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Comparison of Anxiety Level in Community Health Care Providers Employing in rural and urban Public Health Centers of Tabriz, 2020

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Abstract

Background: The work environment and work-related activities of Community health care providers can cause anxiety in some situations. Persistent anxiety may lead to feelings of self-illness, absenteeism, substance abuse, and low self-esteem. Anxiety in public health care providers can reduce the quality of healthcare services.

Objectives: The present study aimed to determine and compare the level of anxiety in community health care providers employing in rural or urban public health centers of Tabriz in 2020.

Methods: In this descriptive-comparative study, 140 community health care providers including 70 health workers (behvarz) from rural health house and 70 health care providers from urban public health centers and its branches entered the study through cluster random sampling. The state and trait anxiety level of the samples were compared using a two-part questionnaire including demographic information form and Spielberger State-Trait Anxiety Inventory. Data analysis was performed in SPSS software using descriptive and inferential statistics including Chi-square and Mann-Whitney tests.

***Results*:** Mean and standard deviation of trait anxiety in the health care providers group working in rural or urban public health centers was 44.19±8.55 and in the health workers group as the health care provider in health house located in village was 44.30±9.17. Mean and standard deviation of state anxiety was 44.63 ± 8.27 and 44.83 ± 11.50 in the same groups relatively. Comparison of state and trait anxiety levels between the two groups of health care providers and health workers showed no statistically significant difference ($P<0.05$). No significant difference was observed between demographic characteristics and state-trait anxiety levels in both groups ($P<0.05$).

Conclusion: The level of State and Trait anxiety in the two groups of health care providers and health workers was moderate to mild. It is suggested that the authorities take the necessary measures to identify and moderate the causes of anxiety in this group of health workers.

Keywords: anxiety, state, trait, health care providers, health workers, Iran

Introduction

Emotional states and reactions are issues that have always been associated with human beings. The most common emotional response is anxiety [1]. According to the World Health Organization, about 500 to 700 million people in the world suffer from one of the mental disorders, about half of which are mild mental disorders such as depression and anxiety [2,3]. Anxiety is a psychological and physiological condition characterized by cognitive, physical, emotional, and behavioral components and can be assumed a work-related emotional disorder [4]. Anxiety was first introduced in the 15th century, which means physical stress [5]. Spielberger in 1971 defines anxiety as a state with tangible but transient emotional state characterized by feelings of tension and increased activity of the autonomic

nervous system [6]. Anxiety is a reaction against an unknown, ambiguous, unconscious, and relative to unknown danger [7]. Spilberger differentiate aspects of anxiety into state and trait anxiety. State anxiety was defined as a more transient reaction to an adverse situations [8] and is a function of situational stress [8,9]. Trait anxiety was considered as a more stable personality attribute in experiencing events [8] [10].

Anxiety occurs when a stressful situation in a person's life becomes too long or is recurring, or when the body's nervous system fails to end the stress resistance phase and remains in the body for a long time. Hence, the body wears out and becomes vulnerable to physical and mental illnesses such as anxiety [2]. Anxiety is more common in people who are exposed to enduring stress. People who are constantly dealing with patients especially health care providers are at higher risk of developing psychological stress and anxiety [11].

According to WHO in 2017 the prevalence of anxiety is 10% in Africa, 12% in the Eastern Mediterranean, 14% in Europe, 24% in the United States, and 23% in Asian countries [12]; the prevalence of anxiety in the Iranian population is equal to 15.6% [13].

In the Iranian health care system, health care is provided through health care providers working in either urban health care centers or rural health houses. Health care providers deal with clients at health centers or health house and should be prepared to provide care to different groups with diverse needs [14]. Health houses are covered by rural health centers. In rural areas, health worker (behvarz) is obliged to provide all primary health care (PHC) services [15,16]. However, health care providers working in urban public health centers and its branches (health offices), are required to provide part of the PHC care services, including child monitoring, vaccination, and maternal care under the supervision of the center physician [17]. Based on differences in job descriptions and conditions of health care providers and health workers, it seems these two groups may experience different problems such as lack of time, job stress, fatigue, and mental pressure such as anxiety [18].

As decreased quality of service provision is known as a consequences of anxiety for health care providers, in which the client is deprived of adequate attention and care, and his/her individuality and rights are under inquiry [19]. In most studies conducted in Iran and other parts of the world, the level of anxiety of medical staff has been assessed [20, 21]. Anxiety levels have been reported to be moderate in the clinical staff [22]. Ding et al. (2014) reported a 38% prevalence of anxiety symptoms among local health care workers [23]. In a recent study in Iran, although the level of anxiety of health care providers was reported to be low, the level of anxiety of health workers was higher than that of health care providers. Anxiety level in this study was measured using DASS 21 tool [24].

Anxiety can impair the quality of life of community health care providers, weaken the immune system, affect job performance, increase mistakes, and exert adverse effects on their interactions with clients and colleagues [25]. Also, health care providers and health workers, as part of the health system interacting with individuals in the community, have received less attention from both Health care managers and researchers. Since no study was found to assess the level of anxiety of health care providers of Tabriz center of Azerbaijan province of Iran, the current study was conducted to compare the state-trait anxiety of the health care providers and health workers employed in urban public health centers and rural health house.

Methods

This descriptive-comparative study was performed on 70 health care providers and 70 health workers working in public health centers or in the rural health house of Tabriz, Iran in 2020. The main researcher took samples after obtaining research permits in health centers and officials. The questionnaire was distributed after explaining the research objectives, obtaining informed and written consent, and emphasizing the confidentiality of all information.

The study population included all community health providers working in public health centers or in the rural health house from April to March 2019 in public health centers of Tabriz. Cluster sampling method was applied; in this method, first, the list of urban and rural health centers of Tabriz was prepared. Afterwards, one urban healthcare center and one rural healthcare center

were randomly selected from each district based on the geographical distribution of Tabriz in four districts of north, south, east and west. Each center was considered as a cluster. All eligible health care providers or health workers working in public health centers or in health houses covered by rural health centers were included in the study. The participants consisted of health care providers or health workers working in public healthcare centers with at least one year of work experience. Sample size was estimated 140 by considering α=0.01 and β= 0.8 and statistical accuracy of 0.05 and considering the prevalence of anxiety 38% percent in health workers based on the Ding study [24].

A two-part questionnaire was used to collect data. Part one contained demographic information (including age, gender, and marital status, level of education, number of children, work place, and place of residence). The question related to determining the personality type was: "Which group of characteristics match with your spirits the most?" Respondents were classified into introverted personality type group if they chose the first item based on the following states: silent and shy, solitary behavior, self-controlled, and interested in mental exercises. And they were classified into extroverted personality type if they chose the second item based on the following states: social, happy and talkative, interested in communicating with others, and motion exercises. Part two consisted of Spielberger State-Trait Anxiety questionnaire. The questionnaire includes two separate self-assessment psychometric scales to measure two distinct but anxiety-related concepts. This questionnaire was previously used in the study of Farahani et al. (2009). Since no changes were made in the items, content validity was not assessed [26].

Responses for the State anxiety scale assess intensity of current feelings “at this moment”: (1) not at all, (2) somewhat, (3) moderately so, and (4) very much so. Responses for the T-Anxiety scale assess frequency of feelings “in general” (1) almost never, (2) sometimes, (3) often, and (4) almost always. Range of scores for each subtest is 20–80, the higher score indicating greater anxiety. In the State anxiety scale, a score lying in the range of 20- 31 indicates very mild anxiety, 32- 42 moderate to low anxiety, 43- 53 moderate anxiety, 54- 64 moderate to high anxiety, 65- 75 severe anxiety, and 76- 80 very severe anxiety. In the Trait anxiety scale, a score lying in the range of 20- 31 indicates very mild anxiety, 32- 42 moderate to low anxiety, 43- 52 moderate anxiety, 53- 62 moderate to high anxiety, 63- 72 severe anxiety, and 73- 80 very severe anxiety. Internal consistency of state-trait anxiety scale is relatively high [26]. To present the results, anxiety $\leq$42 was considered mild, between 43-52 moderate and $\geq$53 severe.

In order to measure its reliability, test-retest was performed on 20 employees of health care centers (including 10 community health workers and 10 health care providers). The reliability of the research tool was estimated 0.89, which indicates an appropriate and desirable reliability.

Data analysis was performed in SPSS version 20 using descriptive statistics (mean and standard deviation for quantitative data and percentage and frequency for qualitative data), and inferential statistics including Chi-square and Mann-Whitney tests. Confidence level was assumed 95%, and the significance level was considered at $P<0.05$.

Results

The number of questionnaires distributed in this study was 140, of which 127 questionnaires were complete and 13 questionnaires were incomplete (sample loss was 10.2%). Out of 13 questionnaires that were incompletely submitted to the researcher, 7 cases (one male and 6 females) were related to health care providers and 6 cases (5 females and one male) were related to health workers. In the present study, 58 (90.6%) of the healthcare providers and 61 (96.8%) of the community health workers were women. There were 37 married participants in both groups. The distribution of other individual variables is listed in Table 1 (Table 1).

There was a significant difference in the distribution of participants based on gender, place of residence and work place.

Table 1: Demographic variables of health care providers and health workers employing in urban and rural health centers of Tabriz

Variable		Health care providers		health workers		P-value Exact Fisher test
		Frequency	Percentage	Frequency	Percentage	
Gender	Female	58	90.6	61	96.8	0.003
	Male	6	9.4	2	3.2	
Marital status	Single	27	42.2	26	41.3	0.211
	Married	37	57.8	37	58.7	
Education	Associate degree	23	35.9	20	31.7	0.100
	Bachelor's degree	40	62.5	42	66.7	
	Master's degree	1	16	1	1.6	
Number of children	None	3	8.1	4	10.8	0.061
	One	11	29.7	13	35.1	
	Two	10	27.1	9	24.3	
	Three	8	21.6	9	24.3	
	Four	5	13.5	2	5.4	
Workplace	Urban health center	18	28.1	-	-	0.011
	Health office	46	71.9	-	-	
	Rural health center	-	-	4	6.3	
	Health house	-	-	59	93.7	
Place of residence	City	51	79.7	49	77.8	0.048
	Village	13	20.3	14	22.2	

Evaluating the State anxiety in the group of healthcare providers, it was found that 27 individuals (42.3%) suffered from mild anxiety, 34 individuals (53.1%) moderate anxiety, and three individuals (4.7%) severe anxiety. In the health workers group, 21 individuals (33.3%) suffered from mild anxiety and 42 individuals (66.7%) had moderate anxiety. There was no severe anxiety in this group. The Trait anxiety status of healthcare providers was, respectively, 23 (35.9%) mild, 40 (62.5%) moderate, and one (1.6%) severe. The status of this variable in the health workers group was 28 (44.4%) mild and 35 (55.6%) moderate; there was no severe anxiety in this group. The mean and standard deviation of the trait anxiety was 44.19±8.55 in the health workers group and 44.30±9.17 in the health care providers group. Also, the mean and standard deviation of the state anxiety was 44.63±8.27 in the health workers group and 44.83±11.50 in the health care providers group. Comparison of state and trait anxiety levels between of health care providers and health workers revealed no statistically significant difference (P<0.05) (Table 2).

Table 2: Comparison of mean and frequency of anxiety status of health care providers and workers employing in health centers of Tabriz

Anxiety status	health workers		Health care providers		P-value*
	Mean	Standard deviation	Mean	Standard deviation	
State	44.83	11.50	44.63	8.27	0.864
Trait	44.30	9.17	44.19	8.55	0.891
State anxiety	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**P-value****
low	27	42.2	21	33.3	0.119
Moderate	34	53.1	42	66.7	0.069
Severe	3	4.7	0	0	0.02
Trait anxiety	**Frequency**	**Percentage**	**Frequency**	**Percentage**	**P-value****
low	23	35.9	28	44.4	0.119
Medium	40	62.5	35	55.6	0.298
Severe	1	1.6	0	0	0.01

* Mann-Whitney Test, ** Fisher Exact Test

The results of Independent t-test for comparing the means of state and trait anxiety of health care providers and health workers regarding personal and demographic variables showed no significant difference between demographic characteristics and State and Trait anxiety levels in both groups (P<0.05) (in Table 3,4).

Table 3: Comparison of the means of State anxiety of health care providers and health workers by personal variables

State anxiety		health workers		P-value*	Health care providers		P-value*
		Mean	Standard deviation		Mean	Standard deviation	
Gender	Female	45.19	11.66	0.439	44.44	8.28	0.312
	Male	10.15	41.33		7.77	50.50	
Marital status	Single	11.071	45.11	0.868	6.33	48.08	0.005
	Married	11.96	44.62		8.69	42.22	
Place of residence	City	10.71	44.73	0.889	8.81	43.55	0.051
	Village	14.73	45.23		4.50	48.43	
Workplace	Urban health center	12.69	43.22	0.489	3.94	47.75	0.441
	Rural health house	11.09	45.46		8.46	44.42	

* Independent t test

Table 4: Comparison of the means of Trait anxiety of healthcare providers and health workers by personal variables

Trait anxiety		health workers		P-value*	Health care providers		P-value*
		Standard deviation	Mean		Standard deviation	Mean	
Gender	Female	44.69	9.05	0.192	44.18	8.65	0.959
	Male	40.50	10.34		44.50	6.36	
Marital status	Single	43.93	8.918	0.785	44.27	7.125	0.952
	Married	44.57	9.477		44.14	9.522	
Place of residence	City	44.20	9.58	0.863	42.57	8.70	0.004
	Village	44.69	7.71		49.86	4.97	
Workplace	Urban/rural health center	42.61	9.49	0.362	43.25	3.50	0.822
	Healthcare center/healthcare house	44.96	9.07		44.25	8.80	

* Independent t test

Discussion

This study results showed that the State-Trait anxiety level was moderate to mild in more than 95% of health care providers and all of health workers, but no statistical difference was found between the two groups. In Tafvizi Zavareh &et al. (2020) study the mean of anxiety of health care providers in Isfahan Iran with DASS21 was evaluated and reported 4.35±3.82 in a range of 0-21 which can be concluded to be mild anxiety [24]. According to Ding et al (2014) the mean anxiety symptom score among the community healthcare workers was 37.7 and the prevalence of anxiety symptoms was 38%[23]. In the present study the mean State and Trait anxiety scores were 44 which was more than Chinese health care workers. This difference may be due to different tools and cut off in two study. Ding used Zung Self Rating Anxiety Scale to measure the anxiety related symptoms and a raw score ≥40 was defined as anxiety symptoms in accordance with the norm of Chinese. In the present study a raw score ≤42 was considered as mild and 43-52 as moderate and more than 52 as severe anxiety. Alherti et al. (2017) concluded only 7.6% of emergency health care workers suffered from severe anxiety, and among the surveyed groups, the staff of the emergency unit had a significantly higher level of anxiety [21]. In our study 4.7% health care providers reported severe State anxiety and 1.6% Trait anxiety. No health workers reported severe State or Trait anxiety. In several studies, the anxiety level of hospital staff has also been reported higher than our study [17, 27]. It may be due to different participant and work place characteristics of studies. However, a common feature of previous studies is the confirmation of anxiety in health care employees. Buchanan (2018) believes that workers experience high levels of anxiety due to direct contact with people

in the community [28]. Our findings manifested no significant difference in State-Trait anxiety of health care providers based on gender, marital status and place of residence. But we found significant difference in State anxiety of single and married health workers. In the other words single health workers experience more state anxiety than married one. Also Trait anxiety of health workers who lives in Tabriz was less than those lived in villages. It means that health worker with higher Trait anxiety scores tended to live in village. In the study of Alharti et al. (2017), age and gender were inversely and significantly related with the level of anxiety in emergency workers, so that with increasing age, the level of anxiety decreased. The level of anxiety is also reported higher in women compared with men [21]. But in our study no significant relationship was found between age, length of work, number of children and age of the youngest child with State and Trait anxiety scores. This may be perhaps due to the nature of job environment and different samples of two study.

Conclusion

According to the findings, the State and Trait anxiety level of community health workers and health care providers was moderate to mild indicating no significant difference between the two groups. Given that long-term and unknown anxiety may bring about major psychological complications, occupational burnout, and job leaving, paying attention to factors causing anxiety and finding appropriate solutions should be on the agenda of managers and planners in the headquarters. Further studies are recommended to be conducted to evaluate and explore dimensions related to healthcare providers' and community health workers' anxiety.

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Conflict of interest

The authors declare that there is no conflict of interest.

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