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Perception and Attitude of the General Population of Zanjan, Iran in Comparison to Medical Students Toward Schizophrenia

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Abstract

Background: The perception and attitude of the general population and health-care workers towards psychiatric disorders have a direct effect on the outcome of these diseases. Negative perceptions and attitudes can lead to worse social facilities (such as employment, and housing), lower self-esteem, help-seeking behavior, as well as complications in receiving health care. Little information is available about the perception and attitude towards schizophrenia in Iran.

Methods: This study was conducted to evaluate the perception and attitude of the general population and medical students toward schizophrenia in Zanjan province, Iran. Several possible factors affecting perception and attitude were also evaluated. A descriptive-analytical cross-sectional study was conducted on 788 medical students and the general population of Zanjan province. A researcher-made questionnaire was used to collect data.

Results: The scores of perception and attitude toward schizophrenia were compared between the two populations. In the comparison of the two general and medical populations, only a significant relationship was found between the attitude of ineffectiveness (significance = 0.001) and stigmatization attitude (significance=0.001), which means that the attitude of the general population is more negative than the medical population.

Conclusion: No correlation was found between gender and level of education with attitude and perception towards schizophrenia. A statistically significant relationship was found between family history and negative attitude towards schizophrenia. A significant relationship was also found between taking a psychology or psychiatry course with a more positive attitude and perception towards schizophrenia.

Keywords: *Schizophrenia, Perception, Attitude, Iran*

Introduction

Schizophrenia is a mental illness with features such as delusions, hallucinations, disturbed behavior, and negative symptoms that impairs social and occupational functioning and is quite debilitating [1]. According to the World Health Organization's definition, schizophrenia is a severe disorder that usually begins in late adolescence and early adulthood [2]. A key feature is disordered thinking and perception, often accompanied by inappropriate emotions. The lifetime prevalence of schizophrenia in the United States is around one percent [3]. The prevalence of psychosis especially schizophrenia in Iran is the same as in other countries and is estimated to be around one percent of the general population [4]. Perception and attitude have different definitions in various fields of psychiatry, psychology, and sociology. Social perception refers to how a person is seen by society or other people [5]. Attitude is a state of mental readiness that is acquired through experience and has a direct and dynamic impact on an individual's response to all attitude-related issues and situations [6]. Perceptions and attitudes toward mental disorders may be positive or negative. Social stigma refers to the negative beliefs and attitudes of the general population towards individuals with mental disorders [7]. A common belief is that people with schizophrenia are unpredictable, dangerous, aggressive, and inadequate. Therefore, many people may have a strong tendency to maintain social distance from these people [8]. Social stigma, apart from the mental illness itself, has serious negative consequences for individuals with mental disorders. It can lead to damaged social facilities (such as employment and housing), lower self-esteem, help-seeking behavior, ruined friendships, and familial relationships, as well as complications in receiving health care. Mental illness stigma can also lead to delays in receiving treatment [9]. In Iran, research has been conducted on stigma towards mental disorders. The global nature of stigma, lack of awareness among mental health professionals and other experts, cultural barriers, policy-making structures, and lack of financial resources are all obstacles to improving stigma [10]. In studies conducted within Iran, even medical students who undergo clinical training may have negative attitudes toward mental disorders [11]. There is limited information about the perception and attitude

toward schizophrenia in Iran. Therefore, this study was conducted to evaluate the perception and attitude of residents of Zanjan province and medical students in this province towards schizophrenia.

Methods

Study Type and Population

This study is a descriptive-analytical cross-sectional study conducted in 2023-2024 on two groups of medical students and the general population of Zanjan province. All medical students who were studying at Zanjan University of Medical Sciences in 2023 were used as the source population for the "medical" group. Patients referred to Ayatollah Mousavi Hospital's clinics were also used as the source population for the "general population" group. The inclusion criteria for the study were medical students at Zanjan University of Medical Sciences or visitors to the Ayatollah Mousavi clinic in Zanjan in 2023 who were able to read and write, willingness to participate in the study, ages between 18 and 70 years old, and negative history of psychiatric illness. The exclusion criteria were illiteracy, unwillingness to participate in the study, ages over 70 or under 18 years old, and a positive history of psychiatric illness in the participant.

Sample Size

Based on similar studies, the G*power software was used to estimate sample size by comparing the means of two independent groups. Since the means of the two groups were estimated to be close to each other, a smaller effect size (0.2) was chosen to obtain a larger sample size. A type alpha error probability of 0.05 was considered. The sample size for the "medical" group was estimated to be 394. The sample size for the "general population" group was also estimated to be 394 and convenience sampling was used to select the general population from visitors of the clinics.

Data Collection Tool, Validity, and Reliability of the Questionnaire

A researcher-made questionnaire was used to evaluate the attitude and perception towards schizophrenia. This questionnaire consisted of 23 questions that were extracted from similar studies [12-30]. The questions were adjusted based on Iranian culture and social conditions. For example, in studies conducted in African countries, factors such as witchcraft, evil eye, and god's will were identified as causes of schizophrenia [14], but such cases were not included in the researcher-made questionnaire. Instead, factors such as stress, physical and chemical brain disorders, poverty, etc., which are more compatible with the cultural conditions of Iran, were included as possible etiologies of schizophrenia [21]. A three-point Likert scale (1-3) was used to score the questions in the questionnaire. A score of 1=agree, 2=not sure, and 3=disagree was considered, with a lower score indicating a more positive attitude and perception. Demographic factors such as gender, age, and education level were also asked of the participants. A family history of psychiatric disorders was also asked of the participants. Participants were also required to indicate if they had completed a psychology or psychiatry course before. The content validity of the questionnaire was evaluated by psychiatry and Persian literature professors, and corrections were made before sampling. Cronbach's alpha test was used to assess the reliability of the questionnaire. The internal consistency analysis of the 23-item schizophrenia scale yielded a Cronbach's alpha of 0.55, which increased to 0.68 after removing items 7-8-9-10-15-16-20-22.

A psychiatrist developed case vignette was used to help the general population what was meant by schizophrenic people.

Variables

The dependent variables include perception and attitude toward schizophrenia. Independent variables include demographic characteristics, family history of psychiatric disorders, and completion of a psychology or psychiatry course.

Data Analysis Method

Incomplete questionnaires were excluded from the study. The data were entered into SPSS version 26 software. The frequency distribution of demographic variables was examined. The frequency distribution of responses to schizophrenia questionnaire items was also examined individually. The reliability of the questionnaire was evaluated using Cronbach's alpha, which reached 0.68 after removing some items. The remaining items were subjected to exploratory factor analysis with varimax rotation. These items were divided into four factors: perception of the etiology of schizophrenia, attitude toward the inefficacy of schizophrenia, attitude toward the stigmatization of schizophrenia, and attitude toward the destigmatization of schizophrenia. Perception and attitude scores regarding schizophrenia were compared between the two general and medical populations using the t-test. The relationship between completion of a psychology or psychiatry course, family history of psychiatric disorders, gender, education level, and age with perceptions and attitudes toward schizophrenia was also examined using an independent t-test. Finally, independent variables with a significance level less than 0.05 were considered statistically significant.

Results

Demographic Characteristics

A total of 394 medical students and 394 individuals from the general population were included in the study. 99.2% of the medical students were between the ages of 18 and 30 and the number of medical students over the age of 41 was zero. 57.9% of the general population were between the ages of 18 and 30. 43.4% of the participants in the medical group were male and 56.6% were female. In the general group, 53% were male and 47% were female. Almost half the general population has a university education and half does not (Table 1).

Factor Analysis

Internal consistency of the 23-item schizophrenia scale through Cronbach's alpha yielded a value of 0.55, which increased to 0.68 after removing items 7-8-9-10-15-16-20-22. The remaining 15 items were subjected to factor analysis with varimax rotation.

Factor one, which makes up 25.69% of the variance includes six questions that are all about the etiology of schizophrenia. This factor was named perception of the etiology of schizophrenia.

Table 1: Socio-Demographic Characteristics of Respondents.

	Percentage (%)	Frequency			Percentage (%)
		General population	Medical population	General population	Medical population
Age groups	18-30 y/o	228	391	57.9%	99.2%
	31-40 y/o	80	3	20.3%	0.8%
	41-50 y/o	47	0	11.9%	
	51-60 y/o	31	0	7.9%	
	61-70 y/o	8	0	2%	
Gender	Male	209	171	53%	43.4%
	Female	185	223	47%	56.6%
Educational level	Non-university Graduates	199	-	50.5%	-
	University graduates	195	-	49.5%	-
	Medical students	-	394		50%

Table 2: Component matrix.

	Component			
	1	2	3	4
17-Physical and chemical disorders in the brain are one of the possible causes of schizophrenia	0.84			
1-Accidents or traumatic events are factors that cause or aggravate schizophrenia	0.82			
2-Drug and alcohol misuse are factors that cause or aggravate schizophrenia	0.82			
3-Schizophrenia is hereditary	0.81			
4-Poverty is a factor that causes or aggravates schizophrenia	0.74			
5-Stress is a factor that causes or aggravates schizophrenia	0.73			
13-People with schizophrenia should be allowed to make decisions in their family		0.94		
14-It's possible to establish a friendship with someone who has schizophrenia		0.93		
21-A person who has schizophrenia could have a favorable career path		0.92		
19-Those who have schizophrenia should be confined in care centers			0.90	
18-The main culprit in causing schizophrenia is the person himself			0.89	
11-It's not necessary for people with schizophrenia to be admitted to medical centers				0.67
6-A person with schizophrenia can live in society with others if they receive proper treatment				0.57
23-Schizophrenia could be transmitted to others				-0.52
12-A person with schizophrenia can get married and start a family				0.38

Table 3: Perception and attitude toward schizophrenia among medical and general population.

					Leven's test		T-test				
		Frequency	Mean	Standard deviation	F	Significance	t	df	Sig. (2-tailed)	Mean difference	D cohen
Perception of etiology	General	394	9	2.98	0.77	0.37	3.37	786	0.001	0.697	2.89
	Medical	394	8.30	2.80							
Attitude of inefficacy	General	394	5.85	2.12	4.57	0.03	5.41	786	0.001	0.835	2.16
	Medical	394	5.01	2.20							
Attitude of destigmatization	General	394	2.72	1.12	0.41	0.52	1.71	786	0.086	0.144	1.81
	Medical	394	2.87	1.23							
Attitude of stigmatization	General	394	8.33	1.35	12.87	0.001	6.78	786	0.001	0.558	1.49
	Medical	394	7.61	1.49							

Factor two, which makes up 17.74% of the variance includes three questions that are all about the capacity of an individual in their personal and work relationships. This factor was named the attitude of the inefficacy of schizophrenia. Factor three, which makes up 11.01% of the variance includes two questions that are both about destigmatization. This factor was named the attitude of destigmatization of schizophrenia. The scores for this factor were reversed meaning a score of one meant disagree and a score of three meant agree. Factor four, which makes up 7.91% of the variance includes four questions that are all about stigmatizing. This factor was named the attitude of stigmatization of schizophrenia.

As seen in Table 2, item 23 (schizophrenia can be transmitted to others) has a negative loading on Factor 1 and requires reverse scoring in the analysis (Table 3).

Comparison of Perception and Attitude Scores Regarding Schizophrenia in the General and Medical Populations

In the comparison of the scores of perception and attitude towards schizophrenia in both general and medical populations, the variables attitude of inefficacy of schizophrenia (significance = 0.03) and attitude of stigmatization of schizophrenia (significance = 0.001) are significant. Since the lower the mean, the more positive the attitude is,

the attitude of the general population (mean = 5.85) in ineffectiveness is more negative than the medical population (mean = 5.01). The attitude of the general population (mean = 8.33) in stigmatizing schizophrenia is more negative than the medical population (mean = 7.61).

Association Between Taking a Psychology or Psychiatry Course with Perception and Attitude Toward Schizophrenia

417 out of 788 participants have completed a psychology or psychiatry course unit. This means that 53% of the population has been trained in the field of psychiatric disorders and 47% has not been trained. The two groups have a significant difference in all variables except for the variable of destigmatization of schizophrenia (significance = 0.07), which means that people who have passed a psychology or psychiatry course (mean = 8.37) have a more positive perception than those who have not received psychiatric training (mean = 8.96). Also, those who passed a psychiatry course have a more positive attitude of inefficacy and stigmatization (mean = 5.10 and 7.67) than those who did not pass such a course (mean = 5.80 and 8.32) (Table 4).

Association Between Family History of Psychiatric Disorders and Perception and Attitude Toward Schizophrenia

Only in the stigmatizing attitude of schizophrenia, there is a significant difference between those who have a family history of psychiatric disorders and those who do not (significance = 0.008). Those who have a family history (mean = 8.16) show a more negative attitude towards stigmatization than those who do not have a family history (mean = 7.86) (Table 5).

Association Between the Level of Education of the General Population and the Perception and Attitude Towards Schizophrenia

There is no significant difference in the attitude and perception of schizophrenia between university graduates and non-university graduates in the general population (significance>0.05) (Table 6).

Association Between Gender and Perception and Attitude Towards Schizophrenia

There is no significant difference in the attitude and perception of

Table 4: Taking a psychiatry or psychology course and its association with perception and attitude toward schizophrenia.

	T-test					
	t	df	Sig. (2-tailed)	Has taken a psych course	Frequency	Mean
Perception of etiology	-2.86	773.27	0.004	Yes	417	8.37
				No	371	8.96
Attitude of inefficacy	-4.54	775.36	0.001	Yes	417	5.10
				No	371	5.80
Attitude of destigmatization	1.76	785.99	0.07	Yes	417	2.87
				No	371	2.72
Attitude of stigmatization	-6.12	784.36	0.001	Yes	417	7.67
				No	371	8.32

Table 5: Family history of psychiatric disorders and its association with perception and attitude toward schizophrenia.

	T-test					
	t	df	Sig. (2-tailed)	Family history of psychiatric disorders	Mean	Standard deviation
Perception of etiology	-0.72	784	0.46	Yes	8.55	2.87
				No	8.71	2.94
Attitude of inefficacy	-1.25	784	0.20	Yes	5.29	2.24
				No	5.50	2.17
Attitude of destigmatization	1.18	784	0.23	Yes	2.86	1.26
				No	2.76	1.13
Attitude of stigmatization	2.66	784	0.008	Yes	8.16	1.52
				No	7.86	1.53

Table 6: Educational level of general population and its association with perception and attitude toward schizophrenia.

	T-test					
	t	df	Sig. (2-tailed)	Educational level	Mean	Standard deviation
Perception of etiology	-0.86	392	0.39	University	8.87	2.90
				Non-University	9.13	3.07
Attitude of inefficacy	0.27	392	0.78	University	5.87	2.15
				Non-University	5.82	2.10
Attitude of destigmatization	0.71	392	0.47	University	2.76	1.13
				Non-University	2.68	1.12
Attitude of stigmatization	-0.75	392	0.45	University	8.28	1.37
				Non-University	8.38	1.34

schizophrenia between males and females in the general and medical population (significance>0.05) (Table 7).

Association Between Age and Perception and Attitude Towards Schizophrenia

Due to the heterogeneity of the sample of the medical population, it was not possible to compare the two populations in terms of age. Also, because the number of medical students from the age group of 41 and above becomes zero, it is not possible to compare age groups with each other (Table 8).

Discussion

The present study was conducted to investigate the perception and attitude toward schizophrenia in both the general population and medical students in 2023. In this research, no significant relationship was found between gender and perception and attitude towards schizophrenia, these results are in line with the study conducted in Oman [31]. According to the findings, a significant relationship was found between the family history of psychiatric disorders and the attitude towards schizophrenia, that is, those who have a positive family history show a more negative attitude. Meanwhile, in the studies of Lebanon and Ethiopia, people who knew a person with mental illness among their acquaintances and family had a more positive attitude towards these patients [13,25]. At the same time, in the Baghdad research, no relationship was found between a positive family history and attitude toward mental disorders [26], this difference in results is justifiable. Since a precise and uniform definition of attitude and perception is not provided in different sources, sometimes the

Table 7: Gender and its association with perception and attitude toward schizophrenia.

	T-test					
	t	df	Sig. (2-tailed)	Gender	Frequency	Mean
Perception of etiology	0.72	786	0.46	Male	380	8.73
				Female	408	8.58
Attitude of inefficacy	0.27	786	0.78	Male	380	5.45
				Female	408	5.41
Attitude of destigmatization	0.58	786	0.55	Male	380	2.82
				Female	408	2.77
Attitude of stigmatization	-0.10	786	0.91	Male	380	7.97
				Female	408	7.98

Table 8: Responses to the items of the perception and attitude toward schizophrenia questionnaire.

			Medical population			General population	
	Items	Agree	Neutral	Disagree	Agree	Neutral	Disagree
1	Accidents or traumatic events are factors that cause or aggravate schizophrenia	67.3%	27.7%	5.1%	57.6%	34.8%	7.6%
2	Drug and alcohol misuse are factors that cause or aggravate schizophrenia	66.8%	28.2%	5.1%	62.7%	29.4%	7.9%
3	Schizophrenia is hereditary	65.2%	28.4%	6.3%	61.7%	31.7%	6.6%
4	Poverty is a factor that causes or aggravates schizophrenia	64.7%	31.2%	4.1%	47.7%	44.4%	7.9%
5	Stress is a factor that causes or aggravates schizophrenia	66.8%	28.2%	5.1%	56.9%	35.3%	7.9%
6	A person with schizophrenia can live in society with others if they receive proper treatment	27.4%	26.1%	46.4%	18.8%	29.4%	51.8%
7	A person with schizophrenia is violent and dangerous	30.5%	32.2%	37.3%	24.9%	29.9%	45.2%
8	A person with schizophrenia can be treated with medicine	18%	61.2%	20.8%	17.8%	60.7%	21.6%
9	Anyone may get schizophrenia in their lifetime	13.5%	29.4%	57.1%	16%	25.9%	58.1%
10	A person with schizophrenia has mental retardation	14%	26.9%	59.1%	13.7%	23.6%	62.7%
11	It's not necessary for people with schizophrenia to be admitted to medical centers	20.1%	26.1%	53.8%	9.1%	12.4%	78.4%
12	A person with schizophrenia can get married and start a family	35.5%	41.9%	22.6%	17.3%	64%	18.8%
13	People with schizophrenia should be allowed to make decisions in their family	50.5%	31.2%	18.3%	30.5%	43.4%	26.1%
14	It's possible to establish a friendship with someone who has schizophrenia	51.5%	29.7%	18.8%	38.1%	38.6%	23.4%
15	Lack of social support may cause or aggravate schizophrenia	78.9%	11.7%	9.4%	86.5%	8.6%	4.8%
16	If diagnosed early, schizophrenia is treatable	55.1%	21.3%	23.6%	60.9%	22.6%	16.5%
17	Physical and chemical disorders in the brain are one of the possible causes of schizophrenia	69.5%	25.4%	5.1%	58.1%	34.8%	7.1%
18	The main culprit in causing schizophrenia is the person himself	11.4%	19.5%	69%	8.9%	18.8%	72.3%
19	Those who have schizophrenia should be confined in care centers	10.2%	24.6%	65.2%	6.3%	23.6%	70.1%
20	A person with schizophrenia should have the same human rights as others	68.5%	18.5%	12.9%	80.5%	9.9%	9.6%
21	A person who has schizophrenia could have a favorable career path	51.3%	31%	17.7%	31%	34%	35%
22	Lack of awareness and insight in a schizophrenic patient causes ineffective treatment	70.3%	16.8%	12.9%	77.6%	13.5%	8.9%
23	Schizophrenia could be transmitted to others	4.3%	13.2%	82.5%	4.6%	20.8%	74.6%

measured factor shows the respondent's knowledge rather than the attitude and perception. Such questions are also seen in some of the mentioned studies and these questions may have measured the level of knowledge of the person. In this case, it is natural that if you have a positive family history of psychiatric disorders, the level of knowledge about these diseases will be higher than the rest of the people. Cultural and social differences in societies are another reason. In Western societies where there is more social support for these patients, treatments are more available and education about psychiatric disorders starts from a young age, it is natural that the attitude towards these patients is not so negative. However, in Iranian society, where education about psychiatric disorders is not provided, the government does not support such patients, and the high cost of treatment can lead to a more negative attitude towards psychiatric disorders. Sometimes people with stigma and negative attitudes towards these disorders wish to consider themselves exempt from these disorders. However, it seems that the results obtained in Iran are in line with the results seen in practice.

In our study, there was no statistically significant relationship between the level of education and the perception and attitude toward schizophrenia, which is in line with the studies of Oman and Baghdad [26,31]. At the same time, in the Ethiopian study, illiterate people or people who had non-university education showed a more positive attitude towards schizophrenia [14]. In the study of Lebanon, stigma is lower in women, young people, and university graduates than in other groups [25]. In our study, a relationship was found between having taken a psychology or psychiatry course with perception and attitude toward schizophrenia. This means that those who have completed psychology or psychiatry courses show a more positive attitude and perception. These results are in line with the Moroccan study [29]. In our study, a significant relationship was found in the attitude towards schizophrenia in the comparison of two general and medical populations, which means that the general population showed a more negative attitude than medical students. These results are in line with Amini's study in Iran [30]. In our study, the general population recognized the lack of appropriate social support, drug and alcohol use, and genetics as the main causes of schizophrenia, which is in line with the results of studies in Ethiopia and Saudi Arabia [13,14,24]. Meanwhile, the medical community recognized the lack of appropriate social support, physical and chemical disorders in the brain, and stress as the main causes of schizophrenia, which is closer to the studies of Ghana and China [20,21].

According to the findings, almost half of the general population believes that schizophrenic patients are not dangerous and violent, which is in line with the study of Saudi Arabia [24], but not in line with the research of Ethiopia [13,14]. In our research, almost three-quarters of the general population and half of the medical population believe that it is necessary to admit schizophrenic patients to medical centers, which is closer to the Indian study [32]. Meanwhile, in the Ethiopian study, only 39.4% of the participants have the same belief [14]. At the same time, in the study of Ghana, 90% of the participants believed that schizophrenic patients should be hospitalized in treatment centers [20]. In our study, 80% of the general population agreed with the equality of human and social rights of people with schizophrenia with the rest of the population, which is not in line with the Ethiopian research [13]. Meanwhile, only 30% believed that these patients could have a favorable career future, which is in line with the studies of India and Saudi Arabia [24,33]. In our study, about 20% of the general population believed that schizophrenic patients can get married, and the same percentage believed that it is impossible to establish a friendship with schizophrenic patients. These results are in line with the study of Ghana and Canada [15,20], but not in line with the studies of southern Ghana and Saudi Arabia [24,34].

About 60% of the general population disagrees that schizophrenic patients have some kind of mental retardation, which is not in line with the study in Ghana [20]. This difference in results can be explained by the cultural differences and the level of education about psychiatric disorders in different societies. Only 16% of the general population believe that anyone may suffer from schizophrenia during their lifetime, which is much lower than studies in Ghana, Saudi Arabia, and southern Ghana [20,24,34]. One of the reasons for the difference in the results could be that by answering this question negatively, people want to rid themselves of this disease. Knowledge of the prevalence of schizophrenia in the general population can also be another influential factor. Since the prevalence of this disease in society is not very high, its estimation by the general population is not high either.

Conclusion

The results of this study showed that there is no significant relationship between gender and education level with perception and attitude toward schizophrenia. Those who have a family history of psychiatric disorders show a more negative attitude towards schizophrenia. A significant relationship between taking a psychology or psychiatry course with positive perception and attitude toward schizophrenia was also found. The general population has a more negative attitude towards schizophrenia than medical students. Lack of proper social support was recognized as the most common cause of schizophrenia.

Conflict of Interest

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

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Ethical Considerations

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