



Original Article

Clinical Changes in Patterns of Moral Courage and Moral Distress Among Operating Room Nurses During COVID-19

Mahboobeh Khosravani¹ , Ashkan Karimi² , Sahar Khaki³ , Hamed Parnikh⁴ , Azam Moslemi⁵ , Zahra Mostafapour⁶ , Azadeh Amiri^{*7}

¹MSc of Medical-Surgical Nursing, MSc of Social Sciences, Department of Surgical Technology, School of Allied Medical Sciences, Arak University of Medical Sciences, Arak, Iran

²Operating Room Group, School of Paramedical, Hamadan University of Medical Science, Hamadan, Iran

³PhD Candidate of Nursing, Student Research Committee, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran

⁴Department of Operating Room, School of Allied Medical sciences, Arak University of Medical Sciences, Arak, Iran

⁵PhD of Biostatistics, Assistant Professor, Department of Biostatistic, Faculty of Medical Sciences, Arak University of Medical Sciences, Arak, Iran

⁶Master of Preoperative Nursing, Student Research Committee, Shiraz University of Medical Sciences, Shiraz, Iran

⁷PhD Candidate, Student Research Committee, School of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran, ZandSt, Namazee Sq., P.O. Box: 7193613119, Shiraz, Iran

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ABSTRACT

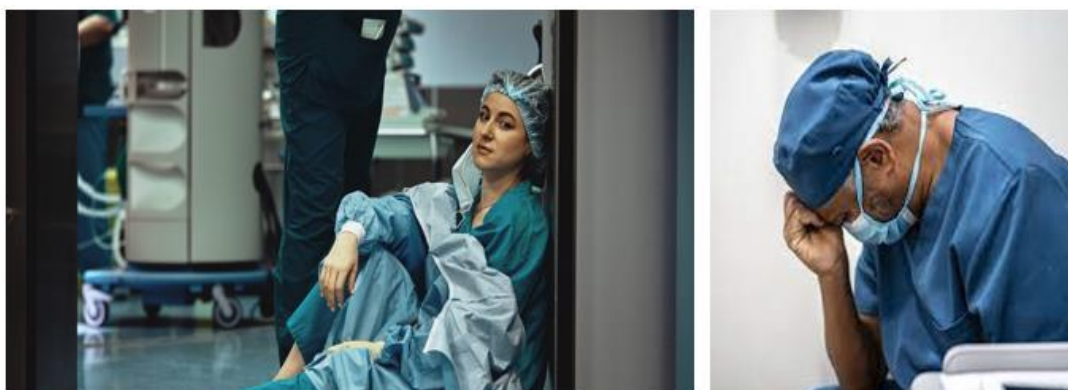
Healthcare personnel involved in COVID-19 care have been negatively affected by the associated excess stress. This study aimed to investigate the relationship between moral distress and moral courage among operating room nurses due the hidden conditions of the effects of COVID during the outbreak of the coronavirus disease (COVID-19) crisis. This descriptive-correlation study was conducted on all operating room nurses working in educational and medical centers in Shiraz, Iran, 2022. The samples (n=141) were selected using a convenience sampling method. The required data were collected by questionnaires of demographic form, the Professional Sekerka Moral Courage and the Moral Distress Scale. The gathered data were analyzed in SPSS software through descriptive and analytical statistics. The mean scores of moral courage and moral distress only nurses who as Circular Nurse were obtained at 61.67±7.79 was 47.4±18.9, respectively. It was revealed that there was a statistically significant relationship between the dimensions of moral courage and the dimensions of errors and inappropriate competencies and responsibilities of moral distress (P>0.05). The moral courage and moral distress of the nurses showed significant differences in terms of the type of employment, length of working experience, specialized field of surgery, and working ward, age, specialized field of surgery during the COVID-19 crisis. Moral agency and multiple values showed a statistically significant and direct relationship with total moral distress (R=0.20, P=0.01). Concerning the results of study, there can be stated that nurses were inclined to perform moral behaviors and an increase in their sense of responsibility during the COVID-19 crisis would lead to courageous behaviors and ultimately, a reduction in moral distress. Therefore, it is necessary that managers pay serious attention to the employment of training programs and improving the psychological knowledge of involved nurses and sharing nurses' experiences of moral distress.

* Corresponding author: Azadeh Amiri

✉ E-mail: Amiriea@sums.ac.ir

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GRAPHICAL ABSTRACT



Introduction

In December 2019, a new epidemic started in the city of China (Wuhan) and rapidly spread all over the world, causing a serious health problem. This virus is named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) [1]. In this period, to prevent deaths caused by COVID-19, vaccination and various cost-effective pharmaceutical methods were used, which had many positive and negative effects [2]. Health care providers in health settings in crisis, especially the COVID-19 pandemic is increasingly faced with complex moral and spiritual problems due to their professional status and role. One of the factors that has caused a lot of stress and anxiety in recent months among people in different communities is the disease caused by coronavirus disease 2019 (COVID-19), which has led to confusion and changes in living conditions. Due to the high prevalence of COVID-19, the main focus of medical staff and specialists has been on the treatment of this disease, which has prevented them from addressing the psychological conditions of these patients. Nurses at the forefront of health care responses find themselves in unprecedented situations and sometimes need to make highly important decisions for patients and their personal lives [3]. Some people with COVID-19 either initially have, or develop in the hospital, a dramatic state of confusion called delirium. Although rare, COVID-19 can cause seizures or major strokes. Muscular weakness, nerve injury, and pain syndromes are

common in people who require intensive care during infections.

In his theoretical model of moral courage, Meyer (2004) proposed four main factors that promote or inhibit moral courageous behaviour: (a) social and political context, (b) situational factors, (c) personal factors, and (d) perception of the situation.

Moral courage means the courage or inner strength a person has when acting in ethical conflicts according to ethical principles and one's own values and beliefs, even at the risk of negative outcomes for the acting individual. In nursing, morally courageous behaviour has been globally claimed essential in promoting patient safety and ethical care. Nursing is a moral profession for the sake of its universal aim for the patients' good (International Council of Nurses, manifesting in such principles as equality among patients and providing quality care.

Operating room nurses, as members of the treatment team, have vital responsibilities. The issues of respecting principles and values and adhering to professional and ethical principles are considered more critical and important in this profession than in other ones [4]. Often an increase in roles and the number of clients, social justice, access to healthcare services, and personal or organizational barriers hinder nurses to perform moral practices, which make them face moral challenges on a daily basis. One of the factors influencing nurses' decisions in these challenges is moral courage.

Moral courage makes nurses do the right thing and accept the consequences of it, even if it is difficult for them [5].

Sekerka *et al.* examined five dimensions of moral courage, including 1) moral agency, which is the predisposition toward moral behavior and possessing a strong will to engage as a moral agent, 2) multiple values, which is the ability to draw on multiple value sets in the process of moral decision-making and adhere to beliefs in spite of external concerns or demands, 3) endurance of threat, which is the acceptance of moral issues despite real or perceived dangers or threats, 4) goes beyond compliances, a person who not only considers the rules and their purposes but also goes beyond the scope of obedience to the rules to do what is right, just, and appropriate, and 5) moral goal, which is having the motivation to perform the tasks that require decision-making, of course, decisions that are associated with such virtues as prudence, honesty, and justice [6].

Nurses who have moral courage are able to overcome their personal fears and know how to provide the highest amount of benefit to the patients proportionate to the situation [7]. As a result of its complex conditions, the operating room environment poses a greater risk of adverse effects for patients than other emergency care units [8]. Moral courage helps nurses strive to achieve the ultimate goal without considering its consequences and act correctly by considering ethical principles [9]. In such an environment, the occurrence of critical situations and challenges becomes highly probable due to the complexity of working conditions; diversity of personnel, patients, and conditions; and wide extension of interactions and communication inside and outside of the operating room [10].

In a situation that creates moral distress, operating room nurses need moral courage to behave properly, that is, when a nurse is unable to perform a morally correct practice, moral distress becomes a common phenomenon among nurses and manifests its negative effects on mental health as anxiety and failure in working life as well as feelings of worthlessness, anger, depression, shame, and unhappiness in professional life [11].

Moral distress also adversely affects the quality of care delivery and can be a factor that makes the nurse avoid confronting the patient and disrupts the patient's recovery process [12]. Situations, such as distrust in the patient's complaints and limiting their involvement in the treatment process, having different opinions from physicians about the treatment process, physician's absence in the ward, overcrowded ward and heavy workload in the ward, lack of time, shared rooms and the present beds in the corridor, which violates the patient's privacy and confidentiality, cause moral distress and lower the standards of care by surgical nurses [13].

Due to the high population of operating room nurses, the existence of different moral distressing factors in these wards, and the lack of studies on the relationship between moral courage and moral distress among operating room nurses during the crisis of COVID-19, the present study aimed to investigate the relationship between moral courage and moral distress among nurses working in the operating room.

Materials and Methods

Data collection

The samples were selected using a convenience sampling method. The required data were collected using a three-part questionnaire. The first part included demographic information, such as age, gender, education, work experience, place of work, employment status, and marital status. The second part included the Professional Moral Courage Questionnaire developed by Sekerka *et al.* in 2009. This 15-item questionnaire is composed of 5 dimensions, namely moral agency, multiple values, endurance of threat, goes beyond compliance, and moral goal (n=3 items each) [6].

The items are rated on a 5-point Likert scale of 1=never, 2=rarely, 3=sometimes, 4=often, and 5=always. The moral courage score is obtained by calculating the average of the total score of the items, resulting in a total range score of 15-75. The scores are interpreted as low moral courage (15-34), moderate moral courage (35-55), and good moral courage (56-75).

In a study conducted by Mohammadi *et al.* to determine the validity of the Professional Moral Courage Questionnaire, its content validity index (CVI) and Cronbach's alpha coefficient were obtained at 81% and 0.85, respectively. With the permission of the mentioned researchers, the same version was employed in the present study [14]. The Cronbach's alpha of this instrument was measured again in the present study with a sample of 20 individuals, which rendered 0.76, 0.71, 0.86, 0.86, and 0.72 for the dimensions of moral agency, multiple values, endurance of threat, goes beyond compliance, and moral goal, respectively, and 3.91 for the total scale.

The third part of data collection was accomplished through the 30-item Moral Distress Scale containing three dimensions of inappropriate competencies and responsibilities (items 1-10), errors (items 11-21), and not respecting the ethical principles (items 22-30). The replies to the items are scored on a 5-point Likert scale of 0=not at all, 1=low, 2=moderate, 3=high, and 4=very high, in which 0 represents no stress, while 4 means maximum stress. The total score of this scale is obtained in the range of 0-120 by calculating the average total score of the items. In a study by Abbaszadeh *et al.* [15], the reliability coefficient of the questionnaire was estimated at 93% using Cronbach's alpha method and its validity was estimated at 88% by the CVI method. In another study, Etebari *et al.* [16] calculated the reliability coefficient of this instrument at 94% by Cronbach's alpha method. The criteria for entering the study include having at least a degree, nursing expertise, and satisfaction with participation in the study.

Procedure

To conduct the study and collect data, the study was approved by Shiraz University of Medical Sciences and the necessary permits were obtained to carry on the research in medical centers. Afterward, the participants were provided the necessary explanations and their

informed consent forms were collected. The questionnaires were then distributed among the participants in the research environments by the researcher.

At the time of completing the questionnaires, the researchers were available and answered the possible questions of the samples. After 60 days, the required data were collected from 141 nurses.

Statistical analysis

The gathered data were analyzed in SPSS(21) statistical software. Descriptive statistics were expressed as mean±standard deviation for quantitative data and frequency and percentage for qualitative data. Regarding inferential statistics, independent t-test and paired t-test or its non-parametric equivalent were used to compare the means of quantitative variables. Furthermore, ANOVA and Pearson correlation coefficient were employed to determine the relationship between quantitative dependent variables. In the performed tests, the confidence level was considered 95%.

Results and Discussion

A total of 141 operating room nurses participated in this study and their majority was women (70%) and held a bachelor's degree (67%). The mean age of the participants was estimated at 33.65±7.30 years. The participants had a minimum and maximum work experience of 1 and over 15 years, respectively, and it was found that most of them (37.1%) had worked for 1-5 years. The majority of the subjects were married (62.9%) and civil servants (59.3%), as presented in Table 1.

The mean score of moral courage was estimated at 61.67±7.79, which was at a good level. The highest and lowest mean scores of moral courage of operating room nurses were obtained at 13.3±1.7 and 11.5±2.08 for the moral agency and goes beyond compliance dimensions, respectively.

Table 1: Mean scores of Moral Courage and moral distress of participants according to their demographic characteristics

Variable		Number (%)	Average score ± standard deviation of moral courage	Average score ± standard deviation of Moral distress
Gender	Female	98 (70)	61.82± 6.87	78.37± 19.25
	Male	42 (30)	61.36± 9.69	75.33± 18.09
Statistics test			T-test	T-test
P - value			0.75	0.39
Work experience (years)	Less than 5 years	52 (37.14)	60.52± 9.14	78.54± 19.23
	5-10 years	37 (26.43)	62.92± 7.06	76.14± 16.19
	10-15 years	14 (10.00)	58.00± 6.36	78.93± 20.07
	more than 15 years	37 (26.43)	63.46± 6.26	76.70± 21.04
Statistics test			ANOVA	ANOVA
P-value			0.07	0.92
Marital status	Single	50 (35.71)	62.02± 8.10	76.50± 17.75
	Married	88 (62.86)	61.52± 7.73	78.06± 19.77
	Widow	2 (1.43)	60.50± 3.54	75.00± 11.31
Statistics test			ANOVA	ANOVA
P-value			0.91	0.88
Education	diploma	27 (19.29)	62.67 (7.54)	73.19 (19.66)
	Bachelor	94 (67.14)	61.87 (7.86)	78.15 (19.25)
	Master	19(13.57)	59.32 (7.72)	80.11 (15.73)
Statistics test			ANOVA	ANOVA
P-value			0.33	0.39
Number of children	0	18 (20)	58.28± 11.49	54.78± 17.91
	1	39 (43.33)	61.72± 5.49	46.51± 18.73
	2-3	33 (36.67)	62.97± 6.98	46.03± 21.16
Statistics test			ANOVA	ANOVA
P-value			0.11	0.26
Employment	Contractual	76 (54.29)	60.26± 7.51	47.68± 18.83
	Formal obligation	64 (45.71)	63.36± 7.83	47.19± 19.13
Statistics test			T-test	T-test
P-value			0.02	0.88
Field	General surgery	22 (16.67)	57.82± 11.06	50.27± 19.31
	ENTZ & Eye	18 (13.64)	62.72± 7.65	50.28± 21.18
	Urology	7 (5.30)	63.29± 6.16	39.57± 4.69
	Orthopedics	31 (23.48)	63.35± 6.45	47.55± 11.52
	Lungs and heart	7 (5.30)	59.86± 6.79	59.86± 26.86
	Pediatric surgery	8 (5.30)	60.00± 4.62	61.57± 19.76
	Gynecological surgery	40 (30.30)	62.78± 7.28	41.85± 20.92
Statistics test			ANOVA	ANOVA
P-value			0.18	0.06
Part	Operation room	121 (87.68)	61.36± 8.14	47.36± 19.59
	Emergency & Medical urgency	7 (5.07)	65.29± 2.81	46.86± 9.56
	Administrative Secretary & Health information	4 (2.90)	67.75± 1.89	48.50± 17.00
	Infectious part of the corona	6 (4.35)	61.33± 4.03	53.00± 18.85
Statistics test			ANOVA	ANOVA

P-value		0.25	0.91
Total	140 (100)	61.68± 7.79	77.46± 18.90
Age (years)	33.65± 7.30		
Duration of service in the operating room	9.91± 6.85		
Income (million Rial)	4.64± 1.84		

The mean score of moral distress was obtained at 47.4±18.9, which was low, and the highest and lowest mean scores of the moral distress of operating room nurses were related to the error and inappropriate competencies and responsibilities dimensions equal to 19.3±7.9 and 13.4±7.6, respectively, as listed in [Table 2](#).

Based on the results, there was no statistically significant relationship between total moral courage and total moral distress (P>0.05). However, a statistically significant and direct relationship was found between total moral courage and the inappropriate competencies and responsibilities dimension of the moral distress (R=0.20, P=0.01).

Moreover, moral agency and multiple values showed a statistically significant and direct relationship with total moral distress (R=0.20, P=0.01). It was also revealed that there was a statistically significant and negative relationship between the endurance of threat dimension of moral courage and the errors dimension of moral distress (R=-0.17, P=0.44). Furthermore, a statistically significant and direct relationship was found between the multiple values and moral agency dimensions of moral courage and the inappropriate competencies and responsibilities dimension of moral distress (R=0.29, P<0.05), as provided in [Table 3](#).

Table 2: Mean score of aspects and total score of moral courage and moral distress of operating room nurses

Row	Dimensions	frequency	Lowest score	Highest score	Mean	Standard deviation
Moral courage	Moral agency	140	7.00	15.00	13.30	1.70
	Multiple values	140	3.00	15.00	12.65	1.93
	Endurance of Threats	140	4.00	15.00	11.57	2.33
	Sensitivity Moral	140	4.00	15.00	11.55	2.08
	Moral Goals	140	3.00	15.00	12.60	2.07
	Total moral courage	140	21.00	75.00	61.67	7.79
Moral Distress	Errors	140	1.00	42.00	19.35	7.98
	Non observance of moral principles	140	0.00	34.00	14.68	6.88
	improper allocation of responsibilities and competencies	140	0.00	31.00	13.42	7.63
	Total Moral Distress	140	2.00	102.00	47.45	18.90

Table 3: Correlation coefficient of the relationship between the aspects of moral courage and those of moral distress in operating room nurses

Dimensions of moral courage	Moral agency	Multiple values	Endurance of Threats	Sensitivity Moral	Moral Goals	Total moral courage
Dimensions of Moral Distress						
Errors	-0.090	-0.087	0.17*	0.06	0.002	0.03
Non observance of moral principles	-0.12	-0.16	0.095	-0.097	-0.068	-0.082
improper allocation of responsibilities and competencies	-0.30**	-0.27**	0.02	-0.07	-0.16	-0.19*
Total Moral Distress	-0.20*	-0.21*	0.11	-0.04	-0.09	-0.10

*Note: N= 140, *p<0.05, and **p<0.01

According to the results of ANOVA, correlation coefficient, and independent t-test, there was a statistically significant relationship between the mean score of moral courage and some of the demographic characteristics, such as the length of working experience in the operating room, type of employment, and specialized field of surgery (P<0.05). Accordingly, moral courage was higher in nurses who had a longer work experience in the operating room (R=0.23, P<0.05) and were civil servants, as presented in Table 4. It was also revealed that nurses who were working in the fields of gynecology surgery and general surgery had the highest and the lowest levels of moral courage (69±0.00 and 57.8±11.06), respectively. During the COVID-19 crisis, due to the lack of nursing staff, operating room nurses were appointed in other departments, such as the emergency department, emergency medical services department, COVID-19 inpatient ward, hospital information system, or information technology (IT) department.

Nurses who were working in the clinical wards as the secretaries and clinical caregivers of the COVID-19 inpatient ward had the highest and lowest levels of moral courage (69±0.00 and 61.3±4.03), respectively, as indicated in Table 4.

Among the demographic variables, only age and specialized field of surgery showed a statistically significant relationship with the mean score of not respecting the ethical principles dimension of moral distress (P<0.05), so that older nurses had less moral distress, as shown in Table 4.

In addition, the nurses who were working in the fields of general surgery, urology, and gynecology had the lowest levels of moral distress (32±0.00), while those working in the field of pediatric surgery showed the highest levels of moral distress (91.7±19.7), compared to other nurses in other fields (Table 5). Operating room nurses whose workplaces were in the emergency and IT departments during the COVID-19 crisis had the highest and lowest levels of moral distress (87±0.00 and 53±0.00), respectively, as presented in Table 5.

The present study aimed to investigate the relationship between moral courage and moral distress among nurses working in the operating room. The results of the study showed that the mean score of nurses' moral courage was high during the COVID-19 outbreak. The findings of other studies have indicated that nurses' moral courage was high despite the stress of caring for patients with COVID-19 [17, 18], which was consistent with those of the present research. In a study conducted on Dutch nurses during the COVID-19 period, the level of moral courage was revealed to be high [19]. Nevertheless, Murray *et al.* and Day reported poor moral courage in nurses [17]. This discrepancy in the level of moral courage may be attributed to the differences in workplaces, ethical climate, organizational culture, support of managers, and the organization [20]. According to the results of a study by Mohammadi *et al.*, nurses needed strong moral courage and flexibility to care for patients during this epidemic [21].

Table 4: Correlation coefficient of the relationship between the aspects of moral courage and demographic characteristics in operating room nurses

Dimensions of moral courage	Moral agency	Multiple values	Endurance of Threats	Sensitivity Moral	Moral Goals	Total moral courage
Demographic characteristics						
Age	0.12	0.11	0.05	0.02	0.13	0.11
Duration of service in the operating room	0.22*	0.20*	0.20*	0.07	0.20*	0.23**
Income	0.10	0.13	0.19*	0.04	0.14	0.16

*Note: N= 140, * p<0.05, and ** p<0.01

Table 5: Correlation coefficient of the relationship between the aspects of moral distress and demographic characteristics in operating room nurses

Dimensions of Moral Distress	Errors	Non observance of moral principles	improper allocation of responsibilities and competencies	Total Moral Distress
Demographic characteristics				
Age	-0.07	-0.22**	-0.04	-0.13
Duration of service in the operating room	-0.01	-0.11	-0.04	-0.06
Income	-0.04	-0.03	0.04	-0.01

*Note: N= 140, * p<0.05, and ** p<0.01

The highest and lowest mean scores of moral courage were reported for the dimensions of moral agency and goes beyond compliance, respectively. This result was consistent with those of studies conducted by Moosavi *et al.* [20] and Namadi *et al.* [21]. It seems that operating room nurses consider themselves as moral agents and are highly inclined to engage in moral behaviors that demonstrate responsibility and management of difficult situations. Nonetheless, the pressure and concern of being reprimanded by hospital managers reduce the dimension of "goes beyond compliance" in nurses. Nurses strive to increase moral behaviors in the organization and tend to go beyond the rules of the organization; however, owing to the rules and regulations, they refuse to make a clinical decision that ends in reprimand since they do not feel supported by the organization because of their courageous behavior [10]. According to the findings of the current study, the mean score of moral distress was low among operating room nurses at the time of the COVID-19 crisis, which was in line with those reported in a study by Naranji *et al.* [2]. Nevertheless, the results of studies by Ahmed *et al.* [22], Turale *et al.* [19], and Behbodi *et al.* [23] showed that nurses

involved with COVID-19 patients experienced moderate levels of moral distress. The reason for the low score of moral distress in the present study was that nurses were constantly faced with the stressful conditions of the operating room and emergency department, and therefore, had already become able to adapt more to this issue. The highest mean scores of moral distress in operating room nurses were reported in the dimensions of errors (e.g., errors and delays in diagnosing the disease), not respecting the ethical principles (e.g., non-observance of justice among nurses), and inappropriate competencies and responsibilities (e.g., working with different levels of nurses and incompetent physicians) in descending order. In line with these results, the findings of studies by Abbasi *et al.* [7]. and Aminizadeh *et al.* indicated that the level of distress was higher in the dimension of professional errors than in the other ones [24]. However, Shoorideh *et al.* [9] mentioned that incomplete and inadequate treatment of patients by staff (inappropriate competencies and responsibilities dimension) and unfair distribution of power among colleagues (not respecting the ethical principles dimension) were the most stressful factors among nurses [24].

Moreover, based on the findings of a study conducted by Pauli *et al.*, American nurses experienced moral distress when working with staff lacking professional competence. Regarding this, "inappropriate competencies and responsibilities" was the most important cause of moral distress in this group of nurses [24]. It seems that during the crisis period of the COVID-19 outbreak, due to acute and complex conditions and the increasing number of patients, the rates of medical errors and non-reporting of these errors in the study population were high; in this respect, concerns about occupational errors threatened nurses in this study and were the most influential factors on their moral distress [25, 26].

It was revealed that there was a significant and direct correlation between moral courage and the dimension of inappropriate competencies and responsibilities of moral distress. In agreement with this result, Mohammadi *et al.* [13] and Aminizadeh *et al.* [24] reported that there was a significant relationship between moral distress and moral courage [27]. Accordingly, nurses with a higher level of moral courage experienced higher moral distress in working with nurses and physicians at different levels and without competency and qualifications.

The results of the present study showed that moral distress had a significant and direct relationship with the moral agency and multiple values dimensions of moral courage. In this regard, nurses with a higher tendency to do what was moral and a greater ability to integrate their values with professional and organizational values had a higher level of moral distress. Furthermore, as a person went more beyond obeying the rules to do the right and sensible thing to make clinical decisions, moral distress decreased in him/her. In agreement with the results of the present study, Mohammadi suggested that if nurses had the courage to do the right thing, even beyond the bounds of the rules, they experienced less moral distress [28]. Nurses who are more concerned to support patients, regardless of the consequences of their practice, are more likely to be courageous in dealing with the non-observance of moral principles, and

consequently, less likely to experience moral distress.

According to the results of the current study, moral courage had a significant relationship with some demographic characteristics, such as the length of service in the operating room, type of employment, and specialized field of surgery, which was in line with those of studies conducted by Namadi *et al.* [21] and Mohammadi *et al.* [29]. Moradzadeh *et al.* [30] found that there was a significant positive relationship between work experience and courage [31]. Mohammadi, in his study mentioned that as nurses' experience increased, the impact of barriers in the work environment decreased on nurses' performance and moral courage boosted [32].

Lai jianbo believed that moral courage was acquired over time and by observing the courageous behavior of others [32]. The findings of the mentioned study revealed that people who were civil servants and had job security showed more courageous behavior, which was confirmed by Mohammadi [28].

Nurses may refrain from doing the right thing in the face of ethical challenges in order to maintain their job position. Therefore, it is possible to increase nurses' moral courage by creating job security. According to the results of this study, in agreement with those of studies carried out by Behboudi *et al.*, moral distress decreased in operating room nurses with aging. This finding indicated that due to an increase in experience, the severity of moral distress declined with aging. This reduction in moral distress highlighted the need of providing moral distress education to all care providers regardless of their age, gender, and work experience. Moral distress is multidimensional, and various environmental, occupational, organizational, managerial, and personal factors play a role in its occurrence and prevalence, for which further research needs to be performed.

During the COVID-19 crisis, which required the appointment of operating room nurses in the wards involved with COVID-19 patients, the highest moral courage was observed in nurses who served as a secretary (admission and discharge) of the wards involved with COVID-19 patients. This result was consistent with those of

studies carried out by Mohammadi *et al.* [13] and Aminizadeh *et al.* [24].

The high level of moral courage in this department may be due to the fact that operating room nurses do not directly deal with patients who are critically ill and their lives are in threatening condition. Therefore, they face easier decision-making situations and have higher moral courage. The highest level of moral distress was related to the time when operating room nurses were working in the emergency department, which was in line with the findings of a study conducted by Moosavi *et al.* [20].

In their study, Tehranineshat *et al.* found that the level of moral challenges and distress was higher in nurses working in the intensive care unit and critical care unit than in other wards [33].

The reason for this increase can be attributed to the acute care conditions in these wards. According to the results, operating room nurses working in the field of gynecological surgery had higher moral courage, and those working in the field of pediatric surgery had the highest level of moral distress. In line with the results of the current study, Emanuel *et al.* mentioned that nurses working in the pediatric ward had higher moral distress and reported that nurses' confrontation with patients who needed more care and were in critical conditions exacerbated the context for moral challenges in nurses [34].

The issue of morale is one of the main debates today regarding fairness in work and dealing with patients. Unfortunately, in the contemporary era, due to the emergence of cultural and identity problems along with various other crises, the aforementioned principles are no longer responsive to the traditional approach, and there is a serious need to adapt and align those principles with today's examples and needs based on modern technology [35].

People with severe symptoms of Covid-19 are often forced to undergo mechanical treatment in the intensive care unit of a hospital, such as ventilators. Surviving this experience can lead to post-traumatic stress disorder, depression and anxiety [36].

Many patients who have experienced a mild form of the disease may experience long-term COVID-19 and continue to have symptoms of fatigue,

stress, and mental and moral problems up to 60 days after the illness, and in some cases, coronary symptoms that last up to two months [37].

It seems that various factors, such as the type of patients and their acute care conditions, high level of pressure and workload, special conditions in clinical wards, and the need for vital and extensive ethical decisions in caring for and treating critically ill patients, which make nurses face more moral challenges, cause that higher moral distress be observed in the field of pediatric surgery than in other departments.

Conclusion

Concerning the results of this study showing that there was a significant relationship between the dimensions of moral courage and moral distress and that the mean score of moral courage was high among operating room nurses, it can be mentioned that nurses were inclined to perform moral behaviors and an increase in their sense of responsibility during the COVID-19 crisis would lead to courageous behavior, and ultimately, a reduction in moral distress. The high mean score of the errors dimension, despite the low score of nurses' moral distress, indicated the fact that the rates of medical errors and reporting of these errors were high in the studied population and caused moral stress in nurses, which required more attention. Repetition of the causes of these distresses leads to an increase in the severity of nurses' distress. Moreover, due to the special conditions of COVID-19 patients, nurses are forced to make important decisions about the treatment process and special care of these patients. Since the consequences of moral distress can affect the quality of nursing care, it is necessary that managers pay serious attention to the employment of training programs aimed at identifying the symptoms of moral distress and the factors influencing it, improving the psychological knowledge of involved nurses, increasing communication skills of nurses, and sharing nurses' experiences of moral distress. Conducting studies on a larger scale that lack the limitations of the present study can increase the findings generalizability. The most important limitation of this study was the self-reporting

nature of the tools that should be considered in the generalizations of the results.

Study Limitations

One of the limitations of the study was related to difficulties in reaching participants who were able to accurately describe their feelings and thoughts. Another limitation was associated with the nature of the questionnaires, which were self-report, which restricted the findings generalization.

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Authors' Contributions

All authors contributed to data analysis, drafting, and revising of the article, and agreed to be responsible for all the aspects of this work.

ORCID

Mahboobeh Khosravani

<https://orcid.org/0000-0002-7846-4775>

Ashkan Karimi

<https://orcid.org/0000-0002-0306-6772>

Sahar Khaki

<https://orcid.org/0000-0003-1128-1197>

Hamed Parnikh

<https://orcid.org/0000-0002-8288-0827>

Azam Moslemi

<https://orcid.org/0000-0001-6336-4950>

Zahra Mostafapour

<https://orcid.org/0000-0002-6048-2094>

Azadeh Amiri

<https://orcid.org/0000-0003-3501-8078>

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