



# Epidemiological survey of mental disorders in urban regions of Ardabil province (Iran)

M. NARIMANI<sup>1</sup> PHD, S. SADEGHIEH AHARI<sup>3</sup> MD & R. ABDI<sup>2</sup> PHD

<sup>1</sup>Full Professor and Faculty Member, Department of Psychology, <sup>2</sup>Assistant Professor and Faculty Member, ELT Department, Faculty of Humanities, University of Mohaghegh Ardabili, and <sup>3</sup>Assistant Professor, Specialist in Community Medicine and Faculty Member, Department of Community Medicine, Ardabil University of Medical Sciences, Ardabil, Iran

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**Correspondence:**

S. Sadeghih Ahari  
Department of Community Medicine  
Ardabil University of Medical Sciences  
Daneshgah Street  
Ardabil 5618953141  
Iran  
E-mail: s.sadeghiyeh@arums.ac.ir

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## Accessible summary

- This survey showed that 27.83% of the subjects suffer from different mental disorders.
- A higher prevalence rate of mental disorder exists among women than men, and the 45–65 age group had the highest prevalence rate. Also, the prevalence rate of mental disorders among illiterate people is higher as compared to literate ones.
- A strong inverse relationship is shown to exist between social position and the mental health measures.
- The findings of this study are a warning to health officials and a base for future community-based nursing plans.

## Abstract

For any informed decision making about community-oriented nursing, it is necessary to map out the community regarding the psychological factors. This study is an attempt to estimate the mental disorders' rate among the age group of 15–65 in the urban areas of Ardabil province. A sample of 1430 individuals was selected through random multistage cluster sampling. The instruments employed in this study included Personal Data Questionnaire and the 28-item General Health Questionnaire (GHQ). The findings revealed that, on the whole, 27.83% of the subjects suffer from different mental disorders. The prevalence rate of mental disorders appeared to vary from 13.3% to 44.4% based on the place of residence, and the highest prevalence rate was found to be *social dysfunction* and *anxiety* disorders. According to GHQ test, the prevalence rate of social dysfunction, anxiety, somatization and depression disorders were 32%, 22.30%, 20% and 14%, respectively. The study also showed that the prevalence rate of mental disorders was higher among women as compared with men (34.2% vs. 21.1%). The findings of this study is hoped to contribute to community-oriented nursing practice and education.

## Introduction

It has been already warned that the international burden of mental psychiatric disorders is enormous and continues to grow (Ustun 1999). Approximately, 120 million people around the world suffer from serious mental problems, 50 millions are struggling with epilepsy, and 30 millions are

afflicted by dementia (Noorbala *et al.* 1998). Moreover, according to Eaton *et al.* (2008), mental disorders as a group have a high prevalence compared with many other health conditions. The daunting statistics about mental disorders in various countries and the result of some research carried out in Iran bears testimony to the importance and necessity of studies in an attempt to develop a

sound base for future mental health plans. As such, there is a need to investigate the phenomenon and determine the most prevalent type of disorders.

Recently, there is a tendency among researchers to examine this frightening phenomenon. As an instance, Chi *et al.* (2005) used the General Health Questionnaire (GHQ) to survey 14639 people from Zhejiang in China. Their study showed that the adjusted overall rate of mental disorders was 17.3% (95% confidence interval = 16–18.7%). The most common specific disorders were major depressive disorder, alcohol use disorder (2.9%), dysthymia (1.6%) and specific phobias (1.2%). The overall prevalence was higher in rural areas than urban ones, and it was slightly higher in women as compared with men.

Kessler *et al.* (1994) in a study that covered 8098 people of 15–54 years of age from the normal population of the USA showed that approximately 50% of the subjects suffered at least from one mental disorder in their life time. About 30% of them reported experiencing at least one type of disorder within the past year. Results of this survey also showed that women had higher prevalence in *affect* and *anxiety* disorders than men, and that the prevalence rate of drug addiction and personality disorder was higher in men than women. Furthermore, the most notable prevalence rate of disorders was shown to belong to the age group of 25–34 years old. In their study, however, no significant difference was found between urban and rural districts in terms of prevalence rate.

Mofidi *et al.* (2008) in a research on 1000 people from general population of Sannandaj (a city in the west of Iran), in which GHQ and Questionnaire on Attitudes Towards Suicide was used, showed that 27% of the subjects suffered from psychological problems. Most of the problematic cases occurred among the unemployed, according to the study.

Review of epidemiological studies of mental disorders in various countries shows that the results of prevalence rate could be quite different (varying from 7.3% to 39.8%). Of course, part of this variation can be accounted for by methodological variation including instrumentation, sampling method, techniques of interview and diagnostic classifications.

Although an extensive epidemiological study was not carried out in Iran in general and in Ardabil province in particular, the existing data indicate that the prevalence rate of these disorders could vary from 11.9% to 23.8% (Noorbala *et al.* 1998). Also, Noorbala & Bageri Yazdi (2004) found that about 20% of the adult population of Iran suffer from mental disorders, and 0.6% live with psychotic disorders. He also showed that 21% of the sample experienced depressive symptoms, 20.8% had

anxiety, 17.9% suffered from somatic symptoms and 14.2% lived with social dysfunction symptoms.

In the light of what discussed above, an attempt to estimate the current condition of mental disorders seems necessary because of: (1) the integration of mental health services with primary health care in Iran; (2) the importance of attention to mental health nursing which is in its primary stage in the country; (3) lack of a clear definition of the responsibilities and roles of the nurses in this area, and finally; and (4) the fact that community-oriented mental health nursing has been almost completely ignored. Moreover, the special socio-cultural (i.e. strictly traditional and religious) characteristics of Ardabil province provided a further motive to conduct this study.

In view of the above, the main goal of the current survey is to find out the prevalence rate of mental disorders considering variables such as age, sex, marital status, occupation and level of literacy in different urban districts of Ardabil province in Iran, which is hoped to feed into relevant decision-making procedures.

## Method

This cross-sectional study intended to study the population of 15–65 years of age in the urban districts of Ardabil province in Iran. The population of the province amounts to 1 323 266 people, 784 139 of which live in the urban areas (Management and Planning Organization of Ardabil province 2001). The current study sampled 1400 people, that is, about 1/1000 of the total population through random multistage cluster sampling method. However, 50 more were added to make up for possible failures because of a variety of reasons (we finally managed to gather the data of 1430 people). In order to secure a representative sampling, the ratio of cities' population to the province population was considered, and then the ratio of urban and rural population of each city was estimated on the basis of the data obtained from the Health Department of each city. Then, a random sample was selected according to the rough criterion of one in any 500 urban residents.

## Instrumentation

For data collection, the following tools were used: (1) Personal Data Questionnaire (PDQ) that included demographic factors (like address, number of family members, number of family member with the age of 15 years and older, sex, age, marital status, level of education, vocation, etc.); and (2) The GHQ, a self-administered tool, which is used to evaluate mental health and screen non-psychotic psychiatric illness. The GHQ is used both in clinical

settings, and in epidemiologic studies to examine mental health status in the general population. A person with a high GHQ scores is considered to have a high level of psychological distress, including depression, anxiety and other psychiatric conditions (Goldberg & Blackwell 1970)

The GHQ originally included 60 items. However, a variety of reduced versions of it including GHQ-30, GHQ-28, GHQ-20 and GHQ-12 is available now. Since the initial development of the GHQ by Goldberg in the 1970s, it has been used in various settings and different cultural backgrounds to a great extent (Abiodun 1993, Andersen *et al.* 2002, Molina *et al.* 2006).

The GHQ employed in UK household survey (Wiggins *et al.* 2004), the validity and reliability of which were approved in an independent study (Malakouti *et al.* 2007), was translated into Persian, which is comprehensible to almost all Iranians. The best cut-off point was decided to be 6, using the conventional scoring method and minimum overall misclassification rate. Thus, those scoring 6 and above were taken as suffering from mental disorder.

The reliability coefficient of 0.88 was calculated through Cronbach's alpha method (Noorbala *et al.* 1998). Also, the internal consistency coefficient of GHQ test was 0.81, calculated through the same method. Furthermore, the reliability coefficient of the questionnaire for each subscale of symptoms, somatization, depression, anxiety and social dysfunction was calculated to be 0.75, 0.73, 0.80 and 0.85, respectively.

### Data collection

A group of trained colleagues (psychologist) completed questionnaires of personal data and GHQ-28 test through a face-to-face interview. It was made sure that the colleagues had no previous relation with the subjects. The interview team started the procedure by saying: 'We'd like to obtain some information about your health status within the past month. Please provide us with sincere responses about your condition. Remember that we want to obtain information only about your problems in the past month, not the ones that you had before that time. Please try to respond to all the questions.'

Each subject was to choose his or her response from among four options. For convenience of respondents and confidentiality of information, interviews were done individually and at their home. We arranged for the required procedure for the colleagues to be formally introduced to the family through a recommendation letter from the relevant city's Health Centre, which was produced to the families upon arrival. Data collection was started after a written consent of the participants was obtained. The subjects were also assured that all the data will remain

**Table 1**  
Mental disorders prevalence in terms of demographic variables

Variable	Sample size (n)	Mental disorder prevalence (n)	Prevalence rate (%)
Gender			
Male	700	148	21.1
Female	730	250	34.2
Age group (years)			
15–24	764	199	25.9
25–44	334	100	29.9
45–64	324	99	30.6
Marital status			
Unmarried	742	186	25.1
Married	645	189	29.3
Divorced or widowed	39	23	59.0
Occupation			
Housewife	427	155	36.3
Employed	130	21	16.2
Unemployed	145	51	35.2
Student	454	102	22.5
Private business	270	69	25.6

confidential. The data were analysed and the results appear in the following Tables.

### Results

The data regarding prevalence rate of mental disorders in a period of 1 month specified in terms of gender, age, marital status and occupation appear in Table 1. The Table reveals that 36.6% of housewives, 16.2% of private-section employees, 22.5% of students, and 35.2% of unemployed subjects suffered from mental disorders.

An examination of the data on the basis of the place of residence (see Table 2) showed that Germe had the highest (44.4%) and Sarein had the lowest (13.3%) prevalence rate of mental disorders. In general, of all 1430 subjects, 1032 (72.2%) turned out to be healthy, and 398 (27.83%) of them appeared to suffer from mental disorder. The Table also shows that the number of people suffering *somatization*, *anxiety*, social dysfunction and *depression* disorders was, respectively, 20.2%, 22.3%, 32.0% and 14.1%, throughout the province. As appears in Table 2, social dysfunction was shown to be the most, and *depression* was found to be the least prevalent disorder in this province.

In the meantime, an investigation of the sample on the basis of literacy level (Table 3) showed that 54 (46.2%) *illiterate* and 77 (28.6%) *college degree* participants were suffering from mental disorders. More details appear in Table 3.

### Discussion

This survey showed that, on the whole, 27.83% of the subjects suffered from different mental disorders. The

**Table 2**  
The distribution and percentage of mental disorders on the basis of the place of residence

City	Somatization disorder		Anxiety disorder		Social dysfunction		Depression		Mental disorder	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Ardabil	142	17.4	175	21.5	288	35.3	124	15.2	212	26.0
Khalkhal	32	23.0	29	20.9	41	29.5	14	10.1	40	28.8
Meshkin Shahr	30	21.7	32	23.2	38	27.5	16	11.6	42	30.4
Pars Abad	50	26.6	52	27.7	42	22.3	28	14.9	62	33.0
Germi	22	39.3	16	28.6	18	33.3	10	17.9	24	44.4
Namin	4	12.5	4	12.5	10	31.3	6	18.8	10	31.3
Sarein	8	13.3	10	16.7	20	33.3	4	6.7	8	13.3
Total	288	20.2	318	22.3	457	32.0	202	14.1	398	27.83

**Table 3**  
Frequency distribution and percentage of mental disorders on the basis of different levels of literacy

Levels of literacy	Sample	Mental disorder prevalence	
			%
Illiterate	117	54	46.2
Primary school	142	49	34.5
Middle school	149	46	30.9
High school	259	62	23.9
High school graduate	444	108	24.3
College degree	269	77	28.6

results of previous studies about epidemiology of mental disorders in Iran indicated that the range of prevalence rate of mental disorders varied from 11.9% to 23.8% (Noorbala & Bageri Yazdi 2004). A comparison of the results with epidemiological survey of mental disorders in Iran (Noorbala & Bageri Yazdi 2004), and also western studies (Fones *et al.* 1998), shows that the prevalence rate found in this survey is notably high. Of course, it should be noted that Noorbala & Bageri Yazdi's (2004) study that was done in Iran is comparable with the findings of the present study when the population and economic aspects are taken into consideration. We might say that part of the difference could be due to the particular characteristics of the province, some of which were mentioned above. As an example, the traditional structure of the society which encourages a delayed consultation with the mental health counsellors could contribute to such a result. We also note that the prevalence rates reported in different studies could vary in terms of the time period they address, which is just 1 month in the present study.

Not surprisingly, we found a higher prevalence rate of mental disorder among women than men (34.2% vs. 21.1%), which is in line with other mental health surveys in Iran (Noorbala & Bageri Yazdi 2004) and those conducted in other countries. Women are definitely at a greater risk of developing mental disorders such as depressive, somatoform, anxious or eating disorders, as well as suicidal behaviours, as the result of their particular social role. Furthermore, mentally-ill women are more stigmatized,

have less access to care and suffer from a worse social outcome (Douki *et al.* 2007). The significance of gender-related differences becomes clearer by the highly different rates in major depressive disorder. In fact, unipolar depression, which is, according to World Health Organization (WHO) (1998), the second leading cause of disability and the first cause of Disability Adjusted Life Years, is twice as frequent in women compared with men. Unipolar depression accounts for 41.9% of the disability from neuropsychiatric disorders among women as compared with 29.3% among men (WHO 2000). In addition to the biological factors which could underlie this frightening condition, psychosocial factors could also contribute to women's greater vulnerability as well. In fact, health is partially an outcome of social factor as it is clearly stated by WHO (1998):

Women's health is inextricably linked to their status in society. It benefits from equality and suffers from discrimination. Today, the status and well being of countless millions of women world-wide remain tragically low.

Not surprisingly, a strong inverse relationship is shown to exist between social position and the physical and mental health measures. According to WHO (2000), the health problems rate are 2–2.5 times higher among socially disadvantaged people compared with advantaged ones. Thus, we might say that the high prevalence rate of mental disorders among women could be related to their gender and limited social roles. Most women are limited to one social role (i.e. a housewife), and when they are faced with more responsibilities, they experience pressure and hence are exposed to more stressors. Besides, the limitations of women in society and, biological and emotional idiosyncrasies are all factors that could pave the way for a higher prevalence rate of mental disorders.

In this study, the age group of 45–65 years had the highest prevalence rate. It could be argued that there is a relationship between age and suffering from mental disorders, particularly in the case of somatization and depression, as shown in the studies of Lee *et al.* (1990) and Hodiamont *et al.* (1987). This could be due to a variety of factors such as

the frailties accompanied by age, menopause of women, retirement, weakening of body's defence mechanisms, the general vulnerability of older adults to stressor factors, physical diseases, lack of social support and low income.

Furthermore, Table 2 shows that unlike most studies carried out throughout the world and in the other parts of Iran, which found *anxiety* and *depression* as the most prevalent disorders, the highest prevalence rate in our study appeared to be social dysfunction. It could be said that the people in this province are more educationally disadvantaged as compared with even other parts of Iran. Consequently, the poorer education fails to help people appropriately socialize and value social conventions.

Table 2 also reveals that Germe had the highest (44.4%) and Sarein had the lowest (13.3%) prevalence rate of mental disorders. This is quite expected in that Germe, a township in the northern part of the province, is less developed and the population suffers from a poorer socio-economic condition. Sarein, on the other hand, is a tourist attraction with a lot of hot mineral waters, which has socially and economically privileged the residents to a great extent. Other cities fall somewhere between in the province's development continuum.

Also, as it appears in Table 3, findings of this study showed that the prevalence rate of mental disorders among illiterate people was higher as compared with literate ones. The rate is 46.2% among the illiterate, 26.7% among the group with the educational level of primary and high school, 24.3% among the group with high school diploma, and 28.6% among the participants with a college degree.

This finding is in line with other studies carried out in Iran. Socio-cultural limitations and inability to employ suitable coping-with-stress strategies on the part of illiterate and less educated subjects could account for such a difference. It

seems that educated people are better off in that they have more decent jobs with higher income and have better access to information sources (e.g. books, internet, journals and newspapers). As a result, they handle their mental challenges better than the less privileged people.

The findings of this study on the whole can be taken as both a warning to health officials and a base for future plans to address the daunting phenomenon. As it is hinted above, considering the role of mental health nursing in improving community's overall mental health, and a limited access to psychiatrists in developing countries (like Iran), it is essential to use the potential advantages of mental health nursing in areas that merit special attention. The need for a change in mainstream nursing practice to enrich community-based mental health nursing in an attempt to manage the care of such patients more economically is already hinted by scholars like Ehrhart & Furlong (1996). Yet, while they mostly focus on the quality of nurse education, our study addresses the informed decision making in operationalizing such a change. Thus, the findings of this study demonstrate that this part of Iran is in need of more targeted community-oriented mental health nursing based on the prevalence algorithm. It is worth to note that although community-based mental health nursing has already gained momentum in most parts of the world, it has so far failed to creep into the agenda of health policy makers at least in this part of Iran.

To gain further insight into the nature of mental health phenomenon and to enable authorities to make appropriate decisions adjusted to the idiosyncratic characteristics of various societies, it is recommended that other studies are designed to discover the relationship between socio-economic status of participants and the type and dimensions of mental health problems.

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