Original Article

A Survey on Mental Health Status of Adult Population Aged 15 and above in the Province of Gilan, Iran

Ahmad Ali Noorbala MD•[1], Seyed Abbas Bagheri Yazdi MSc[2], Soghrat Faghihzadeh PhD[3], Koorosh Kamali MD PhD[4], Elham Faghihzadeh PhD Candidate[5], Ahmad Hajebi MD[6], Shahin Akhondzadeh PhD[7], Alia Shakiba MD[8], Shirin Baftahchi MA[9], Bijan Skandari MA[10]

Abstract

Introduction: The main objective of this study was to determine the mental health status of population aged 15 and over in the province of Gilan in 2015.

Methods: The statistical population of this cross-sectional field survey consisted of residents of urban and rural areas of Fars in Iran. An estimated sample size of 1200 people was chosen using systematic random cluster sampling. The access was provided by the contribution of Geographical Post Office of Rasht, Fouman, and Hashtpar cities. The General Health Questionnaire-28 (GHQ-28) was used as the screening tool for mental disorders. The analysis of data in the current study was carried out using the SPSS-18 software.

Results: Using GHQ traditional scoring method, the results showed that 18% of the studied population (19.3% of the females and 16.6% of the males) were considered as likely cases. The prevalence rate of mental disorders was 18.7% for urban and 17.7% for rural areas. Prevalence rates of somatization and anxiety were higher than social dysfunction and depression and women revealed higher prevalence for these disorders compared with men. It was also shown that the prevalence rate significantly increased with age and was higher in women, people aged 65 and above, urban residents, widowed or divorced, illiterate, and unemployed people.

Conclusion: The results of this study showed that about a fifth of the people in the province are suspected to have mental disorders. Comparing the results of the current survey with those of the study conducted in 1999 suggests that the prevalence of mental disorders is on the decrease in this province (from 25.2% in 1999 to 18% in 2015). Therefore, it seems vital that the officials take action in order to improve and maintain mental health status of the people who are at risk.

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

Introduction

Gilan province lies along the northwestern end of the Alborz mountain range and the southwest coast of the Caspian Sea. It has a total area of 14,044 km², and a population of 2,530,696. Totally, 49.7% of the population are males and 50.3% are females. Average household size is 3.19. Gilan province includes 52 cities and 109 villages. Gilan is the 3rd most densely populated province in Iran after Tehran and Alborz, with 179.9

Authors' affiliations: [1]Psychosomatic Medicine Research Center, Imam Khomeini Hospital, Tehran University of Medical Sciences, Tehran, Iran, [2]Department of Mental Health, Ministry of Health and Medical Education of Iran, Tehran, Iran, [3]Department of Biostatistics and Epidemiology, Faculty of Medicine, Zanjan University of Medical Sciences, Zanjan, Iran, [4]Department of Public Health, School of Public Health, Zanjan University of Medical Sciences, Zanjan, Iran, [5]Department of Biostatistics, Paramedical School, Shahid Beheshti University of Medical Sciences, Tehran, Iran, [6]Research Center for Addiction and Risky Behaviors (ReCARB), Psychiatric Department, Iran University of Medical Sciences, Tehran, Iran, [7]Psychiatric Research Center, Roozbeh Hospital, Tehran University of Medical Sciences, Tehran, Iran, [8]Psychiatrist, Psychiatry and Psychology Research Center, Tehran University of Medical Sciences, Tehran, Iran, [9]Responsible Manager of Mental Health office of Gilan Provincial Health Center, Gilan University of Medical Sciences, Rasht, Iran, [10]Mental Health Expertise of Gilan Provincial Health Center, Gilan University of Medical Sciences, Rasht, Iran.
•**Corresponding author and reprints:** Ahmad Ali Noorbala MD, Head of Psychosomatic Medicine Research Center, Imam Khomeini Hospital, Keshavarz Blv., Tehran, Iran. Tel: +98-21-61190000, E-mail: noorbala1@tums.ac.ir.
Accepted for publication: 18 October 2017

inhabitants in each square kilometer. Gilan has a relatively high rural density, as 37.95% of the population live in rural areas. Population density decreases from west to east. The original inhabitants speak with an accent called the Gilaki accent. Rate of literacy is 94.7%, the province's share of the total GDP is 2.3%, and the unemployment rate is 13.2%. The climate all over the Gilan province is a typical "Hyrcanian" climate which makes it an exceptionally humid and green land. One of the most fatal earthquakes of Iran took place in 1990, which nearly completely demolished the two towns of Manjīl and Rūdbār located in the southern area of Gilan, in the heights of the Alborz Mountains. This fatal earthquake killed some forty thousand people and damaged several hundreds of villages of this province, most of which have been restructured and renovated throughout the last decades.[1]

Gilan Province has 192 health centers, 95 in urban and 97 in rural areas. There are 31 hospitals in Gilan with a total capacity of 4845 beds of which 226 are specialized psychiatric beds, equaling 1 psychiatric bed for every 10,000 populations. Also, there are 339 Methadone Maintenance Therapy (MMT) centers and 3 Drop in Centers (DIC), which provide specific services for patients with substance use disorders. There are 1001 general practitioners, with 304 of them trained for mental health services; 716 specialists, and 137 sub-specialists, of whom 41 are psychiatrists, work in Gilan.

In total, 30 psychologists (12 with master and 18 with bachelor degree) work in the public-governmental system. In total, 16,493 patients have already received mental health services from public-governmental system.[2]

In the national mental health survey in 1999, Noorbala, et al. reported the prevalence of mental disorders among persons who are 15 years or older to be 19% (14.3% in males and 22.7% in females) according to the national survey of mental health.[3] Understanding the epidemiology of mental health problems and its associated factors is fundamental to implementing appropriate interventions and providing services to the general population.

Materials and Methods

This cross-sectional field study was carried out in December and January (2014-2015) and included the population of age group 15 years and above living in both urban and rural regions of the province. Systematic random cluster sampling was used to select 1200 persons from Rasht (provincial center), Fouman, and Hashtpar. The samples were selected using the Post Office Software.

The 28-item General Health Questionnaire (GHQ–28) was used as the screening tool for detection of mental disorders. This questionnaire was developed by Goldberg & Hillier (1979) for screening somatization, anxiety, social dysfunction and depression.[4] A review of studies on the validation of the GHQ–28 in different countries demonstrates its high validity and reliability as the screening tool for mental disorders in the community.[5] It includes four subscales with 7-item criteria related to the somatization, anxiety, social dysfunction and depression symptoms. There are different ways of scoring GHQ-28, such as Likert and the traditional scoring method.[6] Using the traditional

scoring method, the best cutoff point for this questionnaire was score 6 and for each subscales were 2. These cutoff points were obtained through a research on standardization of this screening tool in Iran.[7]

The survey started in December 2014 and lasted until January 2015. The survey team (a man and a woman) referred to the samples' houses based on their 10-digit Postal Code and beginning with each of head clusters in accordance with the survey completion guideline manual. Based on six age groups (15 to 25 years, 26 to 35 years, 36 to 45 years, 46 to 55 tears, 56 to 65 years and 66 years and over), 12 adults (6 males and 6 females) were evaluated in each cluster. In each research unit (Household), only one person was examined. In cases when more than one individual was eligible, the sample was selected randomly.

Data related to the survey were analyzed using the SPSS-18. Logistic regression modelling was used to determine the factors that affect mental disorders. The average time to complete each questionnaire was 45 minutes.

Results

A total of 1070 persons completed the questionnaire. Table 1 shows that 18% of the total population were at risk for psychiatric disorders (16.6% in males and 19.3% in females). The highest prevalence of mental disorders was seen among residents of urban areas (18.7%), people who were 65 years or older (32.4%), the divorced or widowed (23%), illiterate people (22.7%) and those who were unemployed (26.7%). Information related to logistic regression of variables and the odds ratio are presented in Table 2. This table suggests that the risk of mental disorders for females was 1.301 times that for males. The risk also increased with age. Divorced or widowed people were 2.851 times more at risk

Table 1. Prevalence of mental disorders in terms of the demographic variables (n= 1070)

Variables	Sample size (*n*)	Suspected cases (*n*)	Prevalence rate (%)
Gender			
Male	517	86	16.6
Female	553	107	19.3
Place of residence			
Rural	722	128	17.7
Urban	348	65	18.7
Age group (years)			
15–24	214	27	12.6
25–44	398	64	16.1
45–64	354	70	19.8
+65	104	32	32.4
Marital status			
Unmarried	356	71	19.9
Married	523	78	14.9
Widowed, divorced	191	44	23.0
Occupation			
Employed	228	29	12.7
Unemployed	172	46	26.7
Student	103	15	14.7
Housewife	399	83	20.8
Retired	168	20	11.9
Education			
Illiterate	255	58	22.7
Primary & Secondary	331	65	19.6
Diploma	256	37	14.5
Graduate	189	26	13.8
Postgraduate	39	7	17.9
Total	1070	193	18.0

Table 2. Estimated logistic regression coefficients and odds ratios

Variables	B	S.E.	Sig.	OR	95% C. I. for OR	
					Lower	Upper
Marital Status						
Married	- - -	- - -	- - -	- - -	- - -	- - -
Unmarried	0.372	0.347	0.283	1.451	0.735	2.862
Widowed, or divorced	1.048	0.439	0.017	2.851	1.206	6.736
Gender						
Male	- - -	- - -	- - -	- - -	- - -	- - -
Female	0.263	0.294	0.372	1.301	0.730	2.317
Age	0.002	0.008	0.749	1.002	0.988	1.017
Place of residence						
Rural	- - -	- - -	- - -	- - -	- - -	- - -
Urban	0.192	0.196	0.326	1.212	0.825	1.780
Occupation						
Employed	- - -	- - -	- - -	- - -	- - -	- - -
Retired	0.149	0.287	0.342	1.102	0.776	1.365
Student	0.115	0.478	0.810	1.122	0.440	1.863
Housewife	0.749	0.359	0.037	1.914	1.047	2.271
unemployed	1.035	0.353	0.003	2.816	1.409	4.130
Education						
Graduated	- - -	- - -	- - -	- - -	- - -	- - -
Post Graduated	0.130	0.257	0.312	1.139	0.689	1.884
Diploma	0.003	0.345	0.293	1.203	0.510	1.971
Primary & Secondary	0.244	0.298	0.414	1.184	0.437	1.706
Illiterate	0.344	0.504	0.494	1.411	0.826	2.286

compared with singles. Unemployed persons were 2.816 times more at risk compared with employed individuals. The risk was 1.411 times higher among illiterate people compared with the educated.

The obtained data also showed that considering subscales of the used questionnaire, 31% of the studied cases were suspected of somatization (23% of men and 38% of women), 31% were at risk of anxiety (26% of men and 36% of women), 19% were suspected of social dysfunction (16% of men and 22% of women), and 13% were at risk of depression (10% of men and 15% of women).

Discussion

The results of this study revealed that 18% of the studied population of the province are likely cases of mental disorders, while the prevalence rate of mental problems obtained through the first study conducted in the province in 1999 was 19%,[8] indicating a mild decrease in the prevalence of mental disorders.[9] This decrease can be attributed to the changes in social structure, economic and political situations, and social welfare of population.

The present study shows that the prevalence rate was 19.3% for females and 16.6% for males, whereas the study in 1999 reported the rate of 22.7% for females and 14.3% for males. A review of the previous studies carried out in other countries,[10] and Iran,[11–13] confirms the fact that the prevalence of mental disorders is higher in women, which is in line with the findings of the current study. Biological factors, social roles, environmental and occupational tension, limitation of satisfaction and social participation can account for the higher prevalence rate in women.

The study demonstrates a higher prevalence rate for urban areas (18.7%) than rural areas (17.7%). This finding is in line with the results of the survey conducted in 1999: 20.5% in rural regions and 17% in urban regions.[11] Economic limitations, lack of facilities, and also insufficient access to the outside world can account for this higher prevalence rate in rural areas.

The survey also suggests that increase in age results in a higher prevalence rate of mental disorders, and the highest rate pertained to people aged 65 and above (32.4%), supporting the result of the study carried out in 1999.[8] Factors such as retirement, menopause, and biological changes can be considered as probable causes.

The study shows that the rate of mental disorders among illiterate groups is 22.7%, compatible with the findings of the study conducted in 1999,[8] and those of other studies conducted all over the world.[10] This can be explained by sociocultural limitations in such groups which may result in their disability to cope with stress.

The unemployed individuals were more at risk of mental disorders (26.7%), comparable with the findings of the study in 1999 and those of studies conducted in Iran[11–13] and other countries.[10] Economic problems and insufficient income in unemployed people, and social limitations in females can be considered as possible explanations for this higher rate.

Divorced and widowed groups showed higher rate than married or unmarried population. Loneliness and other social constraints caused by divorce can explain the significant increase in the prevalence rate of mental disorders. Compared with men, women were more at risk of somatization, anxiety, social dysfunction and depression, supporting the results of the study in 1999. In

this study, we found that somatization and anxiety symptoms were more prevalent than depression and social dysfunction. This observation is in accordance with results of the previous national survey in 1999.[11] High environmental stressors, financial problems and social changes may cause anxiety, difficulty expressing emotions, and cultural frames may lead to anxiety and somatization disorders.

Conflict of interest

The authors declare that they have no conflict of interest.

Acknowledgments

References

1. Internet database of Iran Statistics Center of, demography of the province of the country on the basis of the results of the population and house census, 2016. Available from: URL: https://www.amar.org.ir. (Accessed Date: October 2015).

2. The function reports of health and treatment department of Gilan University of Medical Sciences, 2016.

3. Noorbala AA, Mohammad K, Bagheri Yazdi SA, Yasamy MT. A view of mental health in Iran. Iranian Red-Crescent Society Publication, 2001, Tehran, Iran.

4. Goldberg DP. The detection of psychiatric illness by Questionnaire. *Oxford University Press*. 1973; London.

5. Goldberg DP, Hillier VF. A scaled version of general health questionnaire. *Psychological Medicine*. 1979; 9: 131 – 145.

6. Goldberg DP, Gater R, Sartorius N, Ustun TB. The validity of two version of GHQ in general health care. *Psychological Medicine*. 1997; 27(1): 191 – 197.

7. Noorbala AA, Bagheri Yazdi SA, Mohammad K. The validation of general health questionnaire-28 as a psychiatric screening tool. *Hakim Health Sys Res*. 2004; 11(4): 47 – 53.

8. Noorbala AA, Mohamad Kazem, Bagheri Yazdi SA, Yasamy MT. Study of the mental health status of the 15 years and older people in Islamic Republic of Iran. *Hakim Research Journal*. 2002; 5 (1): 1 – 10.

9. Noorbala AA, Faghihzadeh S, Kamali K, Bagheri-Yazdi SA, Hajebi A, Mousavi MT, et al. Mental health survey of the adult population of Iran in 2015. *Arch Iran Med*. 2017; 20(3): 128 – 134.

10. Steel Z, Marnane C, Iranpour C, Chey T, Jackson JW, Patel V, et al. The global prevalence of common mental disorders: a systematic review and meta-analysis 1980–2013. *Int J Epidemiol*. 2014; 43: 476 – 493.

11. Noorbala AA, Bagheri Yazdi SA, Yasamy MT, Mohammad K. Mental health survey of the adult population in Iran. *Br J Psychiatry*. 2004; 184: 70 – 73.

12. Mohammadi MR, Davidian H, Noorbala AA, Malekafzali H, Naghavi HR, Pouretemad HR, et al. An epidemiological survey of psychiatric disorders in Iran. *Clin Pract Epidemiol Ment Health*. 2005; 1: 16.

13. Sharifi V, Amin-Esmaeili M, Hajebi A, Motavalian A, Radgoodarzi R, Hefazi M, et al. Twelve-month prevalence and correlates of psychiatric disorders in Iran: The Iran mental health survey-2011. *Arch Iran Med*. 2015; 18(2): 76 – 84.