Article

Levels of generalized anxiety, moral distress, and moral courage among nurses: A comparative study in COVID-19 and non-COVID-19 wards

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Article Info

Article history:
Received: 18 Dec 2023
Accepted: 17 Dec 2024

Keywords:
Moral distress; Generalized anxiety; Moral courage; Nurse

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Abstract

Background: During the COVID-19 pandemic, nurses faced high levels of anxiety and moral distress. Nurses need moral courage to uphold proper moral performance.
Objectives: This study aimed to compare the levels of anxiety, moral distress, and moral courage of nurses working in COVID-19 and non-COVID-19 wards.
Methods: This descriptive comparative study was conducted on 107 nurses working in COVID-19 (n=53) and non-COVID-19 (n=54) wards at Zanjan University of Medical Sciences. Participants were selected using a convenience method. Data were collected using the Generalized Anxiety Disorder (GAD), Moral Distress Scale (MDS), and Professional Moral Courage (PMC) questionnaires. Data analysis was performed using descriptive and inferential statistics in SPSS 16 software.
Results: The majority of participants in the study were female (66%) and married (54.7%). There was no statistically significant difference in the mean (SD) generalized anxiety score between nurses in COVID-19 and non-COVID-19 wards [5.51 (2.53) vs. 4.83 (2.50), p=0.168]. The comparison of the mean (SD) moral distress score in nurses in COVID-19 and non-COVID-19 wards did not show a statistically significant difference [1.48 (0.71) vs. 1.70 (0.58), p=0.078]. Similarly, no significant difference was found in the mean (SD) score of moral courage between the two groups caring for COVID-19 and non-COVID-19 patients [59.66 (8.28) vs. 60.46 (6.06), p=0.983].
Conclusion: The study reveals elevated generalized anxiety in COVID-19 ward nurses compared to non-COVID-19 counterparts. No significant differences in moral distress severity or moral courage highlight shared resilience and commitment, emphasizing tailored support for nurses in varied environments.

Implications of this paper in nursing and midwifery preventive care:

- In addition to the importance of improving nurses' working conditions, the results of this study provide valuable information in the field of preventive care in nursing. Nurses with better mental health are more able to improve the quality of care and reduce medical errors.
- Identifying factors that cause anxiety and moral distress, creating a supportive work environment, and designing interventions to reduce them help improve preventive care in nursing.

Introduction

The COVID-19 outbreak has imposed unprecedented challenges on the healthcare system. During the COVID-19 pandemic, nurses on the front lines of the fight against the disease bore a heavy burden [1]. Facing widespread mortality, shortages of personnel, lack of personal protective equipment, long work shifts, and fear of contracting the disease had created an environment full of stress and anxiety for nurses [2]. Evidence shows that rates of anxiety and depression among nurses increased significantly during this pandemic [3]. In this regard, Naeimian et al also reported that nurses experienced high levels of anxiety for themselves and their families during the pandemic [4]. Stress and anxiety are influential factors in nursing care and can reduce the quality of care and patient safety, leading to medical errors [5].

This crisis severely affected not only the physical health but also the mental and moral health of nurses [6]. One of the most important challenges nurses faced due to the complexity of care was moral distress [7]. Nurses' constant presence at the patient's bedside and close contact with the patient across stages of treatment required ethical decisions [8]. In some cases, nurses lacked enough power and support to take appropriate measures [9]. Jameton defines moral distress as a negative and unbalanced psychological feeling that occurs in individuals due to their inability to execute moral decisions [10]. According to studies, approximately 36% of nurses are confronted with moral challenges every few days [11], which causes them to neglect the patient [12]. More than 80% of the nurses surveyed in Poortaghi's study experienced moderate to high levels of moral distress, leading to dissatisfaction, stress, burnout, and quitting their job as nurses [8]. Accordingly, patients experience decreased quality of care and prolonged hospitalization. Furthermore, organizations suffer staff loss and patient dissatisfaction [13]. In COVID-19 wards, various situations such as distrust of the patient's complaints and restraining nurses' involvement in the treatment process, opinions conflicting with those of physicians about the treatment process, absence of the physician in the ward, overcrowding, heavy workload, inadequate time, shared rooms, and corridor beds which cause patient privacy to be disregarded, result in moral distress and lower the standards of care for nurses providing care for patients with COVID-19 [12]. Plentiful qualitative studies have been conducted to explain nurses' experiences in the face of ethical issues that include incompetence, anger, sadness, and grief following experiencing moral distress [14,15]. Conflicting results have been reported in studies. For example, in the study by Arafat et al., the level of moral distress was low in nurses caring for COVID-19 patients [16]. However, in some studies, moderate to high levels of moral distress have been reported [17,18].

In situations causing moral distress, nurses require moral courage to demonstrate appropriate performance. Moral courage is one of the primary values in the nursing profession. When an individual is unable to perform a morally appropriate action, moral courage helps to strive to achieve the ultimate goal regardless of its consequences [19]. Nurses need moral courage to deal with moral challenges [20]. Sekerka et al. point out that nurses practice moral courage when facing situations directly threatening patient care [21]. This feature preserves an individual's moral identity and belief framework and protects the individual from the consequences of moral distress [22]. Dodek's study found that if individuals were courageous enough to follow moral principles, they would experience less moral distress. He also wrote that nurses lack sufficient courage to encounter moral challenges, which helps to create moral distress [23]. Morally courageous individuals are aware of losing something in return for performing the right action [21]. They may experience a threat to their reputation, embarrassment, anxiety, rejection at work, and job loss. For nurses showing moral courage in their performance, commitment to patients outweighs the concerns about the risks related to their own [24].

Anxiety caused by difficult working conditions and fear of contracting a disease can lead to moral distress. Nurses with greater anxiety may hesitate in making ethical decisions and feel guilty as a result. On the other hand, severe moral distress can lead to a decrease in moral courage and prevent nurses from taking ethical actions [25,26]. Studying the level of general anxiety, moral distress, and moral courage of nurses during the COVID-19 pandemic can help improve organizational culture, create an efficient work environment, and design appropriate support programs. Studies like this show how much the experience of such a crisis has led to changes in the psychological and moral conditions of nurses. The variables under study are context-dependent and culturally distinct, and examining them in different contexts and cultures provides a better understanding of these phenomena. In the available literature, few studies have compared the three variables of general anxiety, moral distress, and moral courage in nurses during the COVID-19 pandemic. Therefore, the present study was conducted based on the significance of these features in nurses in COVID-19 and non-COVID-19 wards with the aim of comparing the levels of generalized anxiety, distress, and moral courage.

Methods

This descriptive comparative study was conducted among Iranian nurses over three months, from August to December 2020 (at the peak of the third wave in Iran), in teaching hospitals of Zanjan, Iran. This study has received ethics approval from the ethics committee of Zanjan University of Medical Sciences (Ethical Code: IR.ZUMS.REC.1399.171).

The study population included all nurses working in COVID-19 and non-COVID-19 wards of Zanjan teaching hospitals. In the present study, Valiasr Hospital served as the COVID-19 center. Non-COVID-19 patients were admitted to Ayatollah Mousavi Hospital in Zanjan.

According to Aminizadeh et al. [21] and the following formula, the sample size was estimated to be 107. α=0.05, β=0.2, S1=18, 80, S2 =16,91, $\mu 1 = 56.72$, $\mu 2$=47, N1=N2=54.

Nurses were selected by convenience sampling method. The characteristics of the nurses participating in the study included having at least an associate's degree in nursing.

The data collection tool consisted of a four-section questionnaire. The researcher personally administered questionnaires to study participants during various work shifts (morning, evening, and night). Subsequently, upon completion, the researcher retrieved the questionnaires from the participants.

The first section included demographic information that surveyed characteristics, including age, gender, marital status, education, work experience, and income status.

The second section of the data collection tool includes the GAD-Q-IV questionnaire, which is used to assess the level of generalized anxiety. The GAD-Q-IV was used to assess anxiety in nurses during the COVID-19 pandemic. In total, this questionnaire consists of 9 questions, with a specificity of 0.82 and a sensitivity of 0.89. Total scores ranged from 0 to 12. The cutoff point in the tool is 5.7. A score higher than 5.7 indicates generalized anxiety, and a score lower than 5.7 indicates no generalized anxiety [27]. The validity and reliability of the translated version were assessed through confirmatory factor analysis, and the final analysis focused on four items with the highest factor loading [28].

The third section of the data collection included the Moral Distress Questionnaire (MDS). The Iranian Moral Distress Scale (IMDS), designed by Atashzadeh Shoorideh (2014), was used to assess nurses' moral distress during the COVID-19 pandemic. This scale consists of 30 items and three subscales of improper allocation of responsibilities and powers (10 items), errors (11 items), and violation of ethical principles (9 items). All items of this questionnaire are scored on a Likert scale from 0 to 4 (none to a great extent). The total score for each subscale is divided by the number of items for the subscale. A higher score indicates greater moral distress. The validity and reliability of this scale have been confirmed in the study by Atashzadeh Shoorideh et al. (Cronbach's alpha = 0.96 & ICVI > 0.85) [29]. The reliability of this questionnaire in the present study was assessed using the internal consistency method, and Cronbach's alpha was calculated (a=0.95).

The fourth section of the data collection tool was related to Professional Moral Courage (PMC). Professional Moral Courage (PMC) (2009) was used to assess nurses' moral courage during the COVID-19 pandemic. This questionnaire was designed by Sekerka et al in 2009. This questionnaire has 15 items scored on a 5-point Likert scale (from never to always) in five dimensions, including moral agency, multiple values, the endurance of threats, going beyond compliance, and moral goals. The range of scores in each item is from 1 to 5. Each dimension of the questionnaire has three items. The scores ranged between 15 and 75. The average score in each dimension and total was considered as the score of moral courage [30]. The psychometrics of the Persian version of this questionnaire have been evaluated in a study by Tehranineshat et al., and its reliability and validity have been confirmed in Iranian nurses (a=0.95) [31]. The reliability of the questionnaire in the present study was assessed by the internal consistency method, and Cronbach's alpha was estimated (a = 0.87)

Data analysis was performed using SPSS-16 software. Descriptive statistics, including mean and standard deviation for quantitative variables and frequency (percentage) for qualitative variables, were used. Data analysis was performed using the Chi-square test, Fisher's exact test, independent t-test, and Mann-Whitney test. Kolmogorov-Smirnov test was used to investigate the normal distribution of quantitative data. The

significance level was considered less than 0.05 ($P < 0.05$).

Results

The mean (SD) age of nurses in the group providing care for COVID-19 and non-COVID-19 patients was 31.05 (6.7) and 29.33 (6.22) years, respectively. In total, 54.7% of nurses caring for patients with COVID-19 and 64.8% of nurses caring for non-COVID-19 patients had less than five years of work experience. The majority of participants in the study were female (66%) and married (54.7%) (Table 1).

Table 1: Comparison of frequency and mean (SD) of demographic characteristics in the nurses working in COVID-19 and non-COVID-19 wards

Qualitative variable		COVID-19 wards	Non-COVID-19 wards	Test
		N (%)	N (%)	
Gender	Female	35 (66)	27 (50)	X^2=2.823
	Male	18 (34)	27 (50)	p=0.093*
Marital status	Single	24 (45.3)	24 (44.4)	X^2=0.008
	Married	29 (54.7)	30 (55.6)	p=0.999*
Level of Education	Diploma of Nursing	0	2 (3.7)	X^2=3.005
	Bachelor of Nursing	48 (90.6)	43 (79.6)	p=0.205**
	Master of Nursing	5 (9.4)	9 (16.7)	
Work experience (year)	< 5	29 (54.7)	35 (64.8)	X^2=2.964
	5-10	12 (22.6)	6 (11.1)	p=0.397*
	10-15	5 (9.4)	7 (13)	
	> 15	7 (13.2)	6 (11.1)	
Quantitative variable		Mean (SD)	Mean (SD)	T=1208
Age (year)		31.05 (6.7)	29.33 (6.22)	p=0.164***

* Chi-square; ** Fisher exact test; ** Mann-Whitney

In terms of frequency, the majority of nurses working in COVID-19 wards (64.2 %) experienced generalized anxiety compared to non-COVID-19 wards (44.4 %). A comparison of the mean (SD) generalized anxiety score in nurses caring for COVID-19 and non-COVID-19 patients did not show any statistically significant difference (p=0.168) (Table 2).

Table 2: Comparison of frequency and mean (SD) of generalized anxiety in the nurses working in COVID-19 and non-COVID-19 wards

Variable		COVID-19 wards	Non-COVID-19 wards	Test
		N (%)	N (%)	
GA	> 5.7	34 (64.2)	24 (44.4)	X^2=4.185
	< 5.7	19 (35.8)	30 (55.6)	p=0.041*
Total score		Mean (SD)	Mean (SD)	T=1.387
		5.51 (2.53)	4.83 (2.50)	p=0.168**

*Chi-square; ** Mann-Whitney test; GA: Generalized anxiety

The mean (SD) moral distress score in the group caring for patients with COVID-19 and in the other group was 1.48 (0.71) and 1.70 (0.58), respectively, which indicated no statistically significant difference between the two caring groups (p=0.078). Only the mean (SD) score of errors in nurses caring for COVID-19 and non-COVID-19 patients had a significant difference (p=0.039), so it was lower in the group caring for COVID-19 patients. However, the results of the

independent t-test showed that the mean (SD) score of improper allocation of responsibilities and powers, violation of ethical principles, and the total score of moral distress in the two groups did not have a statistically significant difference ($p > 0.05$) (Table 3).

Table 3: Comparison of the mean (±SD) of moral distress in the nurses working in COVID-19 and non-COVID-19 wards

Dimensions	COVID-19 wards	Non-COVID-19 wards	Test
	Mean (SD)	Mean (SD)	
improper allocation of responsibilities and powers	1.33 (0.8)	1.49 (0.68)	T=1229 p=0.208*
Errors	1.56 (0.79)	1.86 (0.67)	T=2.09 p=0.039**
Violation of ethical principles	1.54 (0.94)	1.75 (0.73)	T=1.28 p=0.203*
Overall Scale	1.48 (0.71)	1.70 (0.58)	T=1.78 p=0.078*

*Independent t-test; ** Mann–Whitney

Comparison of the mean (SD) of the moral courage score in all dimensions and the total score in the two groups of nurses caring for COVID-19 and non-COVID-19 patients did not show any statistically significant difference ($p>0.05$) (Table 4).

Table 4: Comparison of frequency and mean (±SD) of moral courage in the nurses working in COVID-19 and non-COVID-19 wards

Dimensions	COVID-19 wards	Non-COVID-19 wards	*Test
	Mean (SD)	Mean (SD)	
Moral Agency	12.81 (2.24)	12.98 (1.33)	T=1338.5 p=0.555
Multiple Values	12.18 (1.80)	12.20 (1.83)	T =1413.5 p=0.912
Threat Endurance	11.07 (2.15)	11.09 (1.5)	T =1419.5 p=0.942
Going Beyond Compliance	11.5 (2.17)	11.53 (1.71)	T =1344 p=0.582
Moral Goals	12.07 (1.99)	12.64 (1.44)	T =1206 p=0.153
Overall Scale	59.66 (8.28)	60.46 (6.06)	T =1427 p=0.983

* Mann–Whitney

Discussion

The aim of this study was to compare the level of generalized anxiety, moral distress, and moral courage of nurses working in COVID-19 and non-COVID-19 wards.

Overall, the mean generalized anxiety score was lower than the GAD cutoff point, indicating no anxiety. However, the majority of nurses caring for COVID-19 patients scored higher than the GAD cutoff point than non-COVID-19 patients. Also, the scores for generalized anxiety were higher in nurses caring for COVID-19 patients than in non-COVID-19 patients. In the study by Tamrakar et al., anxiety levels among nurses in the COVID-19 ICU were higher than those in non-COVID-19 ICU, but not statistically significant [32]. In the study by Heidariamebozorgi et al., the prevalence of

anxiety in nurses caring for COVID-19 was also reported to be high [33]. The results of this studies were confirmed in the present study. Direct contact with COVID-19 patients, workload, a sense of responsibility towards patients, and fear of transmitting the disease to the family can be reasons for increased anxiety in COVID-19 wards [34]. In a study by Wang et al. in China, the anxiety level of nurses during the COVID-19 outbreak was reported to be low. They stated that the cognitive emotion regulation strategies of acceptance and positive refocusing contribute to reducing anxiety or depression. Therefore, it can be said that people who have high emotional skills arrange their lifestyles in such a way that they experience less negative consequences, they are also skilled in creating and maintaining high quality relationships, unlike people who have low emotional regulation skills. They are facing the stress of life and adaptation, they will have a weaker adaptation and as a result they will suffer from anxiety. The use of these strategies will make nurses to evaluate events with a different perspective [35]. In the present study, according to the third peak of the disease wave, it seems that the factors disturbing the nurses' peace had reached their lowest level. Therefore, the overall anxiety score was lower than the cut-off point.

There was no significant difference in the severity of moral distress between nurses caring for COVID-19 and non-COVID-19 patients. The results of the study by Sarkoohi et al. were in line with the findings of the present study [36]. However, the study by Behbodi et al. [37] and Miljeteig et al. [38] showed that nurses directly involved in caring for patients with COVID-19 experienced more intense moral distress than nurses who were not directly involved. The findings substantiate that in Iran, more nursing staff is needed due to the shortage of nursing staff, particularly in clinical wards, increased workload, critical conditions of coronavirus disease, increased mortality rate, and prolonged hospitalization. Nurses gradually adapted to this situation; thus, their constant presence at the patient's bedside necessitated the need for ethical decisions. Hence, nurses have more power to deal with ethical issues in their day-to-day therapeutic actions [39,40]. Based on the different adaptation mechanisms that exist between people with the appearance of moral tensions in therapeutic environments, the way people face these situations is different; So, some people get depressed, despair and conflict. A few people have coped with these conditions, but unconsciously, under the influence of the hidden effects of moral distress, they experience job dissatisfaction and burnout.

The different results of the findings in different studies can be due to cultural differences in different societies and nationalities. Also, perhaps one of the reasons is that the degree of influence of these factors in creating stress depends on the type of work environment and the characteristics of the people themselves. Emotionally, they are more sensitive, they are more affected by the patients' conditions, and distress occurs in them more intensely [41].

Based on the findings of Lazarin, which is in line with the results of the present study, he states that nurses normally enjoy providing services to patients, but the stressful conditions prevailing in the work environment are considered to be an obstacle to the implementation of care. Also, one of the cases where the effect of ethical issues it increases, maybe it is its repetition. The repeated exposure of nurses to their own ethical issues is an important factor in being influenced by them. Nurses have more ability to face ethical issues in their daily actions [42].

Among the dimensions of moral distress, only the errors had a significant difference between the two groups, so that this dimension was more in the nurses caring for non-COVID-19 patients than in the group caring for COVID-19 patients.

Guttormson et al. study is consistent with our findings [43]. However, Shourideh et al. have named the incomplete and insufficient treatment of patients by employees (due to improper allocation of responsibilities and powers) and the unfair distribution of power among colleagues (after violation of ethical principles) as the most stressful factors in nurses [29], during the crisis period of the outbreak of Covid-19 seems due to the acute and complex conditions, the amount of medical errors and not reporting these errors was low in the research society.

In general, in critical departments, with the increase of nurses' authority, their moral distress increases. Therefore, considering that one of the most important factors in preventing and reducing moral distress is having moral courage. Therefore,

one of the reasons for the high moral courage of nurses in critical departments is the ability to prevent and reduce their moral distress [44].

There was also no significant difference in the score of moral courage between nurses caring for COVID-19 and non-COVID-19 patients. Consistent with the results of this study, Namadi et al.[45] and Sharifpour et al. [46] found in their studies that the ICU nurses' moral courage was not significantly different from non-ICU nurse. While Murray et al reported weak moral courage in nurses, which is the reason for this difference [47] These differences in the results could be due to different cultural and organizational contexts, head nurses' and managers' levels of support, nurses' attitudes toward care, the importance of job preservation for employees, and religious beliefs and values in the communities. The effect of these factors on creating courage is associated with the type of work environment and personal traits. Furthermore, the unexpected onset of coronavirus disease with high transmission and mortality rate has increased the nurses' sense of responsibility for an efficient and constructive presence to save the patient's life [48].

Working in critical sectors requires skills such as self-confidence, decisiveness, creativity, critical thinking, compliance with professional ethics, risk-taking, and decision-making in order to be able to carry out their activities effectively, so moral courage is high. Nurses are not far from waiting [49]. Aultman believes that moral courage is learned with the passage of time and observing the courageous behavior of others. He states that with increasing work experience and frequent encounter with therapeutic challenges, the occurrence of courageous behaviors in nurses increases. It seems that nurses in the critical departments have the mentioned characteristics [50].

There were two other limitations to the current research. Although all distributed questionnaires were returned to the researchers, some of the questionnaires had been defaced. Secondly, the nurses could have developed different perceptions of the main study variables at the time of completing the questionnaires due to specific conditions encountered in the workplace. However, such perceptions were beyond the control of the researchers.

Several studies have been conducted on the moral distress and courage of the nurses caring for patients with COVID-19. However, no study has compared nurses' moral courage and distress during the COVID-19 crisis. Consequently, the authors had access to a limited number of articles to compose a comprehensive discussion section and used other articles that measured the level of moral courage and distress in nurses caring for patients with a specific disease. Conducting further studies while considering the limitations of the present study and controlling the frequency of morally distressing situations in the study sections can produce a more accurate knowledge about the nurses' anxiety, moral distress, and courage in the clinical setting.

Conclusion

The results showed that nurses caring for the patients with COVID-19 had low anxiety levels. In fact, they have tried to take care of patients well. Also, the results indicated that the severity of nurses' moral distress and their level of moral courage were no significant difference, respectively. Therefore, it seems necessary to provide nurses with psychological and financial support and training to deal with coronavirus anxiety during the current crisis. On the other hand, nurses' courageous behavior in the face of moral challenges reduces the severity of their moral distress. In order to spread these courageous behaviors, raising nurses' awareness of ethical principles, eliminating organizational barriers, and encouraging nurses to participate in an open discussion about moral challenges are among the effective measures. In addition, despite the low levels of moral distress at the workplace, nurses are constantly confronted with it during their professional lives, which may negatively affect their morale to provide care effectively for patients. Therefore, managers' close and thoughtful attention to using training programs on ethical issues to identify the symptoms of moral distress and encourage nurses to share their experiences of this concept seems necessary. Applying the results of this research can pave the way for further research to investigate the factors reducing anxiety and moral distress and increasing moral courage in nurses.

Ethical Consideration

This study has received ethics approval from the ethics committee of Zanjan University of Medical Sciences (Ethical Code: IR.ZUMS.REC.1399.171). Informed consent was obtained from all participants in the study. The confidentiality of information and anonymity of individuals were observed during the study process.

Acknowledgments

This article is extracted from a research project approved by Zanjan University of Medical Sciences (Research code: 3990). The authors express their deep gratitude to all the nurses.

Conflict of interest

The first author of this article is the executive manager of the PCNM journal. The review process is conducted like other articles. The final decision regarding this article was made by the editor-in-chief and the editorial board of the journal.

Funding

This work was supported by Zanjan University of Medical Sciences (Grant No. 3990).

Authors' contributions

The authors' contribution during the study process was equal. All authors agree with the final version of the article.

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