Mental Health Survey of the Iranian Adult Population in 2015

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Abstract

Background: Mental disorders influence people with a high prevalence and exert remarkable burden on community members. This study was carried out aiming to assess mental health status within the age range category of 15 and above in the Islamic Republic of Iran.

Methods: The statistical population of this cross-sectional survey consisted of residents of urban and rural areas in Iranian provinces. An estimated sample size of 36000 people was chosen using systematic random sampling and the cluster method. Access was provided by the contribution of the Geographical Post Office for each province. The GHQ-28 was used as a screening tool for mental disorders. Data analysis was carried out using SPSS-18 software.

Results: The results were gathered by the traditional scoring method. A total of 23.44% of samples were suspected of having mental disorders. The prevalence of suspicion for mental disorders was higher in urban (24.55%) than rural areas (20.89%). The prevalence of anxiety and somatization symptoms was higher than social dysfunction and depression symptoms. The outcomes also revealed that the prevalence of suspicion for mental disorders increased noticeably with aging. Suspicion for these disorders was more common in women, divorcees and widows, illiterates, less educated, unemployed and disabled individuals compared with other potential groups of the society.

Conclusion: Comparison of the outcomes from this study with the research conducted in 1999, demonstrated an increasing prevalence rate of suspicion for mental disorders. Therefore, it is mandatory for Iranian public health authorities to take the needed steps to ensure that necessary requirements encompassing prevention and promotion of mental health are implemented.

Keywords: Adult population, general health questionnaire (GHQ-28), Iran, mental health status

Introduction

Mental health is one of the criteria determining public health. It is the state of psychological well-being or absence of a mental disorder in a person which enable him to recognize his adaptation ability to stress of daily life, and have satisfactory and effective participation within the social context of the community where he/she resides.[1] Mental and behavioral disorders contribute to a significant proportion of disease burden. It was estimated that, in 1990, mental and neurological disorders accounted for 10% of the total Disability Adjusted Life Years (DALYs) lost due to all diseases and injuries, and by 2020, it is predicted that the burden of these disorders will have increased to 15%. Depression ranked as the fourth major

cause of disease burden in 1990 and it is projected to be the second cause after ischemic heart disease in 2020.[2]

Today, most countries in the world are facing numerous psychosocial stresses and problems; such an ongoing trend has created tremendous changes in the realm of essential healthcare requirements. Thereby, mental disorders are a health priority as top causes of disability and early death.[3]

Although mental disorders in societies have long been confirmed, during the last century, a variety of statistical methods have been used to estimate the prevalence of these disorders. In the past, investigations and epidemiological studies of mental disorders were carried out on the basis of existing records of patient information or interviews. Today, with the development of reliable screening questionnaires and standard clinical interviews, more accurate estimates of mental disorders in the world are available.[4–5]

Mental and behavioral disorders are common, affecting more than 25% of all people at some time during their life[1] (WHO, 2001). According to the 2013 NSDUH, the estimated 12-month prevalence of mental illness, excluding substance use disorders, was 18.5% among adults aged 18 and higher.[6]

Results from a review of 174 surveys across 26 high-income countries and 37 low- and middle-income counties identified substantial inter-survey heterogeneity in the prevalence of common mental disorders. Findings across all studies indicate that on average one in five adults experienced a common mental disorder within the past 12 months and 29.2% experienced a common mental disorder throughout their lifetime.[7] Across high-,

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middle- and low-income countries, females were more likely to experience mental disorders than males.[8–9]

Results show that mental disorders are quite common in all studied countries. The lifetime prevalence estimates of any disorder ranges 18.1% – 36.1%. According to the World Health Organization (2012), lifetime prevalence of mental disorder was found among more than one-third of respondents in five countries (Colombia, France, New Zealand, Ukraine, and the United States). More than one-fourth of respondents in six countries (Belgium, Germany, Lebanon, Mexico, the Netherlands, South Africa), and more than one-sixth of respondents in four additional countries (Israel, Italy, Japan, Spain) experienced mental disorders. Prevalence of mental disorders is 13.2% in China and 12% in Nigeria.[10–11]

Nationwide studies on the epidemiology of mental disorders in Iran, conducted during the years 1999 to 2015, have used different tools for screening and diagnosis of mental disorders. The instrument used in studies conducted by Noorbala, et al. (1999 and 2015) was the general health questionnaire (GHQ-28).[12] The instrument used by Mohammadi, et al. (2001) was Schizophrenia and Affective Disorders Scale (SADS),[13] while Sharifi, et al. (2011) used the Comprehensive International Diagnostic Interview (CIDI) and GHQ-28 for diagnosis of mental disorders.[14] Therefore, it is not reasonable to compare the results of these studies due to their difference in tools and scoring methods. It should be noted that the prevalence of mental disorders in studies conducted with the GHQ-28 questionnaire in Iran have ranged from 21% to 34.2%. This extremely variable entity can be largely attributed to differences in study populations and changes in social, economic, and political environments.[9,15–17]

Epidemiological studies of mental disorders have an important role in determining mental health status of the general population, identification of demographic factors associated with these disorders and also estimation of resources required for the country's health services; therefore, this research aimed to survey the mental health situation of an adult Iranian population, identify factors contributing to mental disorders and provide suggestions and appropriate programs for those involved in delivering mental health services.

Method

This study was conducted as a cross-sectional study between December 2014 and January 2015. The study population included people within the age range of 15 and higher living in urban and rural areas of the country. The systematic random cluster sampling method was used for designing the present study. In each of the 30 provinces of Iran, three cities were selected randomly (the provincial capital plus two other cities). Access to the population sample was provided by the contribution of the Geographical Post Office of each province.

Sample

Due to the importance of obtaining reliable results at the provincial level, we assumed a 35% prevalence of mental disorders, type one error rate of 5% and an accuracy of about 3%. The number of samples in each province was about 1,000. Considering the effect of cluster sampling, which is about 1.2, the number of samples in each province was calculated to be 1,200 in 100 clusters with 12 samples. Therefore, the total number of subjects was estimated to yield an overall sample size of 36,000 people.

Measures

The instrument used in this study, in addition to demographic factors (age, sex, marital status, occupation, education, place of residence and questions on history of mental illness), was the General Health Questionnaire -28. This questionnaire is a tool for implementation in various scenarios and assesses the mental health status of the general population. The questionnaire was developed by Goldberg in 1972 and it was designed to discover and identify mental disorders in the community, health centers and different situations in conjunction with other well-known screening tools.[18]

The primary form of the questionnaire consisted of 60 questions that included visible abnormal signs of thoughts, feelings and social behavior. This questionnaire has been revised frequently, and its shortened forms of 30, 28 and 12 questions are also available. Different versions of the questionnaire have been translated to 36 different languages around the world and are used widely in different countries. The 28-item General Health Questionnaire form was adopted in 1979 by Goldberg & Hillier, which was based on factor analysis of primary data and involved 4 subscales, and each scale has 7 questions. These subscales measure symptoms of somatization, anxiety, social dysfunction and depression.[19] The high correlation between the results of the general health questionnaire forms 28 and 60 in the diagnosis of mental disorders demonstrates that the GHQ-28 is effective in assessment of severity of mental disorders and has the ability to be used as a screening tool, saving time and money in behavioral research.[20] In this study, the traditional scoring method was applied, giving 0-0-1-1 to choices of each question. The maximum score of participants will be 28 in the questionnaire. The cutoff point used in this study was a score of 6, and a score of 2 was considered for each subscale. This cutoff point was obtained from standardization of this instrument in Iran (84.2% sensitivity, 94.4% specificity, and 7.8 % overall misclassification rate). This method of scoring was used by researchers in the study carried out in 1999.[12]

Data collection

The study was started in December 2014 and lasted until the end of January 2015. For completion of questionnaires, 750 psychology graduates with master's and bachelor's degrees were trained in a one-day training course. The interviewers were arranged in 2-person teams (one man and one woman) and were referred to each cluster head. The interviewers evaluated 12 adults in each cluster, according to the instruction manual prepared for this study. In each household, one adult aged 15 and above was investigated; if there was more than one eligible individual, only one person would be evaluated randomly, in accordance with the given checklist. In each cluster, six age groups were targeted (15 – 25, 26 – 35, 36 – 45, 46 – 55, 56 – 65, and 66 years and above). In each cluster, one male and one female were studied from each age group. The average time to complete each questionnaire was 45 minutes. Analysis of data in this study was carried out using the SPSS-18 software.

Statistical Analysis

Data were analyzed using SPSS 18 and STATA 12 software. Data are shown as: number, percent, mean and standard deviation.

The Shapiro-Wilk test was used to explore the normal distribution of continuous variables and it showed that all continuous variables were normally distributed. For comparing the results, Chi-square, independent sample t-test and multiple logistic regression tests were used. *P*-values less than 0.05 were considered as statistically significant.

Results

Demographic characteristics of the study population are shown in Table 1. As this table shows, from a total of 36000 samples, the interviewers had access to 35813 individual. Therefore, it was not possible to complete the questionnaire for 197 people due to lack

Table 1. Prevalence of mental disorders suspicion in terms of demographic variables (n = 35813)

Variable	Sample size (%)	Suspected cases (n)	Prevalence rate (%)	Confidential Interval	*P*-value
Gender					< 0.001
Female	17976 (50.2)	4954	27.55	(26.91, 28.22)	
Male	17837 (49.8)	3440	19.28	(18.71, 19.87)	
Place of residence					< 0.001
Urban	25192 (70.3)	6183	24.55	(24.01, 25.07)	
Rural	10621 (29.7)	2211	20.89	(20.05, 21.06)	
Age group					< 0.001
10–19	1954 (5.46)	258	13.20	(11.73, 14.78)	
20–29	6595 (18.42)	1279	19.40	(18.44, 20.37)	
30–39	6606 (18.45)	1309	19.81	(18.86, 20.79)	
40–49	5983 (16.71)	1328	22.19	(21.15, 23.27)	
50–59	6148 (17.17)	1543	25.09	(24.02, 26.01)	
60–69	5240 (14.63)	1544	29.44	(28.23, 30.72)	
70 +	3287 (9.16)	1153	35.09	(33.44, 36.74)	
Marital status					< 0.001
Single	5283 (15.83)	980	18.55	(17.51, 19.62)	
Married	24611 (74.35)	5482	22.27	(21.75, 22.79)	
Widowed	2747 (8.44)	1113	40.52	(38.67, 42.38)	
Divorced	362 (1.13)	159	43.92	(38.74, 49.21)	
Separated	78 (0.25)	28	35.90	(25.34, 47.56)	
Education					< 0.001
Illiterate	6289 (20.91)	2337	34.22	(33.09, 35.36)	
Read & write	3990 (12.08)	1026	25.71	(24.36, 27.10)	
Elementary	4329 (13.10)	984	22.73	(21.49, 24.01)	
Secondary	4514 (13.61)	875	19.88	(18.99, 20.86)	
Diploma	7200 (21.92)	1434	19.92	(18.99, 20.86)	
Above diploma	1661 (5.13)	303	18.24	(16.41, 20.18)	
Bachelor	3540 (10.67)	641	18.11	(16.85, 19.42)	
Master & above	851 (2.57)	126	14.81	(12.48, 17.37)	
Occupation					< 0.001
Employed	9155 (27.67)	1508	16.47	(15.72, 17.25)	
Unemployed	3470 (10.59)	979	28.21	(26.72, 29.74)	
Income without job	418 (1.24)	108	25.84	(21.71, 30.32)	
Student	2395 (7.16)	393	16.41	(14.95, 17.95)	
Housewife	12283 (37.08)	3549	28.16	(28.09, 29.70)	
Retired	3273 (10.03)	708	21.63	(20.33, 23.08)	
Unable to work	850 (2.72)	367	43.18	(39.82, 46.58)	
Total	**35813 (100.0)**	**8394**	**23.44**	**(23.00, 23.88)**	

of access and collaboration. Among all participants, 17837 were male (49.8 %) and 17976 were female (50.2 %). A total of 25192 people lived in urban areas (70.30%) and 10621 people lived in rural areas (29.7%) (Table 1). In total, 23.44 % of individuals were suspected to have mental disorders (19.28% of males and 27.55% of females). The prevalence of suspicion for mental disorder was 24.55% in urban areas, and 20.89% in rural areas.

The lowest incidence of suspicion for mental disorder was in the 10 – 19 years age group (13.20%) and the highest incidence was in the age group 70 years and higher (35.09%).

According to findings shown in Table 1, the prevalence of suspicion for mental disorder was 18.55% in single individuals, 22.27%in married individuals, 40.52% in widowed individuals, 43.92% in divorced individuals, and 35.90% in separated individuals. The lowest incidence of suspicion for mental disorder pertained to people with master's degree or higher education level with 14.81%. A greater rate of suspicion for mental disorder was seen in the illiterate population (34.22%). The highest suspicion for mental disorder pertained to disabled people (43.18%)

while the lowest rate pertained to students (16.41%), and those employed with 16.47%.

Information on suspected cases on subscales of GHQ-28 are given in Table 2. These data show that a total of 29.8% of cases were suspected of somatization (35.56% of females and 22.50% of males), 29.50% were suspected of anxiety (33.83% of females and 25.10% of males), 16.70% were suspected of social dysfunction (17.87% of females and 15.50% of males), and 10.39% were suspected of severe depression (11.43% of females and 9.34% of males).

Information on the average and standard deviation of the participants in the GHQ-28 questionnaire and its scales are given in Table 3. As Table 3 shows, the average scores for females with somatization, anxiety, social dysfunction, depression and total score of GHQ-28 were higher than the average scores of males. The t-test analysis on the mean scores of both groups showed that a significant difference between males and females in terms of total GHQ scores and its subscales ($P < 0.05$).

Information on logistic regression coefficients related to

Table 2. Relative frequency distribution of prevalence of GHQ-28 subscales by gender

GHQ-28 subscales	Male (n %)	Female (n %)	Total (n %)
Somatization			
Score 2 and more	35.56	22.50	29.08
Score 1 and less	64.34	77.50	70.92
Anxiety			
Score 2 and more	33.83	25.10	29.50
Score 1 and less	66.17	74.90	70.50
Social dysfunction			
Score 2 and more	17.87	15.50	16.70
Score 1 and less	82.13	84.50	83.30
Depression			
Score 2 and more	11.43	9.34	10.39
Score 1 and less	88.57	90.66	89.61

Table 3. Comparing the mean scores of the participants scores in GHQ-28

GHQ-28 subscales	Mean	SD*	t	df	P-value
Somatization					**< 0.001**
Male	0.95	1.70	28.400	33558	
Female	1.53	2.07			
Anxiety					**< 0.001**
Male	1.04	1.73	18.557	34277	
Female	1.41	1.96			
Social dysfunction					**< 0.001**
Male	0.69	1.49	6.335	34621	
Female	0.41	1.21			
Depression					**< 0.001**
Male	0.41	1.21	6.713	34745	
Female	0.49	1.33			
Total					**< 0.001**
Male	3.01	5.11	18.780	32751	
Female	4.14	5.76			
*SD= Standard Deviation					

Table 4. Estimated Multiple Logistic regression coefficients and odds ratio

Variable	B	S.E.	*P*-value	OR	95% CI
Gender					
Male	- - -	- - -	- - -	- - -	- - -
Female	0.327	0.044	< 0.001	1.386	(1.272, 1.511)
Place of residence					
Rural	- - -	- - -	- - -	- - -	- - -
Urban	0.359	0.032	< 0.001	1.432	(1.345, 1.524)
Age	0.009	0.001	< 0.001	1.009	(1.007, 1.012)
Marital Status					
Married	- - -	- - -	- - -	- - -	- - -
Single	0.073	0.053	0.170	1.076	(0.969, 1.195)
Widowed	0.316	0.048	0.060	1.372	(1.250, 1.507)
Separated	0.467	0.249	< 0.001	1.596	(0.980, 2.597)
Divorced	0.970	0.111	< 0.001	2.637	(2.123, 3.275)
Education					
Masters and above	- - -	- - -	- - -	- - -	- - -
Bachelor	0.198	0.108	0.065	1.219	(0.987, 1.506)
Above diploma	0.230	0.117	0.052	1.258	(1.000, 1.584)
Diploma	0.300	0.103	< 0.004	1.350	(1.103, 1.653)
Secondary	0.328	0.106	< 0.002	1.388	(1.127, 1.710)
Elementary	0.448	0.107	< 0.001	1.565	(1.269, 1.930)
Read & write	0.498	0.108	< 0.001	1.646	(1.332, 2.034)
Illiterate	0.701	0.108	< 0.001	2.015	(1.630, 2.490)
Occupation					
Employed	- - -	- - -	- - -	- - -	- - -
Student	0.151	0.075	0.044	1.16	(1.00, 1.37)
Unemployed	0.592	0.051	< 0.001	1.81	(1.63, 1.99)
Income without job	0.197	0.045	< 0.001	1.22	(1.11, 1.33)
Retired	0.025	0.056	0.643	1.03	(0.92, 1.14)
Unable to work	0.666	0.081	< 0.001	1.95	(1.66, 2.28)
Constant	2.587	0.137	< 0.001	- - -	- - -

The result of univariate regression is not used because it decreases the confidence coefficients and increases the *P*-values.

the prevalence of suspicion for mental disorders in terms of demographic factors is presented in Table 4. The results in Table 4 show that the rate of suspected cases of mental disorder was higher in females than males, as well as in people living in urban areas compared to those residing in rural areas. The prevalence of suspicion for mental disorders increases with age. Moreover, it is lower in singles, more educated individuals, students, and employed individuals compared to the other groups.

Discussion

The results of this study revealed that about 1 out of 4 people was suspected to suffer from mental disorders. The prevalence of mental disorders evaluated by the GHQ-28 in Iran varied from 21% to 34.2%. The first nationwide study of mental disorders, conducted by Noorbala, et al. (1999), showed that 21% of the population in Iran, aged 15 years and higher, had mental disorders.[12] Mohammadi, et al. (2001), in a second national survey of mental disorders, used SADS as a diagnostic instrument and found the prevalence of mental disorders at 17.10%.[13] Sharifi, et al. (2011),

in the third nationwide survey of mental disorders, implemented the GHQ-28 and the CIDI as screening and diagnostic tools. In that study, the prevalence of mental disorders was 22.7%.[14] The difference seen in the results of these studies can be attributed to the statistical population, scoring methods and changes in social, economic, and political environment of Iran.

The results obtained from this study suggest that one out of four people is suspected of having mental disorders. Comparing these results with studies conducted by the World Health Organization (2012), it is evident that the prevalence of mental disorders in Iran is lower compared with the prevalence of psychiatric disorders in five countries, consisting of Colombia, France, New Zealand, Ukraine and the United States.[2] The prevalence trend of mental disorders in Iran increased from 21% in 1999 to 23.44% in this study, which indicates an upward trend for mental disorders in Iran.

Prevalence of suspicion for mental disorders was higher in females. A review of study findings, conducted in the world and Iran, confirms the finding of this study that women are more prone to mental disorders than men. The higher prevalence of suspicion

for mental disorders in women compared to men could be due to biological factors, sexuality roles, environmental & job stress factors and limitation of satisfaction source and lack of social participation of women in the current Iranian society.[11,17]

The trend of suspicion for mental disorder in females has changed from 25.9 to 28.2%. On the other hand, the prevalence of suspicion for mental disorder in males has changed from 14.9 to 19.28%. This result suggests that changes in mental disorder prevalence trends show men to be at greater risk for having mental disorders. This trend is likely due to factors such as population growth, men who are looking for employment and changing roles of men within the society.

This study revealed a significant correlation between age and the occurrence of suspicion for mental disorders. Prevalence rates increase with age, supporting the results of studies conducted by other researchers in the country.[9,13–15]

The highest prevalence of mental disorders in a study conducted by Mohammadi, et al. (2001) was in the age group of 41 – 55 years;[13] in another study conducted by Sharifi, et al. (2011), the highest prevalence rate was in the age group of 40 – 44 years.[14] There were no significant differences between the prevalence rates of suspicion for mental disorder in different age groups. Results from other studies in Iran also indicate that the prevalence of suspicion for mental disorder increases with age. Higher prevalence of mental disorders in the elderly, observed in this study, can be attributed to factors such as retirement, menopause and anxiety caused by biological changes and loneliness of older people.

In this study, the prevalence of suspicion for mental disorder among illiterate individuals was greater than other groups. The lowest incidence of mental disorders was among people with postgraduate and higher education, which confirms the findings of most studies conducted in Iran.[17] Social and cultural limitations and disability in using effective coping methods against stressful situations among illiterates and less educated individual can be reasons justifying their greater risk of mental disorders than people with higher education.

The findings of this study revealed that the prevalence of mental disorder suspicion were higher in unemployed individuals and people who were unable to work, compared to other groups. The mentioned findings are also in line with other investigations carried out in Iran and the world.[11,17] Disability and chronic disorders which affect performance, can be the most important factors in increasing the prevalence of suspicion for mental disorders in individuals. Unemployment, lack of income, limited social relations and monotony of life could result in mental disorders.

The results of this study also imply that the lowest rate of suspicion for mental disorders was among single people (never married), while the highest prevalence of suspicion for mental disorder was in people who were divorced or widowed. The higher prevalence of suspicion for mental disorders in this study can be attributed to the impact of cultural and societal views, presence of stressors due to separation and divorce and financial problems. Prevalence of suspicion for mental disorder was higher among married couples compared with single individuals. This is consistent with findings of most studies conducted in Iran. Most epidemiological studies in the world show that the prevalence of mental disorders in singles is higher than married individuals. The higher prevalence of suspicion for mental disorders among married couples can be due to marital problems, particularly in the first years after their marriage.

In terms of place of residency, the highest prevalence of suspicion for mental disorders was among individuals residing in urban rather than rural areas. This is not congruent with findings of surveys conducted by Noorbala, et al. (1999),[12] while it confirms the results of Mohammadi, et al. (2001) and Sharifi, et al. (2011).[13–14] The higher prevalence of mental disorders in urban areas can be attributed to cost of living, traffic, environmental pollution, and reduced cultural context of human communication in urbanity.

The findings of this study suggest that somatization, anxiety, social dysfunction and depressive symptoms were more common among females than males and in urban areas than rural areas. The prevalence of suspicion for mental disorders increased with age and decreased with higher levels of education. The prevalence of suspicion for mental disorders was higher in the unemployed, housewives and divorcees than other groups. Although research literature emphasizes higher prevalence of anxiety and social dysfunction in males and a higher incidence of depression and somatization in females, the results from this study show that due to economic conditions, cultural and social decline, especially emotional stress of child rearing, there is a higher incidence of mental disorders in females than males.

Acknowledgments

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