices, and finally, encouraging people to use these services can help reduce depression and anxiety in society.

Conflicts of interest and sources of funding

The authors declare no conflict of interest. The source of the funding code is the code of IR.MEDILAM.REC.1399.266.

Authors' contribution

Conceptualization, E.N. and Y.V.; methodology, E.N.; formal analysis, H.S; investigation, Y.V.; data curation, F.M. and A.S; writing—original draft preparation, S.A.; and M.Kh.; writing—review and editing, S.A; F.M. and M.Kh. All authors have read and agreed to the published version of the manuscript.

Acknowledgments

This article was the result of a research project approved by the Research Deputy of Ilam University of Medical Sciences under the ethics code of IR.MEDILAM.REC.1399.266. The researchers are obliged to sincerely express their gratitude to the colleagues in the research deputy of the university and all those who assisted us in conducting this study.

References:

1. Melnyk BM, Kelly SA, Stephens J, Dhakal K, McGovern C, Tucker S, et al. Interventions to improve mental health, well-being, physical health, and lifestyle behaviors in physicians and nurses: a systematic review. Am J Health Promot. 2020;34(8):929-41.

2. Butterworth P, Schurer S, Trinh T-A, Vera-Toscano E, Wooden M. Effect of lockdown on mental health in Australia: evidence from a natural experiment analysing a longitudinal probability sample survey. Lancet Glob Health. 2022;7(5):e427-e36.

3. Mehrabian F, Kashi S, Ganje Markieh Z. Investigating the Mental Health Status and Its Related Factors among the Students of Guilan

University of Medical Sciences. Res Med Educ. 2022;14(1):73-8.

4. Noorbala AA, Yazdi SAB, Faghihzadeh S, Kamali K, Faghihzadeh E, Hajebi A, et al. A Survey on mental health status of adult population aged 15 and above in the Province of Ma-zandaran, Iran. Arch Iran Med.. 2017;20(13):S83-S6.

5. Litz BT, Cummings MH, Grunthal B, McLean CL. A public health framework for preventing mental disorders in the context of pandemics. Cogn Behav Pract. 2021;28(4):519-31.

6. Noorbala AA, Nemani, F., Yahyavi dizaj, J., Anvari, S., & Mzhmoud Pourazari, M. Burden of Mental Disorders: A Study of the Middle East Countries for the Period 2000- 2017. J Med Counc Islam Repub. 2020;38(1):19-26

7. Rezaei N, Asadi-Lari M, Sheidaei A, Khademi S, Gohari K, Delavari F, et al. Liver cirrhosis mortality at national and provincial levels in Iran between 1990 and 2015: A meta-regression analysis. Plos one. 2019;14(1):e0198449.

8. Aryaie M, Sokout T, Moradi S, Abyad A, Asadollahi A. Frailty and Mental Health Disorders Before and During COVID-19 Occurrence in Older Population in Iran: A Longitudinal Re-peated-Measures Study. J Prim Care Community Health. 2022;13:21501319221126979.

9. Veisani Y, Delpisheh A, Mohamadian F. Prevalence and gender differences in psychiatric disorders and DSM-IV mental disorders: a population-based study. Biomed Res Ther. 2018;5(1):1975-85.

10. Heidari M, Ghodusi Borujeni M, Kabirian Abyaneh S, Rezaei P. The effect of spiritual care on perceived stress and mental health among the elderlies living in nursing home. J Relig Health.. 2019;58(4):1328-39.

11. Jafari N, Loghmani A, Montazeri A. Mental health of medical students in different levels of training. Int J Prev Med. 2012;3(Suppl1):S107.

12. Veisani Y, Delpisheh A, Mohamadian F, Valizadeh R. Trends of suicide attempts and completed suicide in Ilam province of Iran; A demographic analysis study. Bull Emerg Trauma. 2018;6(3):245.

13. Noorbala AA, Hajebi A, Faghihzadeh E, Nouri B. Mental health survey of the Iranian adult population in 2015. Arch Iran Med. 2017;20(3):128.

14. Barry MM. Addressing the determinants of positive mental health: concepts, evidence and practice. Int J Ment Health Promot. 2009;11(3):4-17.

15. Viana MC, Andrade LH. Lifetime prevalence, age and gender distribution and age-of-onset of psychiatric disorders in the São Paulo Metropolitan Area, Brazil: results from the São Paulo Megacity Mental Health Survey. Braz J Psychiatry. 2012;34:249-60.

16. Shirzadi M, Jozanifard Y, Eskandari S, Farhang S, Khazaei H. An epidemiological survey of psychiatric disorders in Iran: Kermanshah. Asian J Psychiatr . 2019;43:67-9.

17. Fallahzadeh H, Momayyezi M, Nikokaran J. Prevalence of depression, anxiety and stress in Yazd (2013). Tolooebehdasht. 2016;15(3):155-64.

18. Penders KA, Dierickx S, Steenhaut P, Dierckx E, Rossi GM. Epidemiological aspects of personality disorders in older adults. Tijdschr Gerontol Geriatr. 2020;51(2).

19. Kessler RC, Rubinow D, Holmes C, Abelson J, Zhao S. The epidemiology of DSM-III-R bipolar I disorder in a general population survey. The Science of Mental Health: Routledge; 2019. pp. 11-21.

20. Chang S, Abdin E, Shafie S, Sambasivam R, Vaingankar JA, Ma S, et al. Prevalence and correlates of generalized anxiety disorder in Singapore: Results from the second Singapore Mental Health Study. J Anxiety Disord. 2019;66:102106.

21. Mahmoud Tavousi, Ali Asghar Haeri Mehrizi, Akram Hashemi, Fatemeh Naghizadeh, Ali Montazeri. Mental health in Iran: a nationwide cross sectional study. Payesh Health Mon J. 2016;15(3):233-9.