

The association between moral distress and mental health among nurses working at selected hospitals in Iran during the COVID-19 pandemic

Reza Nemati^{a,1}, Ainaz Moradi^{b,2}, Maryam Marzban^{c,3} and Akram Farhadi^{d,*,4}

^a*Department of Medical Emergencies, School of Allied Medical Sciences, Bushehr University of Medical Sciences, Bushehr, Iran*

^b*Bone and Joint Diseases Research Center, Chamran Hospital, Shiraz University of Medical Sciences, Shiraz, Iran*

^c*Department of Public Health, School of Public Health, Bushehr University of Medical Science, Bushehr, Iran*

^d*Department of Health Education and Promotion, Faculty of Health, Bushehr University of Medical Sciences, Bushehr, Iran*

Received 20 April 2021

Accepted 8 July 2021

Abstract.

BACKGROUND: In the event of an epidemic outbreak, the mental health of medical staff, including nurses who serve on the frontlines of hospitals, can be affected; thus, the identification of factors affecting nurses' mental health is of importance.

OBJECTIVE: This study aimed to examine the association between moral distress and the mental health of nurses working at four selected hospitals in Iran during the coronavirus disease 2019 (COVID-19) pandemic.

METHODS: A cross-sectional questionnaire survey was conducted on 296 nurses working at the selected hospitals in Bushehr and Shiraz (south of Iran) at the time of the COVID-19 outbreak. The collected data were analyzed via logistic regression analysis.

RESULTS: The mean scores for nurses' moral distress were low (54.31 ± 24.84). The results of this study indicated more symptoms of mental issues among nurses (73.60%). Moreover, a significant association was observed between mental health and moral distress. Among the examined demographic variables, only gender had a significant association with mental health (p -value = 0.014).

CONCLUSION: The results of this study indicated that an increase in moral distress would lead to a significant increase in mental health issues of the examined nurses. Nurse managers and hospital policymakers should develop strategies to enhance nurses' level of mental health, as well as providing adequate emotional and family support for nurses. Considering the intensifying role of gender in this association, timely interventions are necessary to reduce the negative effects of workplace pressure/stress on female nurses.

Keywords: Care nursing, stress, workforce, COVID-19, mental health

¹ORCID ID: <https://orcid.org/0000-0003-3091-1940>

²ORCID ID: <https://orcid.org/0000-0003-1588-2336>

³ORCID ID: <https://orcid.org/0000-0003-4333-4126>

⁴ORCID ID: <https://orcid.org/0000-0002-0655-8342>

*Address for correspondence: Akram Farhadi, Assistant Professor, Department of Health Education and Promotion, Faculty of Health, Bushehr University of Medical Sciences, Bushehr, Iran. E-mail: ak.farhadi@gmail.com. ORCID ID: <https://orcid.org/0000-0002-0655-8342>

1. Introduction

On February 19, 2020, the Iran Ministry of Health, Treatment, and Medical Education reported the first case of the novel coronavirus disease 2019 (COVID-19) in Qom [1]. By 13 June 2021, the number of infected people with COVID-19 reached 3,020,522 and 81,911 people died from the COVID-19 outbreak [2]. Nurses, serving at the frontlines in the fight against the new coronavirus, are in direct contact with COVID-19 patients, and play a key role in caring for them [3]. Previous studies have shown that, when natural disasters or infectious disease outbreaks occur, nurses sacrifice their wellbeing to prevent the risks of epidemic diseases [4–7]. In such circumstances, nurses feel lonely and helpless because of the physical and mental pressures caused by excessively high workloads, which can ultimately lead to fear, fatigue, and mental health issues like anxiety and depression [8–10].

The nursing profession has always been considered one of the world's most risky and stressful jobs, and it has been reported in previous studies that the prevalence of stress, anxiety, and depression among clinical nurses is very high [11, 12]. The impaired mental health of nurses can negatively impact the quality of patient care [13, 14].

According to the results of previous studies, moral distress can affect nurses' mental health and work motivation [15, 16]. Some studies have identified moral distress as a potentially traumatic factor in reducing work motivation, increasing job burnout, and the chance of mental health disorders [17–19]. Different countries have different platforms for nurses' clinical activities, and this results in different nursing experiences. Besides, the socio-cultural role of women in the family structure in Asian countries -including Iran- may cause problems (e.g., the conflict between professional and familial roles) for women working in the nursing profession. Such role-related pressures can make them unaware of their own needs, and ultimately endanger their mental health [20]. Therefore, the study of nurses' mental health and its related factors in different socioeconomic conditions of different societies is of great importance.

The high prevalence of COVID-19 worldwide increased the pressure on the hospital care department and consequently increased job stress among nurses. Also, considering the important role of mental health and moral disturbance in the quality of nursing care, in addition to the lack of research in the field of Mental Health and Moral Distress in Iran at the time of

the COVID-19 outbreak, conducting such research in this area is essential. Therefore, the present study was conducted to determine the relationship between moral distress and the mental health of nurses working at the selected hospitals in Bushehr and Shiraz (south of Iran) at the time of the COVID-19 outbreak.

2. Methods

2.1. Participants and sampling

The present cross-sectional study was conducted on a group of nurses working at the selected hospitals of Bushehr and Shiraz cities which were designated to provide COVID-19 inpatient services. The sampling process started on April 3, 2020, and ended on May 4, 2020. The inclusion criteria were signing an informed consent form before participating in the study, not diagnosed with any mental disorder, and not taking psychotropic drugs (based on their self-reports). For sampling, based on the population of nurses working in each hospital, a certain number of them were invited to participate in the study by each center's head nurse, who was in charge of that center.

2.2. Measurements

The data were collected using a demographic survey form, Jameton's Moral Distress Scale (MDS), and Goldberg General Health Questionnaire (GHQ-28). The self-report questionnaires were designed using web-based software and sent to the participants via smartphone.

2.2.1. GHQ-28

The GHQ-28 [21] is a 28-item measure of emotional distress in medical settings. The scale has been divided into four subscales of somatic symptoms, anxiety/insomnia, social function, and depression symptoms. Each item has seven responses and can be scored from 0 to 3. Scores higher than 6 in each subscale, and total scores higher than 22 indicate the presence of psychological damage symptoms [21]. The validity and reliability of the GHQ-28 have been confirmed in studies by Nadi et al. and Abdollahi et al. [22, 23]. The Cronbach's alpha for the general health questionnaire was 0.76, and comprehensiveness, relevancy, and clarity of this questionnaire were 0.90, 0.94, and 0.91 respectively [23].

2.2.2. Moral distress scale

Jameton's MDS is the first measure of moral distress in the nursing population. This scale includes 28 items, measuring levels of moral distress that nurses experience in specific situations. Each item of the MDS is scored on a 7-point Likert scale, ranging from very low to very high. It is specified in the questionnaire that the respondents should leave statements on topics which they have not experienced unanswered, and if they find a moral problem, score it in the range of 1 (the least important problem) to 7 (the most important problem). The total possible score of the scale ranges from 28 to 196, and higher scores are indicative of more severe moral distress [24]. Psychometric properties of the MDS have been examined in the nursing population by Motevallian et al. They reported a test-retest reliability coefficient of 0.86 for the total scale [25].

2.3. Data analysis

Using the SPSS (version 22.0; SPSS Inc., Chicago, IL, USA) statistics, the collected data were analyzed through descriptive (frequency, mean and SD) and inferential statistics (logistic regression) (p -value = 0.05).

2.4. Ethical considerations

This study was approved by the Research Council of Bushehr University of Medical Sciences with ethical identification number IR.BPUMS.REC.1398.161. An informed consent form was obtained from every participant and the principles of confidentiality and anonymity were observed. Participation in this study was optional and participants in any stage of the study could leave the study. All methods were carried out in accordance with relevant guidelines and regulations.

3. Results

3.1. Demographic information

The data collected from 296 nurses, working at the selected hospitals in the south of Iran were analyzed. The average age of the participants was 32.02 ± 7.91 years, and their average work experience was 8.61 ± 7.44 years. Most of the participants held a bachelor's degree (87.70%), were single

Table 1
Means, standard deviations of socio demographic characteristics among nurses ($n = 296$)

Variables	Mean	Standard deviation SD
Age (mean. SD), year	32.02	7.91
Duration of job experience (mean. SD), year	8.61	7.44
Variables	Number	Percentage
Education		
Diploma	30	10.10
Above diploma	6	2.30
Bachelor	233	87.70
Master	24	8.10
PhD	3	1.00
Marital status		
Single	171	57.80
Married	119	40.20
Divorced and widowed	6	2.10
Sex		
Male	69	23.03
Female	227	76.07
Job status		
Morning	34	11.50
Rotational	264	88.50

Table 2
Means, standard deviations of moral distress variable and mental health variable among nurses ($n = 296$)

Variables	Mean	Standard deviation SD
Moral distress	54/31	24.84
GHQ-28	33/48	17.22
Somatization	8.29	4.69
Anxiety	9.28	5.32
Social dysfunction	11.88	8.52
Depression	4.02	4.56
Mental health ($n, \%$)	Number	Percentage
Healthy	78	26.40
Suspected for mental disorder	218	73.69

(57.80%), female (76.70%), and worked on a rotating shift basis (88.50%) (Table 1).

3.2. Moral distress and mental health

The average scores of moral distress and mental health of the examined nurses were respectively 54.31 ± 24.84 and 33.48 ± 17.33 . Among the subscales of the GHQ, the highest and the lowest averages were respectively related to social function (11.88 ± 8.52) and depression symptoms (4.02 ± 4.56). According to the determined cut-off point, 218 (73.60%) nurses were suspected of having mental health issues (Table 2).

Table 3

The association of moral distress and mental health domains (odds ratios, 95% confidence intervals); ($n = 296$)

Variable	Crude OR [95% CI]	P-value	Adjusted OR [95% CI]	P-value
Somatization	1.69 (1.40 to 1.93)	0.0001	1.71 (1.49 to 1.96)	0.0001*
Anxiety	1.71 (1.50 to 1.95)	0.0001	1.73 (1.51 to 1.98)	0.0001*
Social dysfunction	1.90 (1.57 to 2.31)	0.0001	1.97 (1.60 to 2.41)	0.0001*
Depression	1.98 (1.62 to 2.43)	0.0001	2.05 (1.66 to 2.54)	0.0001*
GHQ28	1.01 (1.00 to 1.01)	0.015	1.01(1.00 to 1.02)	0.009

*Adjusted for sex, age, marriage, education, duration of job experience Abbreviations: OR, Odds ratio; CI, confidence interval.

3.3. Regression model of moral distress and mental health

Among the demographic variables studied, only gender had a significant association with mental health (OR = 2.03, CI = 1.15–3.58, $p = 0.014$). Accordingly, having a female gender was shown to be a risk factor for mental health problems in nurses. Other variables, including age (OR = 1.01, CI = 0.98–1.05, $p = 0.288$), educational status (OR = 1.02, CI = 0.72–1.43, $p = 0.907$), marital status (OR = 0.70, CI = 0.45–1.09, $p = 0.122$), and work experience (OR = 1.01, CI = 0.98–1.05, $p = 0.280$), did not have a significant association with the mental health of the nurses in this study. Furthermore, moral distress affected the overall mental health and all its subscales, so that higher levels of moral distress resulted in more severe symptoms. After adjusting the confounding variables (age, gender, marital status, education level and work experience), the effect size changed slightly (OR = 2.05, CI = 1.66–2.54), while adjusting for other variables like somatization and anxiety caused only a negligible change in the ORs (Table 3).

4. Discussion

The present study was conducted to examine the association between moral distress and the mental health of nurses working at the selected hospitals in Bushehr and Shiraz (south of Iran) at the time of the COVID-19 outbreak. The results indicated a high prevalence of mental health problems among nurses working at the hospitals under study at the time of the COVID-19 outbreak. Moreover, a significant association was observed between mental health and moral distress. The obtained results will be discussed in more detail in the following paragraphs.

The results of this study showed that the level of moral distress was less than the mean, indicating the

desired level of moral distress in the examined nurses. Contrary to this finding, Borhani et al. [26], Anami et al. [27], and Bayat et al. [28] reported moderate levels of moral distress, and Dyo et al. [29] and Hamaideh et al. [17] reported high levels of moral distress among nurses. These inconsistencies may be due to different inclusion criteria, instruments and/or working conditions of the nurses. Numerous studies have shown the effects of different demographic variables on moral distress, including working conditions, higher work experience, poor communication patterns between nurses, shortage of workforce, inadequate care, insufficient support from the health system, and managers on moral distress [30–32]. The low work experience of the examined nurses, the relatively lower prevalence of the COVID-19 in the provinces under study, the solidarity between treatment teams at the time of the COVID-19 outbreak, and the empathy between people and treatment teams, who were repeatedly supported and encouraged by both people and officials, could be among the reasons behind the low level of moral distress among the nurses under study. Dyo et al. showed that moral distress is a complex phenomenon, in which cultural and ethnic differences are involved. Such differences make people with different cultural backgrounds react differently to a certain problem [29]. Thus, different cultural backgrounds of various groups of participants may cause differences in the results of studies on moral distress.

In relation to the mental health of the examined nurses, none reported symptoms of depression, but somatic symptoms, anxiety/insomnia and social dysfunction, along with the total GHQ-28 were apparent. Arsalani et al. [20], Malekzadeh et al. [33], and Hosseini et al. [34] found similar results in their studies. This result can be explained by considering that social dysfunction normally results from the lack of support resources and conflicts in the workplace. In such a situation, the individual has a negative view of his/her colleagues and clients [35]. Moreover, people work actively and more positively in a consistent

and conducive work environment, while in a negative and sad work environment, anger and pressure can reduce employees' energy [34]. The findings also showed that almost two-thirds of the examined nurses were at risk for psychological disorders. It seems that the COVID-19 pandemic played a crucial role in the obtained results in this study. Results of a study conducted by Kang et al. also showed a high prevalence of psychological disorders in nurses working at the time of the COVID-19 outbreak [36]. In their study, Jackson et al. reported that due to the high rate of COVID-19 related deaths and the lack of medical equipment for patients and protective equipment for medical personnel, healthcare personnel were at high risk of emotional crises and psychological disorders [37]. Results of the study by Smith et al. [38] showed that, due to the vagueness of short-term and long-term consequences of the COVID-19 and unsafe working conditions in terms of virus transmission, nurses were experiencing severe psychological pressures in their workplaces. Khamisa et al. [39] found that security risks in the workplace reduced the mental health of the nurses. Moreover, due to the shortage of nursing personnel in Iran, nurses are usually forced to work overtime, and most experience an excessively heavy workload [20]. All of these results were in line with the results of the present study, indicating the need for designing specific supportive interventions for nurses who serve on the frontlines of hospitals to fight against this novel virus.

The results of the study also revealed that, after adjusting the association based on the confounding variables, the moral distress score affected the scores of overall mental health, and all its subscales, so that an increase of moral distress score led to more severe mental health symptoms. Azizi et al. and Christodoulou-Fella et al. found similar results to this finding of the present study. Azizi et al. found that nurses' mental health can be predicted via moral distress [40]. Similarly, Christodoulou-Fella et al. showed that moral distress was significantly related to mental health [41]. In contrast, Qalawa and Hassan's findings indicated that moral distress had no significant relationship with the mental health of the nurses [42]. Their finding was not in line with the results of the current study. This inconsistency seems to be caused by the use of the Health Status Assessment Sheet Hart in Qalawa and Hassan's study. This tool only evaluates physical symptoms like joint pain, shortage of breath, anorexia, and tachycardia. But the GHQ-28, used in the present study, examines anxiety,

social dysfunction, and depression symptoms in addition to somatic symptoms.

The results of this study also showed a significant relationship between gender and mental health, so that, by adjusting the gender variable, the relationship of moral distress with all four subscales of mental health became stronger. In line with this finding, Perry et al. [43] showed that married male nurses had higher levels of mental health. Similarly, Qalawa and Hassan [42] showed that gender and work experience had significant relationships with mental health, so that their more experienced (>6 years) female participants had lower levels of mental health. Lai et al. conducted a study during the COVID-19 outbreak and showed that a significant proportion of healthcare providers experienced symptoms of depression, anxiety, and insomnia and that these symptoms were more common in female nurses [13]. Given that most of the participants in the present study were female and single, the obtained results are justifiable. To explain this finding, it can be stated that, considering the cultural contexts of the two studied cities (Bushehr and Shiraz), in which women play the key role in doing housework and parenting activities, there is higher work pressure on working women than working men [44]. Given the Iranian culture, the burden of these roles is likely higher on Iranian women than women in western countries. The concept of family has a much broader meaning than just husband/wife and children in the Iranian culture, and family members have responsibilities and obligations toward each other, yet most of these responsibilities and obligations have been assigned to Iranian women [20]. According to the results of other studies, role-related pressures cause a conflict between a woman's role as a wife and nurse in the official job position [45, 46].

This study has some limitations including being cross-sectional. This limits the interpretation of the causal relationship between the variables under study; therefore, for better understanding the causal relationship between these variables, longitudinal studies must be designed and conducted. Moreover, it is recommended to compare this relationship between a group of non-patient care nurses and a group of patient care nurses. The results of such a comparison will help to clarify the role of caring activities in the mental health and moral distress of the nurses. It should also be noted that this study was performed only in hospitals in two cities that were specifically for patients with COVID-19, which limits the generalizability of the results.

5. Implications for nursing and health policy

The fourth wave of COVID-19 is forming in Iran with more intensity than the previous three waves, and we must be well prepared for any terrible and unforeseen events in the future. Nursing is one of the riskiest and stressful jobs and has always been considered one of the most stressful professions in the world. In the COVID-19 epidemic, nurses will play an important role in preventing the collapse of health care. Nurses at the forefront of the fight against COVID-19 also make up more than half of the medical workforce. However, in the present study, it was found that nurses are going through a psychological crisis and in this situation, their mental health is endangered. Therefore, due to the workload of nurses, as well as the illness and death of a significant number of nurses, policymakers and managers of the Ministry of Health in Iran should make the provision of all cases of personal protection one of their highest priorities [12]. Also, by rapidly attracting nursing staff and optimizing and reducing the workload of nurses, we will see an increase in mental health and improve the quality of health care. In the meantime, more serious support for female nurses is doubly important due to the double pressures and tensions of the roles assigned to them. Considering the negative effects of moral distress on nurses' mental health and the quality of nursing care, it is necessary for these critical situations for hospital managers to take the necessary methods and measures to identify symptoms and factors affecting moral distress in nurses. Presenting courses in the ethical ways of coping nurses is considered a positive step towards reducing nurses' moral distress, and thus, improving their mental health as well as the quality of nursing care provided to patients.

6. Conclusion

The result of this study indicated a significant association between moral distress and the mental health of the nurses so that an increase in the level of moral distress was associated with more severe mental health symptoms in the examined nurses. Among the demographic variables, having a female gender had the greatest impact on the association between moral distress and the mental health of the examined nurses. Given the present study's findings and the presence of women in formal job positions - like the nursing profession- and their crucial roles in

the Iranian family structure, the revision of female nurses' support laws and the consideration of job privileges tailored to their needs and specific family conditions -e.g., caring for their older family members and children- seem quite necessary. In addition, holding continuous courses can help them improve their mental health, control their stress, and meet their psychological needs. Such courses, in addition to reducing their job pressure and the possibility of their moral errors, can improve their mental well-being, and as a result, cause them to provide better care for patients.

Acknowledgments

This study is part of a research project approved by Bushehr University of Medical Sciences. Hereby, the researchers express their gratitude and appreciation to the Vice-Chancellor for Research, "Clinical Research Development Center of Bushehr Persian Gulf Martyrs Hospital" and the "Bone and Joint Diseases Research Center of Chamran Hospital". They would also like to express their gratitude to all nurses who participated in this study.

Author contributions

Study design: RN, AF, MM. Data collection: AM, RN. Data analysis: MM, AF. Study supervision: AF. Manuscript writing: RN, AF, MM, AM. Critical revisions for important intellectual content: AF, RN.

Conflict of interest

The authors declare that no competing interest exists.

References

- [1] Mamishi S, Heydari H, Aziz-Ahari A, Shokrollahi MR, Pourakbari B, Mahmoudi S, et al. Novel coronavirus disease 2019 (COVID-19) outbreak in children in Iran: atypical CT manifestations and mortality risk of severe COVID-19 infection. *Journal of Microbiology, Immunology and Infection*. 2020.
- [2] WHO. COVID-19 Statistics in Iran: World Health Organization; 2021 [Available from: <https://covid19.who.int/region/emro/country/ir>].
- [3] Wilson MA, Cutcliffe JR, Armitage CNH, Eaton KN. Moral distress in the critical care air transport nurse. *Nursing Outlook*. 2020;68(1):33-44.

- [4] Aliakbari F, Hammad K, Bahrami M, Aein F. Ethical and legal challenges associated with disaster nursing. *Nursing Ethics*. 2015;22(4):493-503.
- [5] Khalid I, Khalid TJ, Qabajah MR, Barnard AG, Qushmaq IA. Healthcare workers emotions, perceived stressors and coping strategies during a MERS-CoV outbreak. *Clinical Medicine & Research*. 2016;14(1):7-14.
- [6] Kim Y. Nurses' Experiences of Care for Patients with Middle East Respiratory Syndrome-Coronavirus in South Korea. *American Journal of Infection Control*. 2018;46(7):781-7.
- [7] Liu C, Wang H, Zhou L, Xie H, Yang H, Yu Y, et al. Sources and symptoms of stress among nurses in the first Chinese anti-Ebola medical team during the Sierra Leone aid mission: A qualitative study. *International Journal of Nursing Sciences*. 2019;6(2):187-91.
- [8] Cheung T, Yip PS. Depression, anxiety and symptoms of stress among Hong Kong nurses: a cross-sectional study. *International Journal of Environmental Research and Public Health*. 2015;12(9):11072-100.
- [9] Park J-S, Lee E-H, Park N-R, Choi YH. Mental health of nurses working at a government-designated hospital during a MERS-CoV outbreak: a cross-sectional study. *Archives of Psychiatric Nursing*. 2018;32(1):2-6.
- [10] Tran TTT, Nguyen NB, Luong MA, Bui THA, Phan TD, Tran VO, et al. Stress, anxiety and depression in clinical nurses in Vietnam: a cross-sectional survey and cluster analysis. *International Journal of Mental Health Systems*. 2019;13(1):3.
- [11] Williams HL, Costley T, Bellury LM, Moobed J. Do Health Promotion Behaviors Affect Levels of Job Satisfaction and Job Stress for Nurses in an Acute Care Hospital? *JONA: The Journal of Nursing Administration*. 2018;48(6):342-8.
- [12] Zandian H, Alipouri Sakha M, Nasiri E, Zahirian Moghadam T. Nursing work intention, stress, and professionalism in response to the COVID-19 outbreak in Iran: A cross-sectional study. *Work*. 2021;68:969-79.
- [13] Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, et al. Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. *JAMA Network Open*. 2020;3(3):e203976-e.
- [14] Chomem P, Motter AA. Analysis of physical and physiological workloads of nursing in the surgical center. *Work*. 2021;68:425-35.
- [15] Dzung E, Wachter RM. Ethics in Conflict: Moral Distress as a Root Cause of Burnout. *Journal of General Internal Medicine*. 2020;35(2):409-11.
- [16] Danesh MK, Garosi E, Golmohamadpour H. The COVID-19 Pandemic and nursing challenges: A review of the early literature. *Work*. 2021;69:23-36.
- [17] Hamaideh SH. Moral distress and its correlates among mental health nurses in Jordan. *International Journal of Mental Health Nursing*. 2014;23(1):33-41.
- [18] Schluter J, Winch S, Holzhauser K, Henderson A. Nurses' Moral Sensitivity and Hospital Ethical Climate: a Literature Review. *Nursing Ethics*. 2008;15(3):304-21.
- [19] Fumis RRL, Junqueira Amarante GA, de Fátima Nascimento A, Vieira Junior JM. Moral distress and its contribution to the development of burnout syndrome among critical care providers. *Annals of Intensive Care*. 2017;7(1):71.
- [20] Arsalani N, Fallahi-Khoshknab M, Josephson M, Lagerstrom M. Iranian nursing staff's self-reported general and mental health related to working conditions and family situation. *International Nursing Review*. 2012;59(3):416-23.
- [21] Goldberg DP, Hillier VF. A scaled version of the General Health Questionnaire. *Psychological Medicine*. 1979;9(1):139-45.
- [22] Abdollahi MB, Saremi M, Kaydani M, Saranjam B, Azimi N, Rhamati A, et al. Survey of General Health of Shift Workers of Tehran Tunnel Construction Using GHQ Questionnaire. *Journal of Health*. 2021;12(1):74-83.
- [23] Nadi T, Poorolajal J, Doosti-Irani A. Socioeconomic Inequality in Health Literacy, Self-Rated Health, and General Health in Arak, Iran: a Population-Based Cross-Sectional Study. *Journal of Education and Community Health*. 2021;8(1):59-64.
- [24] Jameton A. Dilemmas of moral distress: moral responsibility and nursing practice. *Awhonn's Clinical Issues in Perinatal and Women's Health Nursing*. 1993;4(4):542-51.
- [25] Motevallian SA, Alizadegan S, hossein Vaziri M, Khoiee EM, Goushegiri SA, Ghoroubi J. Developing the moral distress scale in the population of Iranian nurses. *Iranian Journal of Psychiatry*. 2008;2(3):55-8.
- [26] Borhani F, Abbaszadeh A, Mohamadi E, Ghasemi E, Hoseinabad-Farahani MJ. Moral sensitivity and moral distress in Iranian critical care nurses. *Nursing Ethics*. 2017;24(4):474-82.
- [27] Anami K, Dadkhah B, Mohammadi M. Moral Distress of Nurses in Emergency Department of Ardabil Hospitals in 1395. *Journal of Health and Care*. 2019;21(2):166-74.
- [28] Bayat M, Shahririari M, Keshvari M. The relationship between moral distress in nurses and ethical climate in selected hospitals of the Iranian social security organization. *Journal of Medical Ethics and History of Medicine*. 2019;12.
- [29] Dyo M, Kalowes P, Devries J. Moral distress and intention to leave: a comparison of adult and paediatric nurses by hospital setting. *Intensive and Critical Care Nursing*. 2016;36:42-8.
- [30] Berhie AY, Tezera ZB, Azagew AW. Moral distress and its associated factors among nurses in northwest amhara regional state referral hospitals, Northwest Ethiopia. *Psychology Research and Behavior Management*. 2020;13:161-7.
- [31] Wenwen Z, Xiaoyan W, Yufang Z, Lifeng C, Congcong S. Moral distress and its influencing factors: A cross-sectional study in China. *Nursing Ethics*. 2018;25(4):470-80.
- [32] Woods M. Moral distress revisited: the viewpoints and responses of nurses. *International Nursing Review*. 2020;67(1):68-75.
- [33] Malekzadeh R, Akbarnataj K, Sarafraz S, F A. Comparison of Mental Health and Emotional Response Level in Nurses of Sari Psychiatry and Burn Center with Other Educational Centers in Mazandaran Province. *Nursing Development in Health*. 2019;10(1):49-60.
- [34] hosseini Z, Aghamolaei T, Safari-Moradabadi a, Ghanbarnezhad A. Investigating the Correlation between Self-Efficacy and Mental Health of Nurses and Head Nurses. *Nursing and Midwifery Journal*. 2018;15(12):921-30.
- [35] Mehrabi T, Ghazavi Z. Health assessment of female nurses of Isfahan University of Medical Sciences. *Journal of Hygiene and Health*. 2005;1:1-5.
- [36] Kang L, Ma S, Chen M, Yang J, Wang Y, Li R, et al. Impact on mental health and perceptions of psychological care among medical and nursing staff in Wuhan during the 2019 novel coronavirus disease outbreak: A cross-sectional study. *Brain, Behavior, and Immunity*. 2020;87:11-7.
- [37] Jackson D, Bradbury-Jones C, Baptiste D, Gelling L, Morin K, Neville S, et al. Life in the pandemic: Some reflections

- on nursing in the context of COVID-19. *Journal of Clinical Nursing*. 2020;29(13-14):2041-3.
- [38] Smith GD, Ng F, Li WHC. COVID-19: Emerging compassion, courage and resilience in the face of misinformation and adversity. *Journal of Clinical Nursing*. 2020;29(9-10):1425-8.
- [39] Khamisa N, Oldenburg B, Peltzer K, Ilic D. Work related stress, burnout, job satisfaction and general health of nurses. *International Journal of Environmental Research and Public Health*. 2015;12(1):652-66.
- [40] Azizi A, Sepahvani MA, Mohamadi J. Relationship between Moral Distress and Mental Health among Female Nurses. *Iran Journal of Nursing*. 2015;27(92):57-64.
- [41] Christodoulou-Fella M, Middleton N, Papathanassoglou EDE, Karanikola MNK. Exploration of the Association between Nurses' Moral Distress and Secondary Traumatic Stress Syndrome: Implications for Patient Safety in Mental Health Services. *BioMed Research International*. 2017;2017:1908712.
- [42] Qalawa SAA, Hassan HE. Implications of nurse's moral distress experience in clinical practice and their health status in obstetrics and critical care settings. *Clinical Practice*. 2017;6(2):15-25.
- [43] Perry L, Lamont S, Brunero S, Gallagher R, Duffield C. The mental health of nurses in acute teaching hospital settings: a cross-sectional survey. *BMC Nursing*. 2015;14(1):15.
- [44] Grzywacz JG, Frone MR, Brewer CS, Kovner CT. Quantifying work-family conflict among registered nurses. *Research in nursing & health*. 2006;29(5):414-26.
- [45] Schluter PJ, Turner C, Huntington AD, Bain CJ, McClure RJ. Work/life balance and health: the Nurses and Midwives e-cohort study. *International Nursing Review*. 2011; 58(1):28-36.
- [46] Simon M, Kümmerling A, Hasselhorn H-M. Work-Home Conflict in the European Nursing Profession. *International Journal of Occupational and Environmental Health*. 2004;10(4):384-91.