

Fear of COVID-19, psychological distress, work satisfaction and turnover intention among front line nurses

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Abstract

Aim: To examine the relative influence of fear of COVID-19 on nurses' psychological distress, work satisfaction and intent to leave their organisation and the profession.

Background: The emergence of COVID-19 has significantly impacted the psychological and mental well-being of frontline healthcare workers, including nurses. To date, no studies have been conducted examining how this fear of COVID-19 contributes to health, well-being and work outcomes in frontline nurses.

Methods: This is a cross-sectional research design involving 261 frontline nurses in the Philippines. Five standardised scales were used for data collection.

Results: Overall, the composite score of the fear of COVID-19 scale was 19.92. Job role and attendance of COVID-19-related training predicted fear of COVID-19. An increased level of fear of COVID-19 was associated with decreased job satisfaction, increased psychological distress, and increased organisational and professional turnover intentions.

Conclusions: Frontline nurses who reported not having attended COVID-19-related training and those who held part-time job roles reported increased fears of COVID-19. Addressing the fear of COVID-19 may result in improved job outcomes in frontline nurses, such as increased job satisfaction, decreased stress levels and lower intent to leave the organisation and the profession.

Implications for Nursing Management: Organisational measures are vital to support the mental health of nurses and address their fear of COVID-19 through peer and social support, psychological and mental support services (e.g., counselling or psychotherapy), provision of training related to COVID-19, and accurate and regular information updates.

Introduction

COVID-19 is a disease important in public health globally. As early as November 2019, a pneumonia-like disease emerged in Wuhan, China, which the World Health Organization later called Coronavirus Disease 2019 or COVID-19 (WHO, 2020). Within a few months, COVID-19 has caused significant damage to public health, while causing financial and economic loss in many countries. Globally, confirmed cases of the disease had reached 7 255 960, with 412 583 confirmed deaths. As of June 11, 2020, cases of COVID-19 had been reported in 216 countries on six regions. The US remains the country with the highest number of confirmed cases and fatalities, followed by Brazil, Russia and the United Kingdom, which account for 48% of all confirmed cases globally (WHO, 2020). In the Philippines, confirmed cases of COVID-19 have reached 24 175, with 1 036 confirmed deaths (Department of Health, 2020). Among ASEAN countries, the country ranked 2nd in terms of number of confirmed cases and deaths. This was despite extensive measures to prevent the transmission of the disease, such as strict social distancing, community quarantines and education campaigns about the disease.

Since the earliest days of the nursing profession, nurses all over the world have played a significant role during disaster and emergency situations, including disease outbreaks. Nursing organisations such as the International Council of Nurses (ICN) emphasised the critical role that nurses play during emergency and disaster situations. While nurses remain committed to this role, the unprecedented pressure exerted by the pandemic on every country's healthcare system has presented various challenges to nurses (e.g., increased patient volume, increased

patient load, COVID–19 protocols) that could affect their well-being and work performance. Much worse, nurses are risking their lives in order to carry out their duties, causing intense fear of being infected or unknowingly infecting others. According to the ICN, about 90 000 or 6% of all confirmed cases of COVID–19 worldwide were healthcare workers. Of this figure, 600 nurses had succumbed to the disease, a figure which was expected to continue rising. In the Philippines, the Department of Health reported a total of 2 736 healthcare workers infected with COVID–19 and 32 deaths. Among these confirmed cases, 1 006 were nurses (Department of Health, 2020).

To effectively play their role during this pandemic, it is essential for nurses to maintain their psychological and mental health (Mo *et al.*, 2020; Catton, 2020); however, the literature has shown that the emergence of COVID–19 has significantly impacted the psychological and mental well-being of nurses. Vast amounts of evidence have shown a significant association between the COVID–19 outbreak and adverse mental health issues such as stress or burnout, depression and anxiety (Wu *et al.*, 2020; Nemati *et al.*, 2020; Mo *et al.*, 2020).

The severity and fatality of and susceptibility to disease can create or intensify anxiety and fear among nurses, potentially affecting their health and well-being and work effectiveness during times of infectious epidemic crisis (Ahorsu *et al.*, 2020). In addition, frontline nurses, particularly those who work directly with coronavirus patients, often witness patients suffering and dying, impacting their emotional health and causing compassion fatigue (Alharbi *et al.*, 2020) and post-traumatic stress manifestations (Kameg, 2020). A systematic review of studies has shown a higher prevalence of anxiety and depression in nurses than in other frontline healthcare workers (Pappa *et al.*, 2020) and the general population (Mo *et al.*, 2020). Hence, supporting the nursing workforce during the COVID–19 pandemic is of paramount importance.

Since the onset of the coronavirus disease in November 2019, a huge number of studies have been conducted and published navigating the effects of the disease outbreak on mental health among nurses and other healthcare workers. However, despite the increasing number of studies on the topic, none have been conducted to examine how these COVID–19-related mental consequences influence nurses' work outcomes. Therefore, this study was carried out to examine whether frontline nurses' fear of COVID–19 contributes to psychological distress, work satisfaction and intent to leave their organisation and the profession. To our knowledge, this study was the first to assess such a relationship. The results of this study will provide input for policymakers and nursing administrators on how to effectively support frontline nurses during this pandemic.

Research Design

A cross-sectional research design was employed, using five standardised scales.

Samples and Settings

Frontline registered nurses employed in 5 hospitals in the Philippines were included in the study. To qualify to participate in the study, participants needed to be licensed nurses who hold either a full-time or contracted job status and currently work in a private or public hospital that provides services to coronavirus patients. Using the G power program, power analysis showed the required sample size of nurses was 220 to achieve an 80% power, where alpha was set at 0.05 and a small effect size at 0.05 (Soper, 2015). The small estimated effect size was chosen to ensure that a large sample was collected to detect meaningful correlations between variables. Survey questionnaires were distributed to 300 nurses and 261 responses were received (87% return rate).

Instrumentation

The Fear of COVID-19 Scale was used to examine nurses' apprehension about COVID-19 (Ahorsu *et al.*, 2020). This 7-item unidimensional scale was answered by nurses using a 5-point Likert scale which ranged from 1 (strongly disagree) to 5 (strongly agree). The composite score ranged from 7 to 35, with a higher score indicating greater fear of COVID-19. Previous research reported excellent predictive validity and reliability ($\alpha = 0.86$) of the scale (Ahorsu *et al.*, 2020; Gritsenko *et al.*, 2020). The Cronbach's α of the scale in the present study was 0.87.

The Job Stress Scale was used to assess nurses' experience of psychological distress while carrying out their work (House & Rizzo, 1972). Nurses answered each item on the scale using a 5-point Likert scale which ranged from 1 (strongly disagree) to 5 (strongly agree). The scale demonstrated excellent predictive validity and reliability ($\alpha = 0.83$) (House & Rizzo, 1972). The internal consistency of the scale in the present study was 0.87.

The Job Satisfaction Index was used to assess nurses' satisfaction with their current work (Schriesheim & Tsui, 1980). This 5-item scale consisted of items reflecting the 5 essential job elements: work, organisational support, co-workers, wage or salary and career development. Nurses answered each item using a 5-point Likert scale which ranged from 1 (strongly disagree) to 5 (strongly agree). Previous research reported excellent validity and reliability ($\alpha = 0.87$) of the scale (Labrague *et al.*, 2020). The internal consistency of the scale in this study was 0.92.

Two single-item measures of turnover intention were used to assess organisational and professional turnover intentions. Professional turnover intention was assessed by the item "Given the current situation, I am thinking about leaving nursing as a profession". Organisational turnover intention was assessed by the item "Given the current situation, I am thinking about leaving this healthcare facility". Nurses rated each item on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The test-retest reliability result of the items in the current study was .91, higher than those in previous research ($\alpha = .89$) (Labrague *et al.*, 2020).

Ethical Approval and Data Collection

The ethical clearance of the study was granted by the Ethical and Review Board of the University. Permission for data collection was sought from nurse directors from the identified hospitals prior to the actual collection of data. Participants were screened according to pre-determined selection criteria and written consent was sought. A short orientation was conducted before the survey questionnaires were completed to inform the participants of the nature of the research, its objectives, the potential benefits and risk involved in the study, and instructions on how to complete the questionnaires. After collecting the participants' written consent, the survey questionnaires enclosed in a sealed packet were handed to the respondents. Instead of using their names, participants were assigned unique codes to ensure confidentiality. The respondents were asked to complete the questionnaires during their free time and were given 20 to 30 minutes to complete the survey. The lead researcher entered the data collected into a database secured with a password. Hard copies of the questionnaires were kept in a secured cabinet. Data were collected from March 2020 to May 2020.

Data Analysis

Analysis of the data collected was performed using the SPSS version 23 software program (IBM Corp., Armonk, NY, USA). Percentages, means and standard deviations were the descriptive statistics used. The Pearson's r

correlation coefficient, analysis of variance (ANOVA) and independent t-test were used to identify correlations between the nurse, unit and hospital characteristics and fear of COVID-19. Multiple linear regressions (enter method) were employed, after checking for the multicollinearity and normality of the data, to identify which variables could explain the impact of fear of COVID-19 on nurse job outcomes. The level of acceptable significance was set at $p < 0.05$.

Results

A total of 261 nurses were included in this study. The mean age of the participants was 30.95 years. The majority of the participants were female ($n = 192$), unmarried ($n = 176$) and held baccalaureate degrees in nursing ($n = 215$). The average nursing experience was 8.32 years, while the average tenure in the present organisation was 4.73 years. The vast majority of nurses—95.8% ($n = 250$)—were aware of the existing workplace protocol related to COVID-19; however, less than 50% ($n = 106$) reported attending COVID-19-related training. The complete details of nurse characteristics are shown in *Table 1*.

Table 2 displays the means and standard deviations of the key study variables. The composite score for the Fear of COVID-19 Scale was 19.92 (SD: 6.15), which was above the midpoint. For the job satisfaction and psychological distress scales, the composite scores were 3.65 (SD: 0.99) and 3.09 (SD: 0.96) respectively. The composite scores for the organisational and professional turnover intention measures were 1.86 (SD: 1.26) and 2.23 (SD: 1.26) respectively.

Table 3 displays the bivariate analysis to examine the correlations between fear of COVID-19, nurses' variables and other key variables. The independent t-test showed a significantly higher mean Fear of COVID-19 Scale score in part-time or contracted nurses than in full-time nurses ($t = -2.492$, $p = 0.013$). Nurses who had not attended COVID-19-related training had a higher mean Fear of COVID-19 Scale score than those who had attended such training ($t = -2.349$, $p = 0.020$). Fear of COVID-19 had a significant negative correlation with job satisfaction ($r = -0.155$, $p < 0.05$). Further, fear of COVID-19 had significant positive correlations with psychological distress ($r = 0.155$, $p < 0.05$), organisational turnover intention ($r = 0.155$, $p < 0.05$) and professional turnover intention ($r = 0.155$, $p < 0.05$).

A multiple regression analysis was conducted to identify predictors of fear of COVID-19. Nurse variables which correlated significantly with fear of COVID-19 in the bivariate analysis were entered into the regression model. The model accounted for 4.3% of the variance of the fear of COVID-19 and was statistically significant ($F = 5.831$, $p = 0.003$). Job role ($\beta = 0.150$; $p = 0.015$; CI: 0.116 to 1.049) and attendance of COVID-19-related training ($\beta = 0.141$; $p = 0.022$; CI: 0.037 to 0.466) predicted fear of COVID-19, with nurses who reported no COVID-19-related training and held part-time job roles experiencing higher levels of fear of COVID-19.

Table 4 shows the results of the multiple regression analyses to examine the influence of fear of COVID-19 on nurses' job satisfaction, perceived general health, psychological distress, organisational turnover intention and professional turnover intention. After adjusting for nurse/unit/hospital characteristics, an increased level of fear of COVID-19 was associated with decreased job satisfaction ($\beta = -0.165$; $p < 0.01$), increased psychological distress ($\beta = 0.464$; $p < 0.001$) and increased organisational ($\beta = 0.298$; $p < 0.001$) and professional ($\beta = 0.219$; $p < 0.001$) turnover intentions. A unit of increase in the composite score of fear of COVID-19 was associated with a decrease in job satisfaction by 0.187 points. An increase in psychological distress by 0.506 was observed for a unit of increase in the composite score of fear of COVID-19. Further, increased organisational (0.721 points) and

professional (0.561 points) turnover intentions were observed for a unit of increase in the composite score of fear of COVID-19.

Discussion

This study investigated the influence of fear of COVID-19 on frontline nurses' job satisfaction, psychological distress, organisational turnover intention and professional turnover intention. To our knowledge, this is the first study to investigate such a relationship, thus contributing key results from this career area in the field of nursing management and leadership. Overall, the obtained mean scale score for the fear of COVID-19 measure in the present study was 19.92 (SD: 6.15), which was above the midpoint. Due to the lack of studies involving the nurse population, comparison was not possible. However, when the study results were compared to studies of the general population, it was revealed that the mean score in the present study was higher than those reported in Russia (17.4) (Gritsenko *et al.*, 2020), Belarus (16.6) (Reznik *et al.*, 2020), Turkey (19.44) (Bakioglu *et al.*, 2020) and Japan (18.71) (Masuyama, Shinkawa & Kubo, 2020). Since frontline nurses are directly involved in patient care, their risk of contracting COVID-19 is higher than the general population. This could contribute to their feelings of apprehension or fear of being infected or unknowingly infecting others, including their family members or friends. Further, pandemic-related concerns such as increased patient volume and patient load, provision of coronavirus-related precautions (Maben 2020), social distancing and community quarantine can intensify fears among nurses, affecting their psychological and emotional well-being and their work performance.

Healthcare institutions such as hospitals are frontline institutions during any disaster or disease outbreak. A well-planned workplace protocol should be in place, containing sets of actions relevant to disaster or disease outbreak, such as guidelines for caring for affected patients, safety practices when handling patients, relevant training, response plans and collaboration with other agencies at the local and national level (Hirshouer *et al.*, 2020). As nurses are frontline health workers, it is essential that they are oriented and familiar with the content of workplace protocol; they should be knowledgeable on and skilful in carrying it out (Ben Natan *et al.*, 2014; Labrague *et al.*, 2018). In this study, a significant proportion of nurses (95.8%) reported being aware of the existence of workplace protocol related to COVID-19. This result contrasts with results in previous research, in which many nurses (> 50%) working in hospitals were unaware of the existing workplace protocol related to disaster, emergency and disease outbreak (Labrague *et al.*, 2016). Higher awareness of workplace protocol related to COVID-19 may be attributed to the extensive campaign carried out by the Philippine Health Agencies to adequately prepare hospitals in the country for the COVID-19 pandemic. Hospitals were encouraged to develop COVID-19 protocols based on the standards set by the World Health Organization.

Training is a critical component of nurses' readiness and competence in any disaster or disease outbreak response. During a disease outbreak, nurses are often given new roles and are compelled to carry out added tasks, which, in some instances, may be beyond the scope of their usual nursing role (Gebbie & Qureshi, 2002). In this study, attendance of COVID-19-related training was identified as a significant predictor of fear of COVID-19: nurses who reported having attended such training experienced decreased levels of fear of coronavirus than those who did not. This result supports previous studies highlighting the role played by training, drills and exercises related to emergency and disaster situations (including disease outbreak) in preparing nurses for disaster and infection outbreak response and management (Labrague *et al.*, 2018; Labrague *et al.*, 2016). This result coincides with that of Wu *et al.* (2020), where nurses who received COVID-19 epidemic training reported a significant reduction in apprehension about the disease and increased mental health functioning compared with those

nurses who had not received training related to the management of COVID–19. However, despite this relationship, only 40.6% of nurses reported having attended relevant training related to COVID–19.

Job role significantly predicted fear of COVID–19, with part-time nurses reporting increased levels of fear. Considering the lower number of part-time nurses involved in this study, caution should be observed when interpreting this finding. Nevertheless, a higher level of fear of COVID–19 among part-time nurses could be explained by the fact that these nurses are usually used to “fill in” for regular staff and may be unfamiliar with the routines of the wards or units, their daily operations and processes, including care management processes for COVID–19 patients. Such instances may ultimately amplify fear of COVID–19 in this group of nurses.

Regression analyses revealed a significant association between fear of COVID–19 and psychological distress among nurses. Although there is a lack of similar studies of the nursing population, this relationship is in accordance with previous studies involving the general population. For instance, in a study involving 1 304 Turkish individuals, increased levels of fear of COVID–19 were strongly linked to negative emotional states including anxiety, depression and stress (Satici *et al.*, 2020). A study by Bakioglu *et al.* (2020) showed a similar pattern: fear of COVID–19 had a significant positive relationship with anxiety, depression and stress. While fear is considered helpful in motivating individuals to respond effectively to a given threat or stimuli, extreme and persistent fear may result in negative psychological reactions such as stress, depression and anxiety (Gorman, 2008).

Finally, the results of this study demonstrated significant direct effects of fear of COVID–19 on nurses’ job satisfaction, organisational turnover intention and professional turnover intention beyond the influence on their personal characteristics. To the author’s knowledge, this study is the first to empirically test the association between fear of COVID–19 and nurses’ job outcomes, contributing original knowledge on nursing science, particularly in the area of nursing administration. As a psychological reaction to a threatening situation or stimuli (Gross & Canteras, 2012), fear associated with coronavirus may interfere with work performance in nurses, leading to higher levels of job dissatisfaction and increased intentions to leave the profession and the organisation. This result coincides with earlier studies in other sectors, in which workers who demonstrated high fear or anxiety found job-related events more stressful, affecting their overall performance and work satisfaction (McCarthy, Trougakos & Cheng, 2016; Jones, Latreille & Sloane, 2016). By addressing fear of coronavirus among nurses, nurse outcomes will be improved, with increased job satisfaction, decreased psychological distress and lower turnover intention.

Study Limitations

Despite the promising results generated from this study, caution should be maintained when interpreting and generalising study findings in light of the limitations identified. First, this study was conducted within one province of the country; the exclusion of nurses from other provinces may affect the generalisability of the findings. Next, the research design used could be a limitation; a cross-sectional study design cannot establish a causal link between variables under investigation. While this study found significant associations between a few nurse variables and their rating on the Fear of COVID–19 Scale, other factors such as work environment, staffing adequacy, hospital management and leadership, personal nurse competency, hospital resources, and patient volume and acuity may also play important roles in explaining their fear of the disease. Therefore, it is

recommended that future studies explore other personal and organisational variables that may induce and intensify nurses' fear of COVID-19.

Implications for Nursing Management

The findings of the study highlight the vital role of hospital and nurse administrators in supporting nurses during the pandemic through evidence-based education, training or interventions, and policy. As nonattendance of COVID-19 training was linked with increased fear of coronavirus, it is imperative that hospitals formulate or develop COVID-19 training plans to improve the capacity of nurses to effectively care for and manage coronavirus patients. This can be facilitated by using alternative platforms such as webinars, social media platforms or other video technologies in order to maintain social distancing. As job role predicted fear of COVID-19, with part-time nurses reporting increased fear of the disease, the provision of adequate peer and organisational support is vital to enhance this group of nurses' preparedness for and familiarity with the care of coronavirus patients and ward or organisational processes related to COVID-19. A buddy system where a part-time nurse is paired with a more seasoned colleague can help support part-time nurses during the pandemic crisis (Maunder *et al.*, 2006).

As excessive fear may intensify pre-existing mental health issues or provoke anxiety (Colizzi *et al.*, 2020) and eventually affect nurses' health and job outcomes (e.g., job satisfaction, turnover intention), supporting the mental, psychological and emotional health of nurses should be prioritised by nursing and hospital administrators. These measures may ultimately improve work satisfaction, enhance perceived health, reduce psychological distress and decrease turnover intention among frontline nurses. This can be accomplished by implementing measures to preserve and maintain the mental health of nurses. Mental health professionals during pandemic situations are instrumental in effectively supporting the mental health of frontline nurses.

Psychotherapy and psychological treatment may provide nurses with appropriate support (Sucala *et al.*, 2012). Due to certain limitations regarding access to in-person mental health services, a novel approach such as telepsychiatry could provide psychotherapeutic management or interventions (Canady, 2020). Further, the provision of psychological materials (e.g., books, journals on mental health), psychological resources and counselling or psychotherapy (Kang *et al.*, 2020) may improve frontline nurses' mental health during COVID-19. Nursing staff should be oriented on how and where to access these psychosocial and mental health services, and access to these services should be facilitated.

Ensuring that nurses are always kept updated with the latest and most accurate information related to coronavirus reduces the fear and negative emotions associated with the disease. This information should include the nature of the causative virus, precautions to prevent transmission of the virus to the self and others, how to effectively use hospital resources and new trends in the management of coronavirus patients. Equally important is ensuring that the members of the nursing team are given the same information related to the disease, as well as the hospital protocols when handling or managing patients afflicted with the diseases. Frontline nurses should be provided with adequate break time to allow them to take care of themselves. Collectively, these measures could curtail the negative impacts of this crisis and reduce fear among nurses.

Support from peers, colleagues, families and friends may improve the sense of safety and help alleviate fear in nurses. Sharing their work experiences with others may be helpful in attaining adequate psychological or other

support and improving their morale amid the pandemic (Maben & Bridges, 2020). Support from top management through the provision of a safe work environment, adequate PPE and other infection control supplies is vital to support nurses in their daily practices. Further, professional nursing organisations should provide COVID–19-related resources to nurses, including information on mental and psychological well-being, and the provision of resilience, coping and stress management programmes.

Conclusion

Consistent with prior evidence involving the general population, our results suggest that Filipino frontline nurses experience mild to moderate levels of fear of COVID–19. Job status and attendance of COVID–19 training were seen to explain the fear of COVID–19 among frontline nurses, with part-time or contracted nurses and those who had not attended such training reporting increased levels of fear of COVID–19. Further, higher levels of fear of COVID–19 were associated with increased psychological distress, lower job satisfaction, decreased health perceptions and increased turnover intention. Understanding the factors that contribute to the fear of COVID–19 and its effects on nurse work outcomes is critical when designing and implementing measures to address nurses' needs and concerns.

References

1. Alharbi, J., Jackson, D., & Usher, K. (2020). The potential for COVID-19 to contribute to compassion fatigue in critical care nurses. *Journal of Clinical Nursing*, Advanced Online Publication. <https://doi.org/10.1111/jocn.15314>
2. Ahorsu, D. K., Lin, C. Y., Imani, V., Saffari, M., Griffiths, M. D., & Pakpour, A. H. (2020). The fear of COVID-19 scale: development and initial validation. *International Journal of Mental Health and Addiction*, Advanced Online Publication. <https://doi.org/10.1007/s11469-020-00270-8>
3. Al Khalaileh, M. A., Bond, E., & Alasad, J. A. (2012). Jordanian nurses' perceptions of their preparedness for disaster management. *International Emergency Nursing*, 20(1), 14-23.
4. Bakioğlu, F., Korkmaz, O., & Ercan, H. (2020). Fear of COVID-19 and Positivity: Mediating Role of Intolerance of Uncertainty, Depression, Anxiety, and Stress. *International Journal of Mental Health and Addiction*, Advanced Online Publication. <https://doi.org/10.1007/s11469-020-00331-y>
5. Ben Natan, M., Nigel, S., Yevdayev, I., Qadan, M., & Dudkiewicz, M. (2014). Nurse willingness to report for work in the event of an earthquake in Israel. *Journal of Nursing Management*, 22(7), 931-939.
6. Canady, V. A. (2020). COVID-19 outbreak represents a new way of mental health service delivery. *Mental Health Weekly*, 30(12), 1-4.
7. Catton, H., RN, MA, BS (Econ) (Hons). (2020). Global challenges in health and health care for nurses and midwives everywhere. *International Nursing Review*, 67(1), 4– 6.
8. Colizzi, M., Bortoletto, R., Silvestri, M., Mondini, F., Puttini, E., Cainelli, C., ... & Zoccante, L. (2020). Medically unexplained symptoms in the times of Covid-19 pandemic: a case-report. *Brain, Behavior, & Immunity-Health*, Advanced Online Publication. <https://doi.org/10.1016/j.bbih.2020.100073>
9. Department of health (2020). UPDATES ON NOVEL CORONAVIRUS DISEASE (COVID-19) Retrieved from: <https://www.doh.gov.ph/2019-nCoV>

10. Ehrlich, H., McKenney, M., & Elkbuli, A. (2020). Protecting our healthcare workers during the COVID-19 pandemic. *The American Journal of Emergency Medicine*, Advanced Online Publication. <https://doi.org/10.1016/j.ajem.2020.04.024>
11. Hirshouer, M., Edmonson, J. C., & Hatchel, K. K. (2020). Hospital Preparedness. In *Nursing Management of Pediatric Disaster*(pp. 301-314). Springer, Cham.
12. House, R.J.& Rizzo, J.R. (1972) Role conflict and ambiguity as critical variables in a model of organizational behavior. *Organizational Behavior and Human Performance*, 7, 467– 505.
13. Gorman, J. M. (Ed.). (2008). *Fear and anxiety: The benefits of translational research*. American Psychiatric Pub.
14. Gross, C. T., & Canteras, N. S. (2012). The many paths to fear. *Nature Reviews Neuroscience*, 13(9), 651-658.
15. Gritsenko, V., Skugarevsky, O., Konstantinov, V., Khamenka, N., Marinova, T., Reznik, A., & Isralowitz, R. (2020). COVID 19 Fear, Stress, Anxiety, and Substance Use Among Russian and Belarusian University Students. *International Journal of Mental Health and Addiction*, Advanced Online Publication. <https://doi.org/10.1007/s11469-020-00330-z>
16. Jones, M. K., Latreille, P. L., & Sloane, P. J. (2016). Job Anxiety, Work-Related Psychological Illness and Workplace Performance. *British Journal of Industrial Relations*, 54(4), 742-767.
17. Kameg, B. N. (2020). Psychiatric-Mental Health Nursing Leadership During Coronavirus Disease 2019 (COVID-19). *Journal of Psychiatric and Mental Health Nursing*, Advanced Online Publication. <https://doi.org/10.1111/JPM.12662>
18. Kang, L., Ma, S., Chen, M., Yang, J., Wang, Y., Li, R., ... & Hu, S. (2020). Impact on mental health and perceptions of psychological care among medical and nursing staff in Wuhan during the 2019 novel coronavirus disease outbreak: A cross-sectional study. *Brain, Behavior, and Immunity*, Advanced Online Publication. <https://doi.org/10.1016/j.bbi.2020.03.028>
19. Labrague, L. J., Hammad, K., Gloe, D. S., McEnroe-Petitte, D. M., Fronda, D. C., Obeidat, A. A., ... & Mirafuentes, E. C. (2018). Disaster preparedness among nurses: a systematic review of literature. *International Nursing Review*, 65(1), 41-53.
20. Labrague, L. J., Yboa, B. C., McEnroe–Petitte, D. M., Lobrino, L. R., & Brennan, M. G. B. (2016). Disaster preparedness in Philippine nurses. *Journal of Nursing Scholarship*, 48(1), 98-105.
21. Maben, J., & Bridges, J. (2020). Covid-19: Supporting nurses' psychological and mental health. *Journal of Clinical Nursing*, Advanced Online Publication. <https://doi.org/10.1111/jocn.15307>
22. Maunder, R., Lancee, W., Balderson, K., Bennett, J., Borgundvaag, B., Evans, S., ... Wasylenki, D. (2006). Long-term psychological and occupational effects of providing hospital healthcare during SARS outbreak. *Emerging Infectious Diseases*, 12(12), 1924– 1932.
23. Masuyama, A., & Shinkawa, H. (2020). Development and validation of the Japanese version Fear of COVID-19 Scale among adolescents. *PsyArXiv*. Advanced Online Publication. <https://doi.org/10.31234/osf.io/jkmut>
24. McCarthy, J. M., Trougakos, J. P., & Cheng, B. H. (2016). Are anxious workers less productive workers? It depends on the quality of social exchange. *Journal of Applied Psychology*, 101(2), 279-291.
25. Mo, Y., Deng, L., Zhang, L., Lang, Q., Liao, C., Wang, N., ... & Huang, H. (2020). Work stress among Chinese nurses to support Wuhan in fighting against COVID-19 epidemic. *Journal of Nursing Management*. Advanced Online Publication. <https://doi.org/10.1111/jonm.13014>

26. Nemati, M., Ebrahimi, B., & Nemati, F. (2020). Assessment of Iranian nurses' knowledge and anxiety toward COVID-19 during the current outbreak in Iran. *Archives of Clinical Infectious Diseases*, 15(COVID-19). Advanced Online Publication. <http://dx.doi.org/10.5812/archcid.102848>
27. Pappa, S., Ntella, V., Giannakas, T., Giannakoulis, V. G., Papoutsis, E., & Katsaounou, P. (2020). Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. *Brain, Behavior, and Immunity*. Advanced Online Publication. <https://doi.org/10.1016/j.bbi.2020.05.026>
28. Reznik, A., Gritsenko, V., Konstantinov, V., Khamenka, N., & Isralowitz, R. (2020). COVID-19 fear in Eastern Europe: Validation of the Fear of COVID-19 Scale. *International Journal of Mental Health and Addiction*, Advanced Online Publication. <https://doi.org/10.1007/s11469-020-00283-3>
29. Satici, B., Gocet-Tekin, E., Deniz, M. E., & Satici, S. A. (2020). Adaptation of the Fear of COVID-19 Scale: Its association with psychological distress and life satisfaction in Turkey. *International Journal of Mental Health and Addiction*, Advanced Online Publication. <https://doi.org/10.1007/s11469-020-00294-0>
30. Schriesheim, C. & Tsui, A.S. (1980) Development and Validation of Short Satisfaction Instrument for Use in Survey Feedback Interventions, Paper Presented at the Western Academy of Management Meeting, Phoenix, AZ.
31. Soper DS. (2015). A-priori sample size calculator for multiple regression. Retrieved from <http://www.danielsoper.com/statcalc/calculator.aspx?id=1>.
32. Socala, M., Schnur, J. B., Constantino, M. J., Miller, S. J., Brackman, E. H., & Montgomery, G. H. (2012). The therapeutic relationship in e-therapy for mental health: a systematic review. *Journal of Medical Internet Research*, 14(4), e110.
33. World Health Organization(2020, March20). *Coronavirus disease 2019 (COVID-19) situation report-60*[EB/OL]. Retrieved from <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports>
34. Wu, Y., Wang, J., Luo, C., Hu, S., Lin, X., Anderson, A. E., ... & Qian, Y. (2020). A comparison of burnout frequency among oncology physicians and nurses working on the front lines and usual wards during the COVID-19 epidemic in Wuhan, China. *Journal of Pain and Symptom Management*. Advanced Online Publication. <https://doi.org/10.1016/j.jpainsymman.2020.04.008>

Declarations

The authors declare the following competing interests

Tables

Table 1. Staff, unit, and hospital characteristics (n = 261)

Characteristics	Categories	Mean	SD
Age		30.95	6.14
Year in Nursing Profession		8.32	6.39
Year in Present Organization		4.73	4.51
		N	%
Gender	Male	69	26.4
	Female	192	73.6
Marital status	Married	94	36.0
	Unmarried	167	64.0
Education	BSN	215	82.4
	MA/MS	43	16.5
	PhD/DNP/DScN	3	1.1
Job role	Staff Nurses	199	76.2
	Nurse Managers	62	23.8
Job status	Fulltime	202	77.39
	Part-time	59	22.61
Hospital facility size	<100 beds	103	39.4
	101-250 beds	84	32.2
	>250 beds	74	28.4
Attendance to COVID-19 trainings	Yes	106	40.6
	No	155	59.4
Awareness of existing protocol related to COVID-19	Yes	250	95.8
	No	11	4.2

Table 2. Descriptive statistics of the key study variables

Scale/Subscale	N	Min	Max	Mean	SD
Fear COVID-19	261	1.00	5.00	19.92	6.15
Job Satisfaction	261	1.00	5.00	3.65	0.99
Psychological Distress	261	1.00	5.00	3.09	0.96
Organizational turnover intention	261	1.00	5.00	1.86	1.26
Professional turnover intention	261	1.00	5.00	2.23	1.26

Table 3. Correlations between key study variables

Characteristics	Categories	Mean	SD	Test Statistics	P value
Gender [‡]	Male	2.760	0.920	-0.906	0.367
	Female	2.875	0.864		
Marital status [‡]	Married	2.938	0.963	1.232	0.220
	Unmarried	2.792	0.826		
Education [§]	BSN	2.817	0.892	1.021	0.362
	MA/MS	2.940	0.828		
	PhD/DNP/DScN	3.429	0.378		
Job role [‡]	Staff Nurses	2.879	0.908	1.125	0.262
	Nurse Managers	2.735	0.774		
Job status [‡]	Fulltime	2.813	0.883	-2.492	0.013
	Part-time	3.408	0.585		
Hospital facility size [§]	<100 beds	2.678	0.844	2.204	0.088
	101-250 beds	2.830	0.857		
	>250 beds	3.046	0.876		
Attendance to COVID-19 trainings [‡]	Yes	2.691	0.883	-2.349	0.020
	No	2.949	0.863		
Awareness of existing protocol related to COVID-19 [‡]	Yes	2.824	0.883	-1.809	0.072
	No	3.312	0.629		
Age [†]				0.065	0.298
Year in Nursing Profession [†]				0.078	0.211
Year in Present Organization [†]				0.054	0.383
Job Satisfaction				-0.155	0.012
Psychological Distress [†]				0.468	0.001
Organizational turnover intention [†]				0.295	0.001
Professional turnover intention [†]				0.188	0.002

[†]Pearson r correlation

[‡]t-test for independent group

- Analysis of Variance

Table 4. Influence of Fear of COVID-19 on nurse’s job satisfaction, psychological distress, organizational turnover intention, and professional turnover intention

Patient Outcomes	Fear of COVID-19									
	Model 1					Model 2				
	B	SE	β	t	CI	B	SE	β	t	CI
Job Satisfaction	-0.176	0.070	-0.155	-2.520	-0.313 to -0.038	-0.187	0.072	-0.165	-2.598	-0.329 to -0.045
Psychological Distress	0.511	0.060	0.468	8.532	0.393 to 0.629	0.506	0.063	0.464	8.102	0.383 to 0.630
Organizational turnover intention	0.423	0.085	0.295	4.963	0.255 to 0.591	0.428	0.088	0.298	4.873	0.255 to 0.601
Professional turnover intention	0.271	0.088	0.188	3.089	0.098 to 0.443	0.314	0.091	0.219	3.466	0.135 to 0.492

Note:

Model 1 = Not controlling for nurse/unit/hospital characteristics

Model 2 = Controlling for nurse/unit/hospital characteristics (age, year in nursing, year in the organization, marital status, education, job role, facility size, hospital type)

β , Standardized Regression Coefficient; SE, Standard Error; CI, Confidence Interval

- Composite score

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$