



Relationship of Health Anxiety and Mental Health with Psychological Vulnerability Mediated by Perceived Social Support in Nurses Working in COVID-19 Wards

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Abstract

Introduction: Nurses have a crucial position in health care, making up more than 75% of health care providers. The working environment can cause chronic stress in nurses. The present study aimed to investigate the relationship of health anxiety and mental health with psychological vulnerability mediated by perceived social support in nurses working in COVID-19 wards in Shiraz (Iran).

Methods: This descriptive-correlational study used multistage random sampling to enroll all 200 nurses of the COVID unit of the hospital in Shiraz in 2022. The research tools included the General Health Questionnaire-28, the Health Anxiety Questionnaire, the Multidimensional Scale of Perceived Social Support, and the Psychological Vulnerability Scale. The proposed model was evaluated using structural equation modeling (SEM).

Results: The results showed that the proposed model had a good fit. According to the results the direct paths from perceived social support and mental health to psychological vulnerability were significant ($P < 0.01$). There was a positive and significant relationship between health anxiety with psychological vulnerability and perceived social support with mental health ($P < 0.01$). The direct path from health anxiety to perceived social support was not significant.

Conclusions: Mental health and perceived social support effectively reduced psychological vulnerability and could help mitigate the psychological harms caused by the COVID-19 pandemic.

INTRODUCTION

Nurses have a crucial position in health care, making up more than 75% of health care providers. They are at the frontline against the COVID-19 pandemic [1]. The working environment can cause chronic stress in nurses [2, 3]. Moreover, studies have reported a high prevalence of depression among nurses [4, 5]. Depression and absence from work in nurses are associated with the working environment. Patient pain, suffering, death, hardship at work, critical working conditions, chemicals, and different disinfecting supplies, devices, and agents are among the factors that cause stress, depression, and anxiety in nurses [6]. The physical and mental health of nurses is directly related to

the quality of their performance in providing patient care, increasing satisfaction and interest in work, and boosting their efficiency [7].

Another variable that has a determining role in individuals' behavior in stressful conditions is psychological vulnerability. People with high vulnerability are exposed to more psychological problems in stressful conditions; their adjustment decreases and they are less likely to adopt a hopeful view. The spread of COVID-19 led to quarantining, consequently reducing social interactions and isolating individuals. As a stressful factor, isolation increases anxiety [8]. Wong et al. [9] found that less vulnerability

and more coping capacity can make adjustment with the COVID-19 pandemic easier. Psychological vulnerability is known as an inherent or learned preparedness towards adjustment and mental disorders [10].

Mental health is one of the most important dimensions of public health, playing a determining role in the personal and social life of individuals [11]. According to the WHO, mental health does not only include the absence of mental disorders, but also a state of well-being in which people understand their own abilities, can cope with the normal stresses of life, can work productively, and help their community. Providing and maintaining physical, mental, and social health is a central human objective, and there is strong evidence on the relation between physical and mental health [12].

Health anxiety (also called hypochondria) is defined as worry about health and obsessive and excessive worry about the possibility of contracting a dangerous disease [13, 14]. Among the most important symptoms of health anxiety, we can mention the following: constant worry about health, frequent examination of the body to find symptoms related to illness, numerous questions about one's health status, worrying about not diagnosing the disease despite tests and doctor's examinations, obsession with checking medical and treatment information from various sources and acting like a sick person [15].

Health anxiety is also seen in many mental disorders such as obsession, generalized anxiety and panic disorder. It is difficult for these people to reduce their emotional worries and these worries are unbearable for them [16]. The frustrating conditions caused by the COVID-19 pandemic can lead to mental health problems in people who work in an environment connected with the disease. Their health concerns are adaptive; however, people with health anxiety (also called hypochondria) severely worry about their physical health without being exposed to certain risks and attribute simple physical symptoms to serious medical conditions [17]. People affected by health anxiety are usually overly preoccupied, excessively examine themselves, and seek reassurance from others [18]. Shayganfard et al. [19] showed in their study that experience of viral diseases can lead to health anxiety in individuals.

Perceived social support is another influential factor in health. It is defined as an individual's cognitive evaluation of their environment and relationships with others. Perceived social support theorists assert that not all relationships with others are social support. In other words, relationships are not the source of social support unless an individual perceives them as accessible or great sources to fulfill their needs [20]. Evidence suggests that sometimes individuals may receive ill-suited and/or ill-timed help or against their will. Therefore, rather than

the support itself, it is the person's perception of the support that matters the most [21, 22].

Nurses are among the occupational groups that are dealing with stress and psychological problems more than other groups and they are known as the group exposed to COVID-19. The review of the literature published in scientific sources showed no research investigating these variables simultaneously, highlighting the significance of conducting this study. Although many studies have been conducted on the COVID-19 pandemic, it seems that there is insufficient research on psychological vulnerability during the pandemic conditions. Accordingly, such studies can add to the knowledge in this field and function as effective steps toward addressing the emotional and psychological problems of nurses working in COVID-19 wards, paving the way for further research. Accordingly, this research aimed to investigate the relationship between health anxiety and mental health with psychological vulnerability mediated by perceived social support in nurses working in COVID-19 wards.

METHODS

Design and Participants

The study was a descriptive correlation performed employing path analysis. The study population of the study included all nurses of the COVID unit in Shiraz, (Iran) in 2021. The sample size included 200 nurses of the COVID unit of the hospital, who were selected through multistage random sampling. The sample size was selected based on the number of research variables. In this study, there was a total of 15 observed variables ($15 \times 10 + 50 = 200$). Accordingly, five hospitals in Shiraz were selected randomly, and then, 200 nurses were selected from their COVID unit. After selecting the qualified nurses to participate in the research, study questionnaires were provided to them. Participants then completed the questionnaires, which were designed to take less than 60 minutes. Research inclusion criteria: Individuals who have started working as a nurse in the COVID-19 unit before the commencement of the research, have not undergone psychotherapy for at least one month before research, and completed the informed letter of consent. Exclusion criteria: Failure to respond to all questions of the questionnaire.

Ethical Considerations

To practice the ethical considerations, all participants were asked to hand over their letter of informed consent and they were informed that they are entitled to leave the research in case they are willing to. The sampling was carried out after conducting the coordination with the research unit and obtaining the required permits (Ethics code: IR.IAU.TON.REC.1400.034). The data were analyzed confidentially by the researcher.

Research Instruments

Psychological Vulnerability Scale (PVS): It is the short-form of the revised version of the Symptom Checklist-90-Revised (SCL-90-R). The PVS was designed by Derogatis. This scale comprises 25 items, and it is based on the Likert scale. Its subscales include psychical complaints, obsessive-compulsive, depression, anxiety, and fear of open spaces, paranoid thoughts, mental distress, and interpersonal sensitivity. Mohammadian et al. [23] reported the reliability of this scale equal to 0.87 based on Cronbach's alpha coefficient. In this study, Cronbach's alpha coefficient was 0.83 for the scale.

The General Health Questionnaire-28 (GHQ-28): Goldberg and Hiller developed this questionnaire in 1979 to diagnose mild mental disorders. GHQ-28 has 28 items and is scored on a 4-point Likert scale. The cut score is 23 to divide the respondents into two categories of normal and those with nonpsychotic mental disorders. People with < 23 scores fall within the mentally healthy category and people with > 23 scores fall within the mentally unhealthy group [24]. The reliability of the General Health Questionnaire was estimated to be 0.91 [25], and the Cronbach's alpha coefficient was determined to be 0.87 for the questionnaire in the present study.

Health Anxiety Questionnaire (HAQ): Salkovskis et al. [26] designed the HAQ. This questionnaire comprises 18 questions. HAQ constituents 3 components, i.e., general health anxiety, suffering from illness, and outcomes of health anxiety, each of which includes 4 items. Each item is scored from 0 to 3 and the highest score is an indication of health anxiety. The authors reported Cronbach's alpha of this tool as 0.89 [27]. In

the present study, Cronbach's alpha coefficient was 0.87 for the questionnaire.

The Multidimensional Scale of Perceived Social Support (MSPSS): The Multidimensional Scale of Perceived Social Support (MSPSS), developed by Zimet et al. [28], was used to measure social support. The 12-item scale has three subscales: perceived support from significant others, perceived support from family, and perceived support from friends. All of the items are scored on a 7-point Likert scale (from very strongly disagree as 1 to very strongly agree as 7). The score range of the MSPSS is 12–84. The authors reported Cronbach's alpha of this tool as 0.89 [29]. In the present study, Cronbach's alpha coefficient was 0.85 for the scale.

Data Analysis

Data were analyzed by descriptive and inferential statistics such as mean, standard deviation, and Pearson correlation coefficient. Structural equation modeling (SEM) was employed to evaluate the proposed research model in SPSS 25 and AMOS 25.

RESULTS

The results revealed that 21.50%, 36.00%, and 28.50% of the women were in the 25–35, 35–45, and 45–55 years-old age groups, respectively. In addition, 48.50% of the participants were male, while 51.50 % were female. The descriptive statistics, including mean, standard deviation (SD), and correlation between the study variables, are presented in Table 1. The initial research model to describe the connection between the variables is shown in Figure 1.

Table 1. Mean, standard deviation (SD), and Pearson correlation coefficients of the studied variables

Variables	Mean $\pm$ SD	1	2	3	4
1- Mental health	93.28 $\pm$ 37.19	1			
2- Psychological vulnerability	68.29 $\pm$ 27.18	-0.53**	1		
3- Health anxiety	49.16 $\pm$ 19.21	0.09	0.60**	1	
4- Perceived social support	43.16 $\pm$ 15.22	0.59**	-0.73**	-0.21**	1

** : P < 0.01

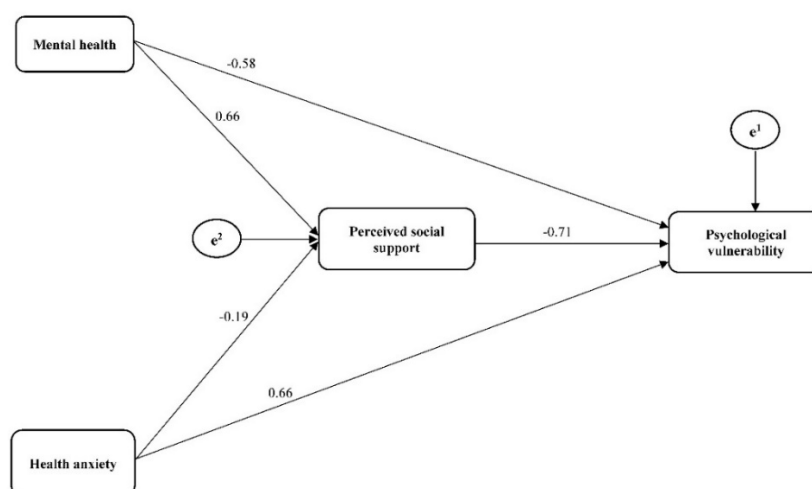


Figure 1. The initial model of the research

The results in Table 2 showed that the original model has to be modified based on the RMSEA (0.131). In order to correct the model, the insignificant relationship from health anxiety to perceived social support was removed. There was a root-mean-square error (RMSEA= 0.041) in the final model, indicating that this model fit the data well. The final model is shown in Figure 2.

According to the results there was a direct relationship between health anxiety and psychological vulnerability ($\beta = 0.58$; $P = 0.003$), and between mental health and perceived social support ($\beta = 0.63$; $P = 0.001$).

Moreover, there was a negative relationship between mental health and psychological vulnerability ($\beta = -0.49$; $P = 0.001$), and between perceived social support and psychological vulnerability ($\beta = -0.69$; $P = 0.001$) in nurses working in COVID-19 wards (Table 3).

The results of Bootstrapping method showed there was a significant indirect path from mental health to psychological vulnerability with the mediating role of perceived social support ($P = 0.001$). The indirect path from health anxiety to psychological vulnerability through the mediating role of perceived social support was not significant (Table 4).

Table 2. Fit indicators in the initial and final models

Fit Indicators	χ^2	df	(χ^2/df)	IFI	TLI	CFI	NFI	RMSEA
Initial model	2.19	1	2.19	0.52	0.43	0.49	0.54	0.131
Final model	4.86	2	2.43	0.92	0.93	0.93	0.91	0.041

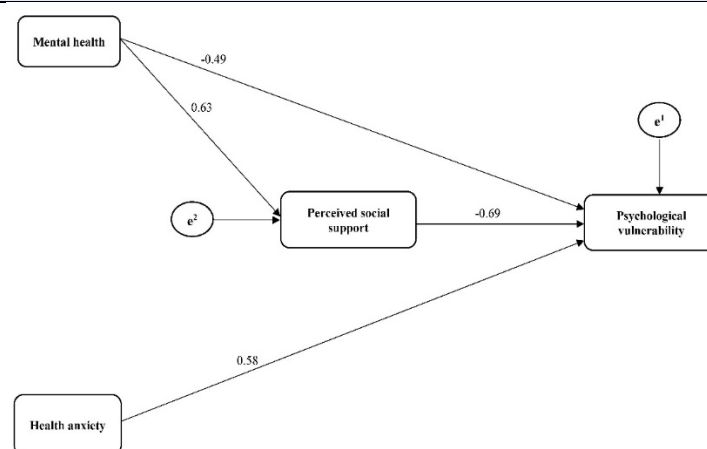


Figure 2. The final model of the research

Table 3. Path coefficients of direct relationship between research variables

Path	Initial model		Final model	
	β	P	β	P
Mental health to psychological vulnerability	-0.58	0.001	-0.49	0.001
Health anxiety to psychological vulnerability	0.62	0.012	0.58	0.003
Perceived social support to psychological vulnerability	-0.71	0.001	-0.69	0.001
Mental health to perceived social support	0.66	0.001	0.63	0.001
Health anxiety to perceived social support	-0.19	0.461	-	-

Table 4. Results of analysis of indirect and intermediary paths in the final modified models

Predictor Variable	Mediator Variable	Criterion Variable	Initial Model		Final Model	
			β	P	β	P
Mental health	Perceived social support	Psychological vulnerability	0.126	0.016	0.133	0.001
Health anxiety	Perceived social support	Psychological vulnerability	0.108	0.071	0.125	0.213

DISCUSSION

This research aimed to investigate the relationship between health anxiety and mental health with psychological vulnerability mediated by perceived social support in nurses working in COVID-19 wards. The finding indicated that there was a significant relationship between mental health and psychological vulnerability in nurses working in COVID-19 wards. This finding is consistent with the research results of Bachmann et al. [30]. Chen et al. [13] reported that there was a relationship between occupational stress and mental

health in psychiatry nurses. As a global health crisis, the COVID-19 pandemic has affected many countries including Iran. It has also impacted different psychological aspects of nurses. In such critical conditions, individual and social structures are challenged and may face problems. Chaos in individual structures refers to decreased control over and predictability of the flow of life. For example, during home quarantine, an individual's routine life is disrupted and the future is less predictable and plannable. Individuals feel that they have less control over their

lives and this can lead to a feeling of insecurity, which can cause anxiety and stress [12].

The finding showed that there was a negative relationship between health anxiety and psychological vulnerability in the nurses. This finding is consistent with the research results of Arimon-Pages et al. [31, 32]. Soltani et al. [33] concluded that perceived stress and moral distress were related to health anxiety in emergency department nurses. Nurses with psychological vulnerability are more likely to be attracted by negative emotions and less likely by positive emotions. This preoccupation with negative emotions can lead to their intensification and defective evaluation of them, resulting in diminished performance in managing and tolerating emotions. This ultimately disrupts the individual and social performance of the affected people. As seen in individuals with health anxiety, they end up in an endless loop of avoidance and constant attempts to reassure themselves since they are trapped by unpleasant feelings and emotions and cannot manage them [17]. In general, psychological vulnerability indicates attempting to stop or repress feelings, thoughts, and other individual experiences such as physical feelings and symptoms of anxiety. The unwillingness to tolerate inner incidents and experiences and specific dysfunctional beliefs about inner experiences provide a more reliable empirical basis for the psychiatric understanding of health anxiety.

The finding indicated that there was a significant relationship between perceived social support and psychological vulnerability in nurses. Moreover, perceived social support had a mediating role in the relationship between mental health and health anxiety with psychological vulnerability. Zhou et al. [34] reported that perceived social support was associated with lower levels of negative mental health outcomes such as depression, anxiety, and dysfunctional attitudes. In the context of these results, consistent or inconsistent studies were not available to the researcher. Nurses with a high level of social support feel assured that in times of need, others will be present to help them, leading them to see potentially stressful events as less pressing [20]. Receiving various kinds of social support can help nurses directly eliminate the negative effects of potentially stressful situations or at least, abate them [21]. Therefore, social support can create a kind of self-confidence and assurance in effectively confronting COVID-19, reducing psychological vulnerability against the disease in nurses with high social support. When an individual receives insufficient support from their family and society, they may be affected by the cognitive distortion that no one loves them and no one cares about them. This can make them feel worthless and empty, unconsciously causing unpleasant feelings. Thus,

feeling of emptiness and lack of self-esteem can make them escape reality. Social support involves three types of positive support from family, friends, and significant others; the absence of all or one of them may reduce an individual's mental health [22]. Psychological mechanisms and/or the nervous and endocrine systems can improve health anxiety. Moreover, social support can create a feeling of self-confidence and assurance in effectively confronting problems. However, this factor must be in balance as it may lead to over-attachment. Cultural differences can be a factor explaining the non-significant relationship between social support and health anxiety. For instance, social support is considered a value in some cultures, while it may be less influential in others [29].

This research faced several limitations. This study was carried out on merely the nurses of the COVID-19 unit in Shiraz, Iran. Generalizing the results of this research to other nurses in the COVID-19 unit should be carried out with caution. The findings of this research were in accordance with the scales and using a questionnaire. Accordingly, questionnaires can be manipulated due to subconscious findings and it might endanger the results of the research.

CONCLUSION

Health anxiety had a positive relationship with psychological vulnerability in the nurses. Considering the importance of the vulnerability pattern during the COVID-19 pandemic, this study can be used as a help to develop other studies on other groups such as interpersonal problems, mood disorders, behavioral disorders such as aggression, etc. To pave the ground for the psychological interventions following the results. In addition, it is advised to do proper planning in this department to identify the extent of psychological vulnerability caused by COVID-19 in nurses of the COVID-19 unit and provide the required psychological interventions.

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AUTHOR CONTRIBUTION

Study conception and design, acquisition of data, analysis and interpretation of data: Rozita Mazhari; Administrative, technical, and material support, and study supervision: Abdolhassan Farhangi; Critical revision of the manuscript for important intellectual content: Farah Naderi and Abdolhassan Farhangi; Approved the final version of the manuscript: All authors.

CONFLICT OF INTEREST

There are no conflicts of interest regarding the publication of the current research.

ETHICAL CINSIDERATION

This study with the ethical code of IR.IAU.TON.REC.1400.034 has been approved by the Islamic Azad University of Tonekabon Branch City, Iran.

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REFERENCES

- Al Thobaity A, Alshammari F. Nurses on the Frontline against the COVID-19 Pandemic: An Integrative Review. *Dubai Med J*. 2020;1-6. doi: 10.1159/000509361
- Mohammadi S, Tajabadi A, Roshanzadeh M. Predicting Moral Distress Through the Dimensions of Psychological Empowerment in Nurses. *Adv Nurs Midwife*. 2021;30(4):21-7.
- Clari M, Luciani M, Conti A, Sciannone V, Berchiolla P, Di Giulio P, et al. The Impact of the COVID-19 Pandemic on Nursing Care: A Cross-Sectional Survey-Based Study. *J Pers Med*. 2021;11(10). doi: 10.3390/jpm11100945 pmid: 34683086
- Serrano J, Hassamal S, Hassamal S, Dong F, Neeki M. Depression and anxiety prevalence in nursing staff during the COVID-19 pandemic. *Nurs Manage*. 2021;52(6):24-32. doi: 10.1097/01.NUMA.0000752784.86469.b9 pmid: 34016869
- Slusarska B, Nowicki GJ, Niedorys-Karczmarczyk B, Chrzan-Rodak A. Prevalence of Depression and Anxiety in Nurses during the First Eleven Months of the COVID-19 Pandemic: A Systematic Review and Meta-Analysis. *Int J Environ Res Public Health*. 2022;19(3). doi: 10.3390/ijerph19031154 pmid: 35162183
- Nadeem F, Sadiq A, Raziq A, Iqbal Q, Haider S, Saleem F, et al. Depression, Anxiety, and Stress Among Nurses During the COVID-19 Wave III: Results of a Cross-Sectional Assessment. *J Multidiscip Healthc*. 2021;14:3093-101. doi: 10.2147/JMDH.S338104 pmid: 34785902
- Ali A, Rasheed A, Naz S. Health-related Quality of Life of Nurses Working in Tertiary Care Hospital of Karachi. *Pak J Med Sci*. 2020;36(3):490-5. doi: 10.12669/pjms.36.3.1267 pmid: 32292458
- Mokhtarian-Gilani T, Kariman N. Does the Prevalence of Postpartum Depression Decrease during Quarantine for Covid-19 Pandemic? *Adv Nurs Midwife*. 2021;29(3):48-9.
- Wong MC, Teoh JY, Huang J, Wong SH. The potential impact of vulnerability and coping capacity on the pandemic control of COVID-19. *J Infect*. 2020;81(5):816-46. doi: 10.1016/j.jinf.2020.05.060 pmid: 32474040
- Makwana N. Disaster and its impact on mental health: A narrative review. *J Family Med Prim Care*. 2019;8(10):3090-5. doi: 10.4103/jfmpc.jfmpc_893_19 pmid: 31742125
- Ohue T, Togo E, Ohue Y, Mitoku K. Mental health of nurses involved with COVID-19 patients in Japan, intention to resign, and influencing factors. *Medicine (Baltimore)*. 2021;100(31):e26828. doi: 10.1097/MD.00000000000026828 pmid: 34397847
- Xu X, Manzoor F, Jiang S, Mumtaz A. Unpacking the Mental Health of Nurses during COVID-19: Evidence from Pakistan. *J Clin Med*. 2021;10(16). doi: 10.3390/jcm10163546 pmid: 34441841
- Prabha L, Ganjekar S, Gupta V, Desai G, Chaturvedi SK. A Comparative Study of Health Anxiety in Neurology and Psychiatry Settings. *J Neurosci Rural Pract*. 2020;11(1):125-9. doi: 10.1055/s-0039-3399395 pmid: 32140015
- Chappell AS. Toward a Lifestyle Medicine Approach to Illness Anxiety Disorder (Formerly Hypochondriasis). *Am J Lifestyle Med*. 2018;12(5):365-9. doi: 10.1177/1559827618764649 pmid: 30283260
- Bailer J, Kerstner T, Witthoft M, Diener C, Mier D, Rist F. Health anxiety and hypochondriasis in the light of DSM-5. *Anxiety Stress Coping*. 2016;29(2):219-39. doi: 10.1080/10615806.2015.1036243 pmid: 25846805
- Lebel S, Mutsaers B, Tomei C, Leclair CS, Jones G, Petricone-Westwood D, et al. Health anxiety and illness-related fears across diverse chronic illnesses: A systematic review on conceptualization, measurement, prevalence, course, and correlates. *PLoS One*. 2020;15(7):e0234124. doi: 10.1371/journal.pone.0234124 pmid: 32716932
- Mokhtari R, Moayedi S, Golitaleb M. COVID-19 pandemic and health anxiety among nurses of intensive care units. *Int J Ment Health Nurs*. 2020;29(6):1275-7. doi: 10.1111/inm.12800 pmid: 33063915
- Javadi MH, Khoshnami MS, Noruzi S, Rahmani R. Health anxiety and social health among health care workers and health volunteers exposed to coronavirus disease in Iran (2020): A structural equation modeling. *J Affect Disord Rep*. 2022;8:100321. doi: 10.1016/j.jadr.2022.100321 pmid: 35165675
- Shayganfard M, Mahdavi F, Haghighi M, Sadeghi-Bahmani D, Brand S. Sources of Health Anxiety for Hospital Staff Working during the Covid-19 Pandemic. *Int J Environ Res Public Health*. 2021;18(6). doi: 10.3390/ijerph18063094 pmid: 33802863
- Hou T, Yin Q, Xu Y, Gao J, Bin L, Li H, et al. The Mediating Role of Perceived Social Support Between Resilience and Anxiety 1 Year After the COVID-19 Pandemic: Disparity Between High-Risk and Low-Risk Nurses in China. *Front Psychiatry*. 2021;12:666789. doi: 10.3389/fpsy.2021.666789 pmid: 34108897
- Mohammadi S, Kamali N, Jamshidbeigi Y, Zakariaee SS, Rostami A, Kenarkoobi A. Relationship between Social Support and Mental Health of Novice Nurses during Coronavirus Epidemic. *Adv Nurs Midwife*. 2021;30(3):35-42.
- Ortiz-Calvo E, Martinez-Ales G, Mediavilla R, Gonzalez-Gomez E, Fernandez-Jimenez E, Bravo-Ortiz MF, et al. The role of social support and resilience in the mental health impact of the COVID-19 pandemic among healthcare workers in Spain. *J Psychiatr Res*. 2022;148:181-7. doi: 10.1016/j.jpsychires.2021.12.030 pmid: 35124398
- Mohammadian S, Asgari P, Makvandi B, Naderi F. Effectiveness of Acceptance and Commitment Therapy on Anxiety, Cognitive Avoidance, and Empathy of Couples Visiting Counseling Centers in Ahvaz City, Iran. *J Res Health*. 2021;11(6):393-402. doi: 10.32598/JRH.11.6.1889.1
- Goldberg DP, Hillier VF. A scaled version of the General Health Questionnaire. *Psychol Med*. 1979;9(1):139-45. doi: 10.1017/s0033291700021644 pmid: 4244481
- Malakouti SK, Fatollahi P, Mirabzadeh A, Zandi T. Reliability, validity and factor structure of the GHQ-28 used among elderly Iranians. *Int Psychogeriatr*. 2007;19(4):623-34. doi: 10.1017/S1041610206004522 pmid: 17069666
- Salkovskis PM, Rimes KA, Warwick HM, Clark DM. The Health Anxiety Inventory: development and validation of scales for the measurement of health anxiety and hypochondriasis. *Psychol Med*. 2002;32(5):843-53. doi: 10.1017/s0033291702005822 pmid: 12171378
- Nargesi F, Izadi F, Kariminejad K, Rezaei Sharif A. The investigation of the reliability and validity of Persian version of Health anxiety questionnaire in students of Lorestan University of Medical Sciences. *Quarter Educat Measure*. 2017;7(27):147-60.

28. Zimet GD, Dahlem NW, Zimet SG, Farley GK. The Multidimensional Scale of Perceived Social Support. *J Personal Assess.* 1988;52(1):30-41. [doi: 10.1207/s15327752jpa5201_2](#)
29. Hassani SF, Tizdast T, Zarbakhsh MR. The Role of Self-compassion and Hope in the Relationship Between Psychological Wellbeing, Maladaptive Schemas, Resilience, and Social Support in Women with Multiple Sclerosis. *J Client Center Nurs Care.* 2021;7(3):195-204. [doi: 10.32598/JCCNC.7.3.372.1](#)
30. Bachmann L, Michaelsen R, Vatne S. Professional vulnerability in mental healthcare contexts: A focus group study of milieu-therapists' experiences. *Nurs Open.* 2019;6(3):1076-87. [doi: 10.1002/nop2.292](#) [pmid: 31367433](#)
31. Chen SY, Yan SR, Zhao WW, Gao Y, Zong W, Bian C, et al. The mediating and moderating role of psychological resilience between occupational stress and mental health of psychiatric nurses: a multicenter cross-sectional study. *BMC Psychiatry.* 2022;22(1):823. [doi: 10.1186/s12888-022-04485-y](#) [pmid: 36564737](#)
32. Arimon-Pages E, Fernandez-Ortega P, Fabrellas-Padres N, Castro-Garcia AM, Canela-Soler J. Dealing with Emotional Vulnerability and Anxiety in Nurses from High-Risk Units-A Multicenter Study. *Int J Environ Res Public Health.* 2022;19(9). [doi: 10.3390/ijerph19095569](#) [pmid: 35564963](#)
33. Soltani Z, Ebrahimi H, Niai Maddah SM, Jahanian A. The Relationship between Health Anxiety and Perceived Stress with Moral Distress in Emergency Nurses: The Mediating Role of Distress Tolerance. *Health Emergenc Disaster Quarter.* 2022;7(3):127-34. [doi: 10.32598/hdq.7.3.409.1](#)
34. Zhou L, Sukpasjaroen K, Wu Y, Gao L, Chankoson T, Cai E. Perceived Social Support Promotes Nursing Students' Psychological Wellbeing: Explained With Self-Compassion and Professional Self-Concept. *Front Psychol.* 2022;13:835134. [doi: 10.3389/fpsyg.2022.835134](#) [pmid: 35478770](#)