Research Paper

Health anxiety and social health among health care workers and health volunteers exposed to coronavirus disease in Iran (2020): A structural equation modeling

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A B S T R A C T

Objective: The purpose of this study was to examine the structural relationships between health anxiety and social health among Health Care Workers exposed to covid-19 in Iran.
Method: The research was an online-survey and cross-sectional study. The sample consisted of 735 Health Care Workers and health volunteers in Iran from 13 April to 4 May 2020. Three standardized pre-tested questionnaires were used to collect data including social health, health anxiety and corona-related questions. Data were analyzed by SPSS 22 and Amos 24 software.
Results: The majority of the respondents were males and 51.4%, were married. Fifty-six percent of the participants were employed and 5.1 percent of respondents had covid-19. 52.6% of respondents are satisfied with the government's performance in managing corona virus. 83% of health anxiety changes are explained by social health.
Conclusion: Increasing public awareness, efforts to reduce social anxiety and stress, and improving social functioning and social support can be part of the interventions of health policy makers and social experts.

1. Introduction

Since the end of December 2019, the Chinese city of Wuhan has reported a novel pneumonia caused by coronavirus disease 2019 (COVID-19), which is spreading internationally (Li et al., 2020). The World Health Organization held an emergency meeting and declared the global COVID-19 outbreak a public health emergency of international concern (Ali et al., 2020).

In the face of the coronavirus, health care workers are at the forefront, they endure a lot of stress. These stresses and anxieties are due to the unknown nature of the disease, widespread prevalence, lack of facilities and equipment, and fear of contracting the disease and transmitting it to others (Lai et al., 2020).

Health anxiety includes mild concerns related to physical feelings and severe fears related to health and mental conflict combined with physical feelings (Salkovskis et al., 2002). As part of their self-care, at risk patients are often instructed to monitor their bodies for possible symptoms. Health anxiety develop in the absence of organic pathology (Abramowitz et al., 2007). Eventually, this anxiety becomes a complex clinical problem for the individual, family, and treatment system and in economic and social levels, it imposes negative costs and effects on communities (Tyrer et al., 2011; Deale, 2007). Anxiety affects all aspects of a person's health (physical and psychological), it can also affect the social aspects of health and quality of life (Sirri et al., 2020). Psychological factors are known to play a vital role in the success of public health strategies used to manage epidemics and pandemics. Health anxiety is important in influencing the success or failure of each of these strategies. Accordingly, it is critical that public health decision-makers, health authorities, and health care providers across disciplines understand how health anxiety will influence responses to viral outbreaks, including current responses to COVID-19 (Asmundson and Taylor, 2020). Social health consists of five dimensions: coherence, integration, contribution, actualization and social acceptance, all of which can have a reciprocal effect on a person's understanding of health and reducing

anxiety (Dore et al., 2017; Hunsaker et al., 2020). Although extensive studies have been conducted in the field of health anxiety, but studies on the relationship between anxiety and social health are very limited, so this study was conducted to investigate the relationship between the two variables. This study examines the relationship between health anxiety and social health in health care providers. Health care providers, especially volunteers in Iran, are often young, trained, and native, working in hospitals and health centers, and highly motivated. In the Corona pandemic, health care providers were at the forefront of the fight against the virus and made great efforts in the field of healthcare.

2. Materials and method

2.1. Design and sampling

This cross- sectional study and online survey was conducted on 735 participants in 31 provinces of Iran. Questionnaires were shared in social networks such as WhatsApp, Telegram and Instagram from 13 April to 4 May 2020. Available sampling method was used.

2.2. Measures

An online standardized pre-tested questionnaire was applied to collect the data. It consisted of questions related to demographic characteristics, corona related questions, short form of Health Anxiety Questionnaire (HAQ) and social health questionnaire. The total health anxiety score ranges between 0 and 68 with higher scores indicating anxiety about health. Cronbach's alpha coefficient of reliability was 0.87 (Salkovskis et al., 2002). This scale included three subscales measuring probability of disease (H1), negative consequences (H2) and mental conflict (H3). In most of the studies done on the social health (well-being) in Iran, the translated form of KEYES model was used. The reliability and validity of the questionnaire of KEYES model was also evaluated By Babapour (0/78) (Keyes and Magyar-Moe, 2003; Torani et al., 2015). This scale included five subscales measuring social integration (S1), social acceptance (S2), social contribution (S3), social actualization (S4) and social coherence (S5). The total social health score ranges between 0 and 100 with higher scores indicating superior feeling of health. Demographic indicators included gender, marital status, location and age.

2.3. Data analyses

Data analyzed by descriptive and inferential statistics in SPSS 22 and Amos 24 software. Structural equation modeling (SEM) was used to examine the relationships among social health and health anxiety. Multiple criteria of goodness-of-fit statistics were used in the assessment of model fit (($RMSEA \leq 0.05$), (NFI, NNFI, CFI $\geq$ 0.90)) (Raykov and Marcoulides, 2012). The level of significance was set at 0.05.

2.4. Ethical considerations

This study received approval from the Department of Social Work of the Ministry of Health. Before the data collection, all participants were made aware of the purposes of the study. They were assured that the collected data would only be used for research aims.

3. Results

In this research fifty-fore percent of the respondents were males ($n = 397$). A majority of the participants (51.4%, $n = 378$) were married. Fifty-six percent of the participants were employed (39.3% Permanent and 16.7% part-time). At the time of the study, 5.1 percent of respondents had covid-19 ($n = 38$). 52.6% of respondents are satisfied with the government's performance in managing corona virus ($n = 387$). A majority of the participants were Volunteer (Red Crescent) (37.2%, n

Table 1
frequency distribution of demographic variables.

variable	Item	Frequency (percentage)
Gender	female	338 (46%)
	male	397 (54%)
Age	22–31 years old	57 (7.75%)
	32–41 years old	349 (47.48%)
	42–51 years old	287 (39.04%)
	52–60 years old	42 (5.71%)
Mental status	single	340 (46.3%)
	married	378 (51.4%)
	divorced	17 (2.3%)
Educational level	Associate Diploma	205 (27.9%)
	bachelor	352 (47.9%)
	Master and higher	178 (24.2%)
Health care providers (by occupation)	Nurse	170 (23.1%)
	Social worker	221 (30.06%)
	Operating room expert	40 (5.4%)
	Volunteer (Red Crescent)	274 (37.2%)
	Support unit employee	25 (3.4%)
	Physician	5 (0.68%)
Health status	I have corona disease	38 (5.2%)
	I don't have corona disease	697 (94.8%)

Table 2
Relationship between the main measures.

variable	Age		Marriage status		Job status		Health care providers (by occupation)	
Social Health	P value	r	P value	r	P value	r	P value	r
Health anxiety	0/001*	0/685	0/001*	0/546	0/01*	0/659	0/01*	0/630
	0/003*	0/710	0/000*	0/560	0/001*	0/812	0/001*	0/609

= 270) and 30.06% were social workers (Table 1).

The average health anxiety was 51.43 and the average social health was 64.17.

According to Table 2, there were significant correlations among social health and health anxiety, marriage status, age, job status and health care providers (by occupation).

According to Table 3, the fit indices suggested that the structural model was an acceptable fit to the data. RMSEA (0.05) value falls within acceptable values of 0.05–0.07. In addition, all of the fit indices for the structural model were above the acceptable 0.90 level (CFI = 0.90, GFI = 0.98, NFI= 0.91).

4. Discussion

In this study, the average health anxiety was 51.43 and the average social health was 64.17. Most participants were male, were married and were aged 32 to 41 years. This research indicated that there were significant correlations among social health and health anxiety, marriage status, age, job status and health care providers (by occupation) And single people, volunteers, the 22–31 age group, and formal employees experience lower health anxiety and higher social health. Results showed that eighty-three percent of health anxiety changes are explained by social health. Previous studies in SARS disease showed that most of health care workers reported psychological symptoms (Lai et al., 2020; Chua et al., 2004). Javadi et al. (2020) Concluded that psychosocial interventions were needed to manage the corona crisis and its consequences. These interventions are especially important for the elderly (Javadi; Sabzi Khoshnami et al., 2020; Vahdani et al., 2020).

Table 3

Values of good test indicators (good fit).

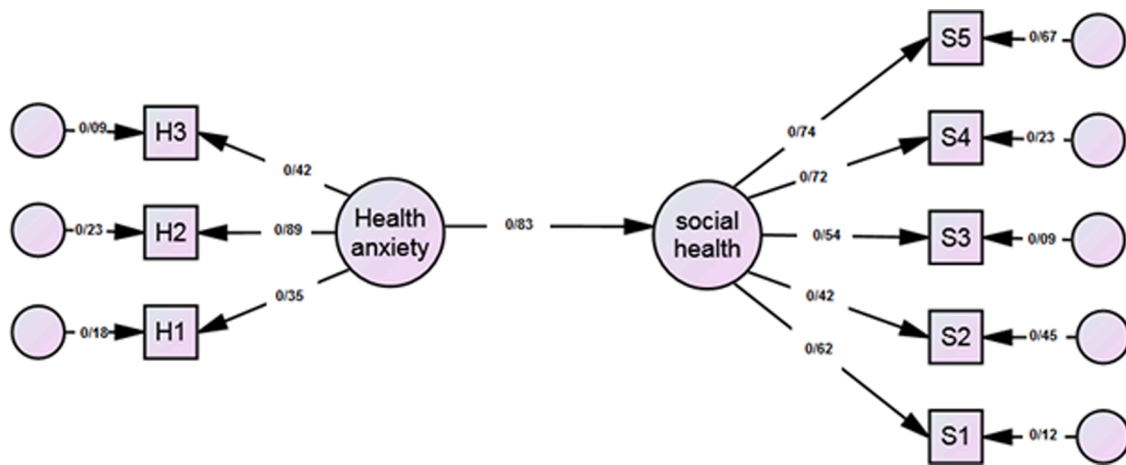| Variable	GFI	IFI	CFI	NFI	RMSEA	Dfx2/
Social health and health anxiety	0.98	0.90	0.90	0.91	0.05	2.02
Result	Confirmed	Confirmed	Confirmed	Confirmed	Confirmed	Confirmed

Fig. 1. According to Fig. 1, the proposed link between health anxiety and social health was positive and significant (p < 0.05). Eighty-three percent of health anxiety changes are explained by social health.

Abramowitz et al. (2007) believes that health anxiety is more common in people with physical illnesses or in people who are at risk for the disease. As a result, health care providers and health volunteers are more likely to be anxious (Chua et al., 2004; Chan, 2003) .Risk of mental disorders, stress and anxiety in nurses and medical staff were more than other people (Mok et al., 2005). In this study, social workers and Red Crescent volunteers had less health anxiety than nurses, perhaps because they have higher social resilience and provide psychosocial support to others in the community (Sabzi Khoshnami et al., 2020, 2021a, 2021b). Anxiety disorder has been associated with impaired health-related quality of life (Strine et al., 2005) and depressive symptoms (Schonfeld et al., 1997). Lai et al. (2020) concluded that health care workers in Wuhan were at risk for symptoms of anxiety and they may require special attention.

The results of research by Furer et al. Show that people with higher health anxiety are more likely to go to medical centers and pay higher costs for treatment (Furer et al., 2007). In an epidemiological study by Barsky, the prevalence of health anxiety in the general population was estimated at 5% and in patients at 9% (Barsky et al., 2001). Bleich and Hiller also estimated the prevalence of severe health anxiety among Germans at 6 percent (Bleichhardt and Hiller, 2007). Weaver et al. Believe that health care providers are more anxious that a critical situation can increase their anxiety (Weaver et al., 2018).

Social health is a function of various physical, psychological, social, economic and cultural factors. High levels of health anxiety can have negative consequences on various aspects of health and social relationships. In recent pandemics, isolation and quarantine (more extreme forms of social distancing) have precipitated depression and anxiety. Outbreaks Corona, in addition to physical and physiological discomfort, also cause psychological problems such as mental disorders caused by home quarantine, diminished social relationships, disruptions to the normal course of life. Many of these patients will have some degree of anxiety disorders and depression even after being physically recovered and discharged from the hospital (Javadi et al., 2020b). Anxiety might arise from fear of contagion and inadequate clarity around social distancing guidelines, often made worse by less reliable media sources heightening confusion and fear mongering (Brooks et al., 2020) .Those with pre-existing mental illness might suffer from limiting

interpersonal interactions that are central to their management, as well as reduced access to helpful but "non-essential" (and thus often canceled) psychiatric services (Venkatesh and Edirappuli, 2020). The role of religious factors (such as religious beliefs) and cultural and social factors (such as social support, social self-care, and social participation) in improving the social health of individuals in crisis situations should not be overlooked (Farahani et al., 2019; Sabzi Khoshnami et al., 2021a) Fig. 1.

5. Conclusion

Epidemic crisis conditions can cause positive and negative psychological and social effects that affect the physical, mental and social health of people in the community. In crisis, the mental and psychological structures of the person become disturbed. This confusion reduces the power of control and predictability.

Feeling insecure can increase a person's level of anxiety in a sick way. As discussed in this article, increasing health anxiety can have negative consequences on people's social health. Health policymakers and social experts need to identify this vicious cycle and provide effective interventions. Raising public awareness, trying to reduce social anxiety and stress, and improving social functioning and social support can be part of these interventions. The results of this study and attention to factors such as health anxiety, social health and social support in all members of society and for other critical situations (natural disasters, war and terror, viral pandemics) can be generalized.

Declaration of Competing Interest

There is no conflict of interest in this study, and all authors contributed equally

Strength and limitation of the study

This article connects the two psychological and social dimensions of health and can be the basis of planning in the field of health. Because the questionnaires were completed online, there was no face-to-face exchange between the respondent and the questioner.

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