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Original Article

Examining the Relationship Between Nurses' Moral Distress and Quality of Life During the COVID-19 Pandemic: A Cross-Sectional Study

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Abstract

Background and aims: Nurses employed in coronavirus disease 2019 (COVID-19) units experienced extensive moral distress (MD), which could affect their quality of life (QOL). Hence, this study aimed to investigate the relationship between nurses' MD and QOL and factors related to them during the COVID-19 pandemic.

Methods: This descriptive-correlational study included 200 nurses employed in the COVID-19 wards of Medical Sciences Hospitals in Jiroft, Kerman, Iran, selected through a census sampling method. Required data were collected using a demographic questionnaire, the Corley MD Assessment Scale, and the World Health Organization QOL Scale. Descriptive statistics and stepwise multiple linear regression analyses were conducted using SPSS 22, with a significance level set at 0.05.

Results: Nurses' mean MD was 68.52 ± 37.32 (low), and the mean QOL score was 56.00 ± 17.67 (moderate). An inverse and significant relationship was observed between MD scores and QOL (r = -0.195, $P = 0.006$). The results of the linear regression test demonstrated that MD, gender, and position, with standard beta coefficients of 0.289, 0.187, and 0.171, respectively, had the highest regression effect on the QOL of nurses.

Conclusion: Although nurses working in the COVID-19 wards experienced low levels of MD, considering the moderate level of QOL, the impact of MD, and some background characteristics, it is suggested that health policymakers pay closer attention to develop mechanisms to control and reduce MD while improving QOL.

Keywords: Moral distress, Quality of life, Nurses, COVID-19

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Introduction

During the coronavirus disease 2019 (COVID-19) pandemic, nurses, as frontline health workers, played a crucial role in patient care by screening cases, isolating patients, and administering medications and special nursing measures (1). The COVID-19 pandemic, with its high contagion rate, insufficient care equipment, and rising hospitalizations and mortality, has considerably increased stress on nurses who care for patients (2-4). Moreover, it negatively impacted nurses' quality of life (QOL) through long working hours, challenging conditions, high workloads, insufficient personnel, work-life imbalance, limited career opportunities, low pay, and conflicts with other healthcare professionals (5, 6). The World Health Organization (WHO) defines QOL as an abstract concept shaped by cultural values and individual perceptions. It encompasses various dimensions, including physical health, mental health, social relations, and environmental well-being, influenced by personal goals and expectations (7). Studies have found that because nurses' QOL is of particular importance since they are responsible for human health and lives. More precisely, these health workers can provide more effective services when they have a better QOL (8). During the COVID-19 pandemic, healthcare providers faced rapid changes in treatment guidelines and had limited access to protective equipment, resulting in decreased job satisfaction and increased burnouts. Fears of contracting the virus and challenges in maintaining patient care standards heightened distress levels (9, 10). Therefore, moral distress (MD) was one of the factors that significantly affected nurses' well-being. MD occurs when nurses face dilemmas regarding treatment decisions, patient privacy, autonomy, and end-of-life care (11). In addition, it arises when they cannot act according to their beliefs due to organizational constraints, leading

to emotional and existential harm (12). Additionally, medical advancements often create ethical conflicts with nursing values, intensifying MD when institutional policies hinder their actions (13). These can threaten the health and well-being of nurses, predisposing them to illness and reducing their ability to provide safe, timely, impressive, and client-centered care (14). Previous studies have reported moderate-to-severe levels of MD in COVID-19 (15, 16). It was found that similar factors contributed to MD before and after COVID-19 (17). The pandemic has severely stressed nurses, thereby negatively impacting their well-being and QOL (18). Studies indicate that despite efforts to maintain care standards, unclear expectations, role ambiguity, and poor communication have decreased nurses' professional QOL while increasing their MD (19, 20). While nurses are crucial for continuity of care and health promotion, the stressful nature of the profession can harm their physical and emotional well-being, thus fostering negative self-attitudes (21, 22). Hence, QOL assessment is vital for understanding health and well-being, particularly for nurses. It is a complex concept influenced by age, culture, gender, education, and socio-economic status. Moreover, occupational factors and working conditions can considerably impact nurses' QOL (23). Given the essential role of nurses in healthcare organizations, this study seeks to investigate the relationship between nurses' MD and QOL, as well as factors affecting them during the COVID-19 pandemic.

Materials and Methods

Setting and Participants

This descriptive-correlational study followed the checklist of the Strengthening the Reporting of Observational studies in Epidemiology and was conducted in the COVID-19 wards of Medical Sciences Hospitals in Jiroft, Kerman, from October 1, 2022, to February 27, 2023. The inclusion criteria included showing a willingness to participate in the study, having at least one year of experience in COVID-19 wards, and holding a minimum of a bachelor's degree. On the other hand, the exclusion criteria were incomplete questionnaires, a history of psychiatric disorders or psychotropic drug use, and significant recent stressors (e.g., the death of a loved one, divorce, severe accidents, or serious illnesses in the past six months). Nursing managers provided a list of nurses who were directly involved in the care of patients hospitalized in the COVID-19 wards of these hospitals (N = 220). According to the inclusion and exclusion criteria, 200 of these nurses were selected by the census method. The researchers referred to Jiroft educational hospitals and explained the study's purpose. The patients were assured that they could voluntarily participate in the study and data would be used only for research. In addition, they completed a written informed consent form to ensure confidentiality. Further, the questionnaires were filled out outside working hours, and the patients were provided with refreshments to minimize fatigue.

Data Collection

The data collection tool was a three-part questionnaire. Demographic characteristics and background information, including age, gender, marital status, level of education, position, work experience, employment status, weekly working time, ward, and work shifts, were investigated. The second part, Corley's MD Scale, contained 36 items that were used to measure the severity of nurses' MD (24). The psychometric of original MD scale were examined by Tian et al (25). The test result indicated a Cronbach's alpha 0.98, 0.82, and 0.84 for individual responsibility, not in patient's best interest, and deception, respectively. Total variance reported by the three factors was 19.38. A result of 0.96 was obtained by the instrument during the theta test (25). The responses were classified using a seven-point Likert-type scale (0–6), with total scores ranging from 0 to 216. Scores 0–70, 71–144, and 145–216 were considered low, medium, and high MD, respectively. The validity and reliability of this tool have been confirmed in a study performed in Iran. The content validity method was utilized to examine and confirm the validity of the questionnaire. Furthermore, the reliability of the questionnaire was determined using the test-retest method. Moreover, internal consistency was calculated (ICC = 0.92), and its Cronbach's alpha was 0.93. (26). In the present study, Cronbach's alpha coefficient was estimated at 0.94. The third part included a shortened version of the WHO QOL Scale, which evaluates physical health, mental health, environmental health, and social relationships, totaling 24 items (7, 6, 8, and 3 items, respectively). The first two questions assess general health status and overall QOL (27). Raw scores for each subscale are converted into standard scores ranging from 0 to 100 using a specific formula:

$$\frac{\text{The lowest possible subscale score} - \text{Score obtained on the subscale}}{\text{The difference between the highest and lowest possible subscale score}} \times 100$$

The responses were measured using a 5-point Likert-type scale (1 = very bad to 5 = very good), resulting in total scores between 26 and 130. A mean score below 40, 40–60, and 60–100 was categorized as low, moderate, and high QOL, respectively. The psychometric of original WHO QOL Scale was examined by Skevington et al (28). Cronbach's has a value of 0.82, 0.81, 0.80, and 0.68 for physical health, psychological health, environment, and band social relationships, respectively (28). This scale has been validated in various Iranian studies, including one by Nikooseresht et al using analysis of variance for known group comparisons. Internal consistency for the domains ranged from Cronbach's alpha of 0.64 to 0.85, with the overall instrument achieving a Cronbach's alpha of 0.93 (29). In the current study, subscale reliability varied from 0.67 to 0.85, and the overall instrument was 0.92.

Data Analysis

The obtained data were statistically analyzed using SPSS,

version 22. Descriptive statistics included means and standard deviations for quantitative variables, as well as numbers and frequency percentages for qualitative variables. The skewness and kurtosis values for all variables fell between ± 3 and ± 10, supporting various inferential tests, including Pearson's correlation coefficient and analysis of variance. A stepwise multiple linear regression was conducted to assess the impact of MD on the QOL of nurses in COVID-19 wards. The Kolmogorov-Smirnov test confirmed data normality with a significance level of 0.829 (above 0.05). The model's residuals by a Durbin-Watson statistic of 1.74 indicated that the residuals are independent. The variance inflation factor and the tolerance index were used to assess collinearity among the independent variables; both metrics were below 10 and above 0.1, confirming no collinearity issues. A statistical distribution diagram was employed to evaluate the homogeneity of the residual variances, and it showed no discernible trend, indicating that homogeneity was satisfied. As a result, all regression assumptions were met. Additionally, demographic factors and MD were analyzed across three models. The first model, which included MD, accounted for 10% of the variation in QOL. The second and third models incorporated gender and position, which increased the explained variation in QOL to 13.3%. Finally, confidence levels and significance thresholds were 95% and 0.05, respectively.

Table 1. Participants' Demographic and Background Characteristics (N = 200)

Variable		N (%)
Gender	Male	62 (31)
	Female	138 (69)
Marital status	Single	64 (32)
	Married	136 (68)
	Other	0 (0)
Employment status	Temporary	49 (24.5)
	Contractual	25 (12.5)
	Permanent	126 (63)
Shifts	Fixed morning	56 (28)
	Fixed evening	23 (11.5)
	Rotating	121 (60.5)
Position	Head nurse	20 (10)
	Staff nurse	146 (73)
	Mobilized nurse	34 (17)
Employment duration(years)	< 5	48 (24)
	5-10	74 (37)
	> 10	78 (39)
Work hours per week (Hours)	< 40	44 (22)
	40-50	80 (40)
	> 50	76 (38)
Age (years), mean (standard deviation) Minimum-maximum		33.55 (7.12) 21-50

Results

The data analysis revealed that participants' ages ranged from 21 years to 50 years, with a mean age of 33.55 ± 7.12 years. Most participants were female (69%) and married (68%). Regarding employment, 63% were contractual or permanent, 39% had over 10 years of nursing experience, and 40% worked 40–50 hours per week. Additional details are in Table 1. Based on the results, while the overall mean MD score for nurses was low, over 40% experienced moderate to high levels of MD. The mean QOL score was moderate, with about 36% rating their QOL as high. Notably, the environmental dimension had the lowest scores, while mental health scored the highest (Table 2).

The results of Pearson's correlation test showed a negative and significant relationship between QOL and overall general health and its components (except for physical health) with MD in nurses ($P < 0.05$); the participants' QOL decreased with an increase in their level of distress (Table 3).

The univariate covariance test demonstrated that marital status significantly affected MD ($P = 0.001$), with married nurses displaying lower MD than single nurses. Other demographic factors (e.g., age and employment status) represented no significant relationships with MD ($P > 0.05$). Significant factors affecting QOL included gender ($P = 0.034$), position ($P = 0.047$), duration of employment ($P = 0.018$), and work hours per week ($P = 0.030$). Female nurses had higher QOL than male nurses, and those employed for less than five years had better QOL. In addition, nurses working less than 40 hours per week had higher QOL compared to others. Additionally, nurse and staff participants had lower QOL than supervisors (Table 4).

The linear regression results indicated that MD had the highest negative impact on nurses' QOL with a beta coefficient of -0.289, implying that a one-unit increase in MD led to a 0.289-unit decrease in QOL. Gender and position also positively influenced QOL, with beta coefficients of 0.187 and 0.171, respectively, indicating that increases in these factors corresponded to improvements in QOL (Table 5).

Discussion

This study explored the relationship between nurses' MD and QOL during the COVID-19 pandemic. The results confirmed that although the average MD scores were low, over 40% of nurses reported moderate levels of moral distress. Several studies have reported that nurses experienced moderate to severe levels of MD during the COVID-19 outbreak, and that mental health-related problems were more prevalent among nurses during this time (30, 31). Researchers suggest that the long-term effects of MD may worsen the pandemic's impact on nurses, threatening the healthcare workforce (32). The results of a study showed that the mean MD of nurses was at a moderate level, and high levels of MD increased the possibility of job burnout among them (33). Moreover, during the pandemic, nurses

Table 2. Mean Scores of participants' Moral Distress and Quality of Life

Variable	Mean (SD)	Minimum- Maximum	Level		
			Low n (%)	Moderate n (%)	High n (%)
Moral distress	68.52 (37.22)	10-184	110 (55)	85 (42.5)	5 (2.5)
Physical health	52.26 (12.13)	21.43-85.71	29 (14.5)	111 (55.5)	60 (30)
Mental health	56.12 (14.75)	16.67-100	27 (13.5)	99 (49.5)	74 (37)
Social relationships	53.87 (17.89)	0-100	30 (15)	111 (55.5)	59 (29.5)
Environmental health	47.32 (16.06)	0-93.75	58 (29)	101 (50.5)	41 (20.5)
Quality of life and overall general health	56.00 (17.67)	0-100	44 (22)	83 (41.5)	73 (36.5)

Note. Standard deviation.

Table 3. Relationship Between Participants' Moral Distress and Quality of Life

Variable	Moral Distress
Physical health	r=-.09*, *P*=.127
Mental health	r=-.199*, *P*=.005
Social relationships	r=-.182*, *P*=.010
Environmental health	r=-.209*, *P*=.003
Quality of life and overall general health	r=-.195*, *P*=.006

Note. *Pearson's correlation coefficient.

faced significant MD primarily related to patient care. Concerns about transmitting the virus to family, caring for patients who died without loved ones, and feelings of anxiety and isolation heightened their MD. These issues also contributed to sleep difficulties, thereby adversely affecting their mental health (34). Some researchers believe that the COVID-19 pandemic worsened ethical challenges in clinical practice, leading to increased MD among nurses due to complex care for critically ill patients, weak teamwork, and end-of-life issues (17). It is essential to develop solutions to reduce MD in nurses, as its worsening can lead to negative outcomes such as feelings of failure, lack of identity and motivation, frustration, reduced self-confidence, emotional issues, and decreased commitment. These factors can result in lower productivity and diminished quality of care (35).

A study found that while the overall QOL score for nurses in COVID-19 wards was moderate, over 60% reported low to moderate QOL. The lowest scores were related to environmental factors, while mental health received the highest scores. Researchers note that the pandemic significantly affected nurses' professional lives, leading to feelings of helplessness, despair, and guilt, notably decreasing mental health (36). In other studies, the QOL of frontline nurses during this pandemic was low, while the prevalence of depression among them was high (37, 38).

Based on the findings of another study, the QOL dimensions for nurses caring for COVID-19 patients were low, with physical health scoring the highest and general health the lowest (39). The results of previous research revealed that nurses with moderate anxiety from COVID-19 had significantly lower QOL, particularly in physical performance and emotional role limitations (18). To enhance nurses' QOL, it is advisable to establish counseling centers, offer ongoing mental health training, improve the work environment, and tackle sources of anxiety and tension.

Our findings confirmed a significant negative relationship between QOL and MD among nurses in COVID-19 wards, with MD leading to decreased QOL. Similar results were reported by Ness et al, in which the research emphasized the importance of disaster management training and improved communication to mitigate MD and enhance professional QOL in frontline healthcare providers. It underscored the importance of promoting the nurses' roles, creating open communication, and ensuring adequate support (36). Some researchers suggest that exposure to a life-threatening infectious disease can trigger emotional symptoms. During the pandemic, various nurses faced severe mental health issues, including anxiety, insomnia, depression, and secondary traumatic stress, impacting their professional QOL (40-42). Some strategies to reduce MD and enhance patient care include training competent staff, investing in resources, fostering collaboration between physicians and nurses, and promoting a healthier work culture (43). Therefore, it seems that creating a supportive work environment can reduce MD and ultimately improve nurses' QOL.

The univariate covariance test revealed that demographic and marital status could significantly impact nurses' MD in COVID-19 wards, with married nurses experiencing lower MD than single ones. Although mean MD scores were higher among men, contractual nurses, those on rotating shifts, and those with less than five years of experience and over 50 hours of work per week, these differences were not statistically significant. Factors such as futile end-of-life care, fear of COVID-19, decision-making challenges, poor teamwork, and gender have been identified as contributors to increased MD. Accordingly, addressing these issues may help reduce nurses' MD while enhancing care quality (17).

The results of one study demonstrated that younger, single nurses under 35 with children, temporary contracts, and less experience in intensive care reported significantly higher levels of MD (44). Arafat et al also noted that educational background influenced MD, with higher

Table 4. Examining the Effect of Demographic Variables on Participants' Moral Distress and Quality of Life

Variable	Group	N (%)	Moral Distress		Quality of Life	
			Mean (SD)[α]	*P*	Mean (SD) [α]	*P*
Gender*	Male	62 (31)	73.20 (30.26)	.885	51.61 (17.45)	.034
	Female	138 (69)	66.42 (40.01)		57.97 (17.47)	
Marital status*	Single	64 (32)	83.54 (35.76)	.001	57.42 (19.50)	.810
	Married	136 (68)	61.45 (36.04)		61.45 (36.04)	
Employment status**	Temporary	49 (24.5)	76.97 (41.16)	.251	58.67 (17.34)	.464
	Contractual	25 (12.5)	75.40 (34.86)		55.00 (23.93)	
	Permanent	126 (63)	63.87 (35.70)		55.15 (16.37)	
Shifts**	Fixed morning	56 (28)	67.08 (38.12)	.218	55.80 (18.45)	.147
	Fixed evening	23 (11.5)	60.04 (40.18)		50.54 (10.30)	
	Rotating	121 (60.5)	70.80 (36.44)		57.12 (18.31)	
Position**	Head nurse	20 (10)	67.54 (33.74)	.892	55.82 (17.38)	.045
	Staff nurse	146 (73)	76.08 (40.63)		53.30 (18.79)	
	Mobilized nurse	34 (17)	62.80 (53.73)		61.87 (17.43)	
Employment duration (years)**	<5	48 (24)	76.70 (43.18)	.508	61.97 (20.78)	.018
	5-10	74 (37)	63.08 (29.08)		55.91 (17.70)	
	>10	78 (39)	68.65 (39.87)		52.40 (14.53)	
Work hours per week (hours)**	<40	44 (22)	60.86 (37.38)	.071	59.65 (18.45)	.030
	40-50	80 (40)	63.93 (35.35)		56.87 (14.60)	
	>50	76 (38)	77.78 (37.87)		52.96 (19.77)	
Age (years)***		Mean (SD)[α]: 33.55 (7.12)	-	.388	-	.336

Note. α: Standard deviation; *: Independent t; **: Analysis of variance; ***: Pearson correlation coefficient.

Table 5. Final Regression Model of the Effect of Independent Variables of Moral Distress on the Dependent Variable of Quality of Life

Variable	B		SE	*t*	*P*	95% CI
	Non-Standard	Standard				
Fixed coefficient	56.01	-	3.546	15.798	<.001	48.993 – 63.038
Moral distress	-.123	-.289	.037	-3.377	.001	-.196 – -.051
Gender	6.169	.187	2.811	2.195	.030	.602 – 11.736
Position	7.562	.171	3.777	2.002	.048	.081 – 15.043
Summary of the second model	*P*<.001, F=7.098		R-square=.155		adjusted- R-square=.133	

Note. B:: Beta coefficient; SE: Standard error; CI: Confidence interval.

levels observed in nurses holding a bachelor's degree (45). The relationship between demographic characteristics and MD is complex, influenced by different factors, such as cultural context, healthcare systems, and challenges from the COVID-19 pandemic. Therefore, further investigation is needed to understand how these factors affect MD in various healthcare settings. Focusing on this issue can help create targeted interventions to support nurses and decrease MD in the workplace.

The univariate covariance test revealed that demographic factors (e.g., gender, position, duration of employment, and work hours) affected nurses' QOL in COVID-19 wards. Specifically, female nurses with less than five years of experience, working under 40 hours per week, and supervisors reported a higher QOL. Additionally, linear regression analysis indicated that after controlling the demographic variables, MD had the highest regression effect on QOL, followed by gender and position. The findings of a related study revealed that age, job burnout, male gender, and income significantly influenced QOL, with male nurses experiencing poorer QOL (18). In another study, overtime, long working hours, and transfer from a familiar practice environment to the COVID-19 ward were associated with decreased professional QOL and increased MD (36). Mohamadzadeh Tabrizi et al concluded that female nurses with lower incomes, particularly those who cared for COVID-19 patients with a history of mental illness and underlying medical conditions, had significantly lower QOL scores. In contrast, married nurses indicated higher QOL scores (18). Studies demonstrate that several demographic and work-related factors influence nurses' QOL, especially during the COVID-19 pandemic. These findings underscore the need for targeted interventions to

support nurses in high-stress environments, as their QOL directly impacts their well-being and the quality of patient care.

Limitations

One limitation of this study was addressing a specific field, which limits the generalization of the findings to other situations. Hence, future research should seek to replicate this study in other contexts and conditions similar to the COVID-19 pandemic to determine whether or not these findings hold true in different populations and settings.

Conclusion

This study examined the relationship between nurses' MD and QOL during the COVID-19 pandemic. The findings revealed that while overall MD levels among nurses in COVID-19 wards were low, nearly half experienced medium to high MD. Additionally, more than half reported moderate to low QOL. Importantly, increased MD significantly predicted a decrease in QOL. Thus, nursing managers and policymakers should prioritize interventions to reduce MD, such as providing resources and developing policies to address factors causing MD. Reducing MD can enhance nurses' QOL while improving patient care outcomes. This study underscores the importance of addressing MD among nurses, especially during a pandemic, and indicates the need for ongoing research on this significant issue.

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Authors' Contribution

Conceptualization: Habibe Amirmohammadi, Maryam Khandan.
Data curation: Habibe Amirmohammadi.
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Competing Interests

The authors declare no conflict of interests.

Ethical Approval

Ethical considerations in this study were observed based on the codes of protection of human subjects in medical research. The subject and method of the study were approved by the Ethics Committee of the Islamic Azad University, Kerman branch (IR.IAU.KERMAN.REC.1401.075). Moreover, written informed consent was completed, and the participants were assured of voluntary participation in the study, withdrawal from the study at any time, the anonymity of the questionnaire, and confidentiality of information. They were also assured that their information would be treated anonymously and confidentially for research purposes only.

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