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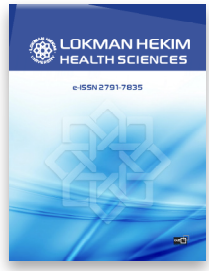

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ORIGINAL ARTICLE

The Effect of Surgical Nurses' Post-Pandemic Burnout and Psychological Distress on Moral Distress: Structural Equation Modeling

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Abstract

Introduction: Surgical nurses are at risk of experiencing psychological and moral distress because they work in high-stress environments. This study used structural equation modeling to examine the relationship between burnout, psychological distress, and moral distress experienced by surgical nurses after post-pandemic.

Methods: This study, conducted with a descriptive, cross-sectional, and correlational research design with the surgical nurses working at a university hospital between January and June 2022. Participants were administered the COVID-19 Burnout Scale, the COVID-19 Related Psychological Distress Scale, and the Moral Distress Scale. Data were analyzed using Pearson correlation and structural equation modeling.

Results: The study included 164 surgical nurses working at a university hospital. Of those, 84.1% of the participants were female, the mean age was 34.31±7.11, and 70.7% had a bachelor's degree. The nurses' burnout, psychological distress, and moral distress levels were found to be moderate. The findings revealed a significant and positive relationship between psychological distress, burnout, and moral distress. Burnout and psychological distress account for 84.8% of moral distress and stand out as significant predictors. Furthermore, burnout was found to have an indirect effect on moral distress through psychological distress. The resulting model had acceptable fit values.

Discussion and Conclusion: This study demonstrates that post-pandemic burnout and psychological distress significantly impacted moral distress among surgical nurses. The findings highlight the importance of psychological support and stress management interventions to enhance nurses' professional resilience.

Keywords: Burnout; COVID-19; Moral distress; Psychological distress; Surgical nurses

Moral distress is described by Corley (2002) as the anguish experienced by nurses when they make a moral judgment and feel that they could not implement it because of institutional restrictions.[1,2] According to Corley's moral distress theory, moral distress arises in the presence of internal and external conditions. Internal conditions arise from psychological factors, and external conditions arise from the work environment.[1] Factors such as anger, guilt, emotional and psychological distress that can lead to moral distress can be given as examples of internal conditions.[3] External conditions that lead to the development of moral distress are fatigue, alienation from

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the profession, low self-esteem, quitting and burnout.[4] It is reported moral distress could manifest itself with physical and psychological problems in nurses.[5]

As a result of their role as front-line caregivers of COVID-19 positive patients, nurses are vulnerable to experiencing moral distress caused by a variety of internal, external, and institutional factors.[2] The COVID-19 pandemic has placed unprecedented pressure on global healthcare systems. Sudden changes in working conditions, staff reassignment, and increased workload have increased stress levels, leading to burnout and emotional exhaustion. These intense pressures have continued to impact the pandemic, exposing long-standing problems in healthcare infrastructure. One study reported that healthcare workers continue to experience intense work-related stress following the pandemic. The findings indicate that nurses, in particular, and many other workers are facing work demands that increase their perception of injustice. While overall job satisfaction appears moderate, significant dissatisfaction is evident.[6] Another study examined professional burnout among Chinese nurses in the pre- and post-pandemic periods. First, levels of emotional exhaustion, depersonalization, and personal accomplishment were compared before and after the COVID-19 pandemic; second, long-term work-related stressors and structural elements affecting burnout were examined. The analysis revealed no significant differences in emotional exhaustion, depersonalization, and personal accomplishment between the periods. Qualitative data revealed that burnout was primarily fueled by chronic stressors such as promotion pressure, clinical workload, organizational demands, and work-family conflict. Although some nurses employed self-regulation strategies to maintain psychological balance, physical and emotional exhaustion persisted. Some reported experiencing emotional depersonalization, but the majority maintained a sense of empathy and responsibility. Furthermore, a sense of personal accomplishment stemmed largely from the patients' recovery process and the appreciation of professional values.[7]

The pandemic and subsequent nurse resignations have been reported to have significantly impacted healthcare performance, leading to global challenges that weaken healthcare systems, particularly in Europe and Asia. These ongoing shortages jeopardize quality patient care, leading to negative outcomes and increased mortality rates. The COVID-19 pandemic has exacerbated these problems, placing an extraordinary burden on healthcare systems and leading to increased workload, stress, and burnout among nurses.[8] The normal course of the COVID-19 and the universal interruption of health system have also adversely affected surgical care. All non-essential elective surgeries have been cancelled, affecting millions of patients in many parts of the world. The sadness, disappointment, anger and stress caused by the canceled surgeries have led to negative reactions in the communication and interaction between the patients and healthcare professionals.[9] Many perioperative guidelines on the administration of the surgical care during the pandemic period have been published and updated. Besides, adaptation to the guidelines required time and increased labor and workload of the surgical nurses.[9] Adaptation of the surgical nurses to this variable and high level of uncertainty, illness or quarantine, rotation of the nurses according to needs and competence, excessive work pressure and heavy workload created risks in terms of moral distress in the surgical care.[10]

The COVID-19 pandemic has significantly impacted surgical nurses' workload, psychological pressure, and the balance between professional values and ethical responsibilities. It is believed that these effects persist after the pandemic, with nurses experiencing high levels of burnout and psychological distress, which may further exacerbate moral distress.[11] In this context, this study is of great importance because it allows for a holistic approach to the problems experienced by surgical nurses after the pandemic and examines the relationships between burnout, psychological distress, and moral distress using a structural equation model. The findings of this study not only fill the gap in the literature but also have the potential to shed light on institutional regulations, policies, and clinical practices that will support the well-being of surgical nurses. Therefore, this study was designed to examine: (1) burnout, psychological distress, and moral distress levels related to COVID-19, (2) the association between burnout, psychological distress, and moral distress, (3) nurses' moral distress predictive factors and structural model. The study's aim is to using structural equation modeling to investigate the interrelationships among burnout, psychological distress, and moral distress experienced by surgical nurses in the post-pandemic period, and to construct a causal model elucidating these associations.

Materials and Methods

Design and Sample

This study design was descriptive and correlational. Structural equation model was constructed to test the hypotheses of the study. The dependent variable of the

research is moral distress, and the independent variables are burnout and psychological distress. According to the theory, these variables were chosen because it was stated that burnout in the external dimension and resulting from the work environment and psychological distress in the internal dimension were effective in the development of moral distress.[12] In the model, the effects of psychological distress and burnout on moral distress were examined.

The surgical nurses were invited to join the study. The study was carried out between January-July 2022. Sample adequacy was evaluated by post hoc power analysis. Using the correlation coefficient between COVID-19 Burnout Scale (COVID-19 BS) and Moral Distress Questionnaire (MDQ) the effect size was obtained as 0.56. When the Type I error was 5% and the sample size was 164, the post hoc power of the study was calculated as 99.9%. It is stated that the sample size of 150-200 is sufficient for the structural equation model analysis.[13]

The inclusion criteria of the study are as follows; (1) nurses working in surgical services, (2) ≥18 years, (3) agreed to participate in the research, (4) did not receive psychiatric or psychological treatment and did not have a mental illness.

Data Collection Tools

Introductory information form, which includes questions about sociodemographic characteristics, COVID-19 Burnout Scale, COVID-19 Related Psychological Distress Scale (CORPD), and Moral Distress Questionnaire in Nursing were used to collect data.

Introductory Information Form

This instrument, which the researchers developed after conducting a thorough review of the relevant literature,[14–16] contains 8 questions about the participants' introductory information, including their COVID-19 situation and their gender, age, marital status, educational status, and professional experience period.

COVID-19 Burnout Scale (COVID-19-BS)

The scale was created by Yıldırım and Solmaz in 2020.[14] It is a is a 5-point Likert scale and comprises a total of 10 items. All items of the scale are ranked between 1-5 points as "Never", "Always". The scores obtained from the scale range from 10 to 50. A high score on the scale indicates a higher level of burnout related to COVID-19. In this study, Cronbach's α coefficients is 0.94. The scale cut-off points were determined as 10-29 low, 30-37 moderate and 38-50 points high according to the cumulative percent distribution calculated in SPSS. Cut-off points for each scale were determined based on the cumulative percentage distribution of the total scores obtained from the study sample. The 33rd and 66th percentile values were used as reference thresholds to categorize the scores into three levels: low (≤33rd percentile), moderate (34th–66th percentile), and high (≥67th percentile).

COVID-19 related Psychological Distress Scale (CORPD)

Feng et al.[17] (2020) created the COVID-19 Psychological Distress Scale. Turkish validity and reliability was established by Ay et al.[15] (2021). This scale is a 5-point Likert-type scale and contains 12 items. All items of the scale are ranked between 1-5 points as "Strongly Disagree", "Strongly Agree". The scores could be got from the scale between 12 to 60. A high score means COVID-19-related psychological distress is high. In this study, Cronbach's α coefficients is 0.91. The scale cut-off points were determined as 12-36 low, 37-45 moderate and 46-60 points high according to the cumulative percent distribution calculated in SPSS. Cut-off points for each scale were determined based on the cumulative percentage distribution of the total scores obtained from the study sample. The 33rd and 66th percentile values were used as reference thresholds to categorize the scores into three levels: low (≤33rd percentile), moderate (34th–66th percentile), and high (≥67th percentile).

Moral Distress Questionnaire (MDQ)

Eizenberg et al.[18] (2009) created the moral distress questionnaire in Nursing, and Yücel et al.[16] (2020) made the Turkish validity and reliability. This questionnaire is a Likert type and includes 3 sub-scales and 15 items in total. All items of the scale are positive and are changed between 1-6 points as "I strongly disagree", "I agree". The score from the scale is between 15 and 90. A high score from the scale means that it is associated with a high level of moral distress. In this study, Cronbach's α coefficients is 0.79. In this study, Cronbach's α coefficient were 0.92. The scale cut-off points were determined as 15-29 low, 30-45 moderate and 46-90 points high according to the cumulative percent distribution calculated in SPSS. Cut-off points for each scale were determined based on the cumulative percentage distribution of the total scores obtained from the study sample. The 33rd and 66th percentile values were used as reference thresholds to categorize the scores into three levels: low (≤33rd percentile), moderate (34th–66th percentile), and high (≥67th percentile).

Data Collection

Data collection forms were uploaded to Google form and collected online because of the pandemic. The researcher went to the surgical services and conveyed the research link to the nurses in charge. Responsible nurses forwarded the link to all nurses working in their wards. When creating a google survey, participants are restricted from giving more than one answer. Thus, confidentiality is ensured by ensuring that the link is only forwarded to the requested persons.

Ethical Considerations

Ethical approval (2022/37) from the Erciyes University Clinical Research Ethics Committee was obtained (05.01.2022). The aim of the research was stated before starting the survey. Information was given to the nurses about the research. The nurses who consented to take part in the research were asked to continue their involvement by choosing the option "I agree to participate in the research." Personal data that could affect anonymity such as name and surname, were not asked in the survey. Thus, confidentiality and anonymity were ensured in the study. The study was conducted in accordance with the Declaration of Helsinki.

Data Analysis

The software platform SPSS 21.0 (IBM Corp., Armonk, NY, USA) was used to handle and analyze the data. Descriptive statistics are given as the number of units (n) and percentage (%). Data were analyzed with 95% confidence interval and significance at $p<0.05$. Student t-test in two groups and one-way Anova in more than two groups were done to compare the differences in introductory characteristics of the nurses with COVID-19 burnout, psychological distress and moral distress scores. Pearson correlation analysis was employed to investigate the association between COVID-19 burnout, psychological distress, and moral distress.

Confirmatory and exploratory factor analysis was done for the scales. The principal components method was applied for exploratory factor analysis. Kaiser-Meyer-Olkin (KMO) test value was determined as >0.76 and Bartlett sphericity test $p<0.01$ for all scales. Structural equation model (SEM) was applied to evaluate the factors affecting the level of moral distress, measurement and structural models were carried out using the AMOS package program. Besides, since the assumptions of multiple linear regression analysis (normality, linearity, linear relationship between dependent variable and predictor variables, Durbin-Watson value is 1.9) are provided, multiple linear regression analysis was done to reveal the predictive factors of moral distress.

Table 1. Participant demographic characteristics (n=164)

Descriptive characteristics	n	%
Gender		
Female	138	84.1
Male	26	15.9
Age (Mean±SD)	34.31 ±7.11	
Educational status		
High school	13	7.9
Associate degree	12	7.3
Licence	116	70.7
Master/PhD	23	14.1
Professional experience period		
1-4 years	60	36.6
5-9 years	17	10.4
10 years and above	87	53.0
Marital status		
Married	100	61.0
Single	64	39.0
Chronic disease		
Yes	40	24.4
No	124	75.6
Living person		
Alone	28	17.0
With mother and father	36	22.0
With partner and children	100	61.0
COVID-19 history		
Yes	70	42.7
No	94	57.3
Caring for COVID-19 patient		
Yes	164	100.0
No	0	0.0

SD: Standard deviation; COVID-19: Coronavirus disease 2019.

Results

The accessible population of the research consist of 188 nurses employed in the surgical wards of a university hospital in Türkiye. According to the volunteering principle, 164 nurses were parcipitated in the study. The average age of the nurses was 34.31±7.11, 84.1% were female, 70.7% had a bachelor's degree, 53.0% had 10 years or more professional experience, 61.0% were married, 75.6% did not have any chronic disease. 61.0% of the nurses stated they lived with their partner and children, and 42.7% of them stated they had COVID-19 infection. All of the nurses stated they took care of a COVID-19 positive patient at least once during the pandemic (Table 1).

Table 2. Mean, standard deviation and correlation values of the scales

	Mean±SD	1	2	3
1. MDQ	38.93±16.68	–		
2. CORPD	39.73±10.49	0.229**	–	
3. COVID-19 BS	32.16±10.05	0.319**	0.562**	–

Pearson rho (**p<0.01); MDQ: Moral Distress Questionnaire; CORPD: COVID-19 Related Psychological Distress Scale; COVID-19 BS: COVID-19 Burnout Scale.

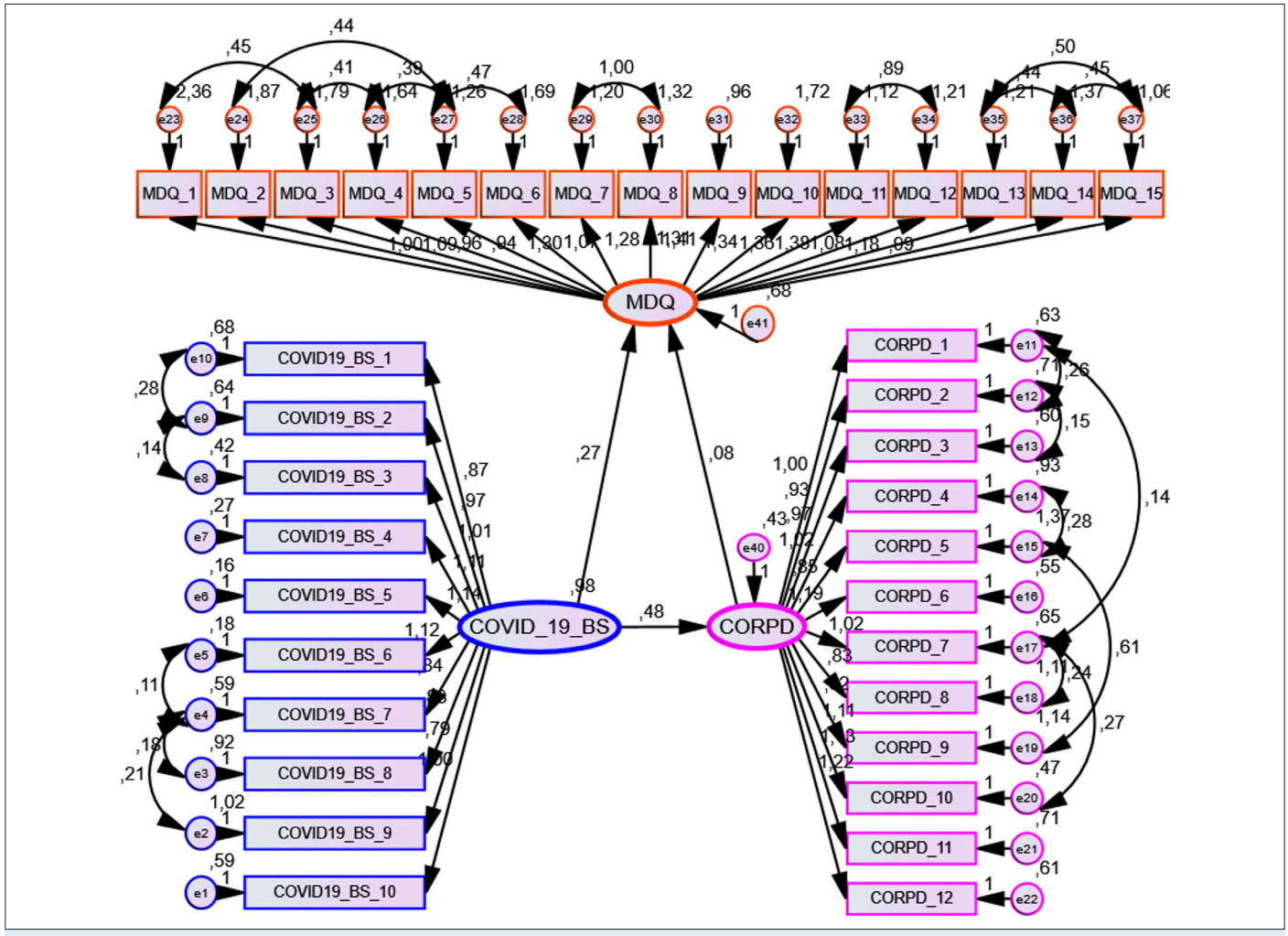

Figure 1. . Structural Equation Modeling Between Moral Distress, COVID-19 Psychological Distress and COVID-19 Burnout.

MDQ: Moral Distress Questionnaire; CORPD: COVID-19 Related Psychological Distress Scale; COVID-19 BS: COVID-19 Burnout Scale.

The mean scores of the nurses were COVID-19-BS: 32.16±10.05, CORPD: 39.73±10.49, and MDQ: 38.93±16.68, respectively. It was determined that the burnout, psychological distress and moral distress levels of the nurses were moderate. The results of the analysis revealed a weak and positive correlation between MDQ and CORPD (r=0.229; p<0.01), and a moderate and positive association between MDQ and COVID-19 BS (r=0.319; p<0.01) There is a moderate and positive correlation between the CORPD and COVID-19 BS (r=0.562; p<0.01) (Table 2). It was found that as the psychological stress and burnout level of the nurses increased, the moral distress levels also increased. In addition, as the level of psychological stress increases, the level of burnout also increases.

When the scale mean scores were compared according to sociodemographic characteristics of the nurses, statistically significant differences were observed between gender groups in terms of COVID-19-BS and CORPD scores (p<0.005). The burnout and psychological distress levels of

Table 3. Comparison of the sociodemographic characteristics of the nurses with the mean score of the scales

	COVID-19-BS Mean±SD	CORPD Mean±SD	MDQ Mean±SD
Gender			
Female	3.32±0.93	3.39±0.82	2.62±1.10
Male	2.65±1.18	2.86±0.99	2.45±1.17
Test/p	**t=2.745/p=0.005***	**t=2.874/p=0.005***	t=0.696/p=0.487
Marital status			
Married	3.22±0.95	3.40±0.81	2.56±1.13
Single	3.21±1.08	3.16±0.94	2.64±1.07
Test/p	t=0.056/p=0.955	t=1.778/p=0.077	t=-0.449/p=0.654
Chronic disease			
Yes	3.22±1.01	3.35±0.81	2.84±1.24
No	3.21±1.00	3.29±0.89	2.51±1.05
Test/p	t=0.026/p=0.980	t=0.376/p=0.708	t=1.626/p=0.106
COVID-19 history			
Yes	3.37±0.93	3.40±0.77	2.61±1.09
No	3.09±1.04	3.24±0.93	2.58±1.13
Test/p	t=1.793/p=0.075	t=1.141/p=0.256	t=0. 201/p=0.841
Educational status			
High school	3.10±0.36	3.00±0.32	2.92±0.34
Associate degree	3.23±0.32	3.16±0.14	2.28±0.38
Licence	3.29±0.08	3.31±0.08	2.57±0.10
Master/PhD	2.89±0.19	3.40±0.16	2.68±0.18
Test/p	F=1.069/p=0.364	F=0.759/p=0.519	F=0.746/p=0.526
Living person			
Alone	3.31±1.02	0.23±0.92	2.87±1.13
With mother and father	0.09±1.13	3.09±0.96	2.47±1.01
With partner and children	3.23±0.35	3.40±0.81	2.56±1.13
Test/p	F=0.395/p=0.675	F=1.845/p=0.161	F=1.148/p=0.320
Professional experience period			
1-4 years	3.25±1.13	3.26±0.87	2.58±1.14
5-9 years	3.04±1.12	2.99±1.18	2.62±0.80
10 years and above	3.22±0.88	3.40±0.79	2.59±1.15
Test/p	F=0.302/p=0.740	F=1.762/p=0.175	F=0.007/p=0.993

*: Student's t test was performed **: One-way ANOVA (analysis of variance); SD: Standard deviation; COVID-19: Coronavirus disease 2019; MDQ: Moral Distress Questionnaire; CORPD: COVID-19 Related Psychological Distress Scale; COVID-19 BS: COVID-19 Burnout Scale.

the female gender were found to be higher than the male gender. The statistical analysis indicated no significant differences in the scale score averages among the nurses with different marital status, history of chronic diseases, COVID-19 history, educational level, with whom and where the nurses lived, and professional experience (Table 3).

Results on Structural Equation Model Analyzes

Multiple regression analysis was performed to demonstrate the relationship between MDQ, COVID-19-BS, and CORPD. The regression model was found to be statistically significant ($p<0.001$; $R^2=0.848$). In the study, the levels of COVID-19-BS and CORPD accounted for 84.8% of the change

Table 4. The relationship with COVID-19-BS, CORPD and MDQ: Multiple linear regression analysis

Independent variables	B†	SE†	β†	t	p	95% CI†	
COVID-19-BS	0.427	0.097	0.420	3.572	**0.000**	0.155-0.538	R^2=0.848
CORPD	0.346	0.099	0.510	4.335	**0.000**	0.233-0.622	F=457.452
							p<0.001

†B: Unstandardized regression coefficient; SE: Standard error; β: Standardized regression coefficient; CI: Confidence interval; MDQ: Moral Distress Questionnaire; COVID-19-BS: COVID-19 Burnout Scale; CORPD: COVID-19 related Psychological Distress Scale.

Table 5. Instrument analysis results of the research

Intermediary factor	Standardized indirect effect (β)	Bootsrap (Lower Bounds/ Upper Bounds) %95 CI
MDQ <- CORPD <- COVID19_BS	0.249	0.102/0.425
MDQ <-COVID_19_BS <- CORPD	0.678	-0.109/0.218

Boostrap resampling =5000. COVID-19: Coronavirus disease 2019; CI: Confidence interval; MDQ: Moral Distress Questionnaire; CORPD: COVID-19 Related Psychological Distress Scale; COVID-19 BS: COVID-19 Burnout Scale.

in MDQ and COVID-19-BS and CORPD were a significant predictor. COVID-19-BS accounted for 42%, and CORPD accounted for 51% of the change in MDQ ($p<0.05$) (Table 4). In the initial structural equation model, some fit indices did not reach acceptable levels, so model modifications were performed to improve the overall model fit. For this reason, modifications were made in the model by taking into account the statistical significance. The standardized parameters of the final model are given in Figure 1.

Model fit index values related to the results of confirmatory factor analysis are χ^2/df=1.714, Goodness of Fit Index (GFI)=0.90, Incremental Fit Index (IFI)=0.90 and Comparative Fit Index (CFI)=0.90, RMSEA=0.066. The fact that the obtained χ^2/df value is below three and the RMSEA value is 0.066 shows that it is in the acceptable goodness-of-fit range. It is determined that GFI, IFI and CFI fit well. In structural equation modeling, burnout has a significant effect on moral distress.

When the instrument analyzes of the research are evaluated, according to the Bootstrap results, the COVID-19-BS has an indirect and positive effect on the MDQ via the CORPD (β=0.249, 95% CI (0.102, 0.425)). The CORPD has no indirect effect on the MDQ via the COVID-19-BS (β=0.678, 95% CI (-0.109, 0.218) (Table 5).

Discussion

Levels of Burnout, Psychological Distress, and Moral Distress Associated with COVID-19

With the pandemic, elective surgery programs have changed, the decision of which patient group can receive surgical care has led to ethical dilemmas and moral issues, and many patients cannot receive surgical treatment and their disease progresses. Nurses were at risk for moral distress in perioperative patient care. Postponing the surgeries caused nurses to be drawn to workplaces with excessive workload, such as the intensive care unit.[19] For these reasons, the burnout and psychological distress experienced by surgical nurses during the pandemic may also cause moral distress. Since our research is the first to reveal the psychological distress and burnout related to COVID-19 experienced by surgical nurses, the discussion was made with general nurses and healthcare workers.

In our study, it was determined that the burnout, psychological distress and moral distress levels of the nurses were moderate. Women experienced more COVID-19 Burnout and psychological distress than men, but no difference was found between moral distress and gender. Besides, the analysis did not reveal any significant association between moral distress, burnout, and psychological distress and the nurses' marital status, history of COVID-19, presence of chronic diseases, and duration of professional experience. Similarly, in the study conducted with healthcare workers, moral distress was not related to gender.[20] In a study completed with nurses, women experienced more burnout and fatigue.[21] These findings are consistent with meta-analyses that demonstrate that female nurses are more susceptible to negative mental health impacts.[22,23] Women may become more sensitive and frailer due to fluctuations in their levels of the hormones estrogen and progesterone.[24] Considering that women are more sensitive and fragile with the effect of hormonal changes may explain why women experience more burnout and psychological distress.

According to the moral distress theory, moral distress has an internal dimension including the nurse's psychological response such as perceived powerlessness and doubt, and

an external dimension such as the difficulties experienced in the work environment. According to this theory, moral distress may result in separation from patients and family, job dissatisfaction, resignation and burnout.[15] In our study, as the level of psychological stress and burnout related to COVID-19 of nurses increases, moral distress levels increase, and as the level of psychological stress increases, burnout levels also increase. Our study findings are consistent with the literature. A study conducted in 2024 during the COVID-19 pandemic examined the link between work-related moral distress, moral injury, and post-traumatic stress disorder symptoms in healthcare workers. The study findings showed that both moral distress and moral injury levels exhibited a significant and positive relationship with post-traumatic stress disorder symptoms; this relationship was found to be even more pronounced when both factors were considered together. These results demonstrate that ethical dilemmas and moral distress faced by healthcare workers constitute a significant risk factor for the development of post-traumatic stress disorder.[25] Moral distress can also lead to psychological consequences. In a qualitative study conducted with operating room nurses, it was reported nurses were happy not to be transferred to other services, but also felt guilty because they could not help their colleagues working in the COVID-19 intensive care unit.[26] According to our results, although the reasons that surgical nurses faced during the pandemic period were different, surgical nurses experienced moral distress, burnout and psychological distress like other field nurses. Nurses have experienced ethical dilemmas related to patient care and work distribution during the pandemic period, and inevitably, this may cause moral distress.

Nurses' Moral Distress Predictive Factors and Structural Model

Excessive workload and related burnout, psychological stress can contribute to moral distress, and moral distress can lead to negative psychological consequences.[27] Similar to the literature, our study determined that burnout and psychological distress associated with COVID-19 had important effects on moral distress. In our study, the effects of psychological distress and burnout experienced by surgical nurses during the COVID-19 pandemic on moral distress were examined using the structural equation model. Model fit index values related to the results of confirmatory factor analysis are χ^2/df=1.714, GFI=0.90, IFI=0.90 and CFI=0.90, RMSEA=0.066. The fact that the obtained χ^2/df value is below three and the RMSEA value is 0.066 shows it is in the acceptable goodness-of-fit range. It is determined that GFI, IFI, CFI and NFI fit in the acceptable range.[28] In structural equation modeling, it has been determined that burnout associated with COVID-19 has a significant effect on moral distress. Besides, according to the results of regression analysis, it was found that the levels of COVID-19-BS and CORPD accounted for 84.8% of the change in moral distress and were a significant predictor. COVID-19-BS accounted for 42%, and CORPD accounted for 51% of the change in MDQ. During the pandemic, the reduction in interaction with patients and the escalation in workload led us to think that it may have contributed to the emergence of moral distress by exacerbating burnout among nurses. According to the moral stress theory, the increase in the level of psychological distress and burnout caused by internal and external factors has a negative effect on moral distress.[15]

A meta-analysis investigating burnout and psychological distress among healthcare workers during the COVID-19 pandemic analyzed 250 samples from 292,230 healthcare workers across 46 countries. The findings revealed that burnout was present in 43.6% of healthcare workers, anxiety symptoms in 37.6%, sleep disturbances in 43.7%, stress exposure in 41.3%, increased post-traumatic stress disorder in 30.6%, and somatic symptoms in 25%. This study highlights the prevalence of psychological health problems among healthcare workers and the potential impact of these health conditions. The results suggest that burnout and other psychological distress among healthcare workers are increasing during the pandemic, negatively impacting their health and overall well-being.[29] A similar study found a strong correlation between levels of psychological distress and burnout.[30] Psychological distress and burnout like all the other department nurses, in surgical nurses can lead to mental disorders and negatively affect the quality of nursing care. For this reason, these symptoms should be followed up and taken under control by the nurse managers.

Study Limitations

The study has some limitations. Given that the study was conducted with surgical nurses from a single hospital, the findings can only be generalized to the surgical nurses of that specific hospital. Conducting the study in a certain time period and cross-sectionally may affect the establishment of the relationship between the variables. In addition, some factors that can affect moral distress are mentioned in the study, but many other personal and organizational variables can also affect moral distress.

Conclusions

The study found that, in the post-pandemic period, nurses' levels of burnout, psychological distress, and moral distress were moderate. Structural equation modeling revealed that increases in burnout and psychological distress were associated with higher levels of moral distress, and both were significant predictors of the moral distress experienced by nurses.

These findings emphasize the need for hospitals and administrators to regularly screen nurses for burnout, psychological distress, and moral distress in the post-pandemic context, and to implement appropriate interventions to protect mental health and enhance resilience. Supporting nurses by improving working conditions, sustaining resilience, and providing psychological support services is crucial. Additionally, frequent training programs and the development of comprehensive policies and practices in collaboration with managers and nurses are important for effectively addressing moral distress arising from psychological distress and burnout.

Ethics Committee Approval: The Erciyes University Clinical Research Ethics Committee granted approval for this study (date: 05.01.2022, number: 2022/37).

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