



ORIGINAL REPORT

Missed nursing care in the COVID-19 pandemic in Iran

Zeinab Hosseini MSc¹ | Leila Raisi Phd^{2,3} | Amir Hossein Maghari MSc^{2,4}  |
Mansoureh Karimollahi Phd¹ 

¹Department of Nursing, Faculty of Nursing and Midwifery, Ardabil University of Medical Sciences, Ardabil, Iran

²Department of Family Health, Social Determinants of Health Research Center (SDHRC), Ardabil University of Medical Sciences, Ardabil, Iran

³Department of Midwifery, School of Nursing and Midwifery, Ardabil University of Medical Science, Ardabil, Iran

⁴Atherosclerosis Research Center, Baqiatallah University of Medical Sciences, Tehran, Iran

Correspondence

Mansoureh Karimollahi, Department of Nursing, Faculty of Nursing and midwifery, Ardabil University of Medical Sciences, Ardabil, Iran.

Email: karimollahi@gmail.com

Abstract

Background: Quality of care is one of the most critical issues in nursing care today. Moreover, all health care employees are responsible for providing support and high-quality, safe care. However, nurses caring for COVID-19 patients face problems such as unfamiliar work environments, exposure to the disease, lack of experience in their new positions, and close public and media attention. This study aimed to investigate missed nursing care and the reasons for missed nursing care during the coronavirus disease 2019 (COVID-19) pandemic in Iran.

Methods: This cross-sectional study included 135 nurses working in COVID-19 units. Data were collected using the MISSCARE Survey. The significance level for the statistical tests was set at $p < 0.05$.

Results: Most of the participants were women and had a bachelor's degree in nursing. There was a lack of supportive and necessary care more than any other form of care. According to nurses, the most common reasons for missed care were urgent patient situations, inadequate staff, and an unexpected rise in patient volume and/or patient acuity on the unit.

Conclusion: Generally, the results showed that being positioned in a new situation and unfamiliarity with the disease had a significant impact—among nurses—on the amount of care provided. Managers can use this information to solve existing missed-nursing-care problems and contribute to improving the quality of care.

These results can be helpful in controlling missed nursing care and finding a more optimal solution for this problem; thus, we can improve the quality of care delivery and increase the satisfaction of nurses and patients. Additionally, an understanding of the kind of missing nursing care during a pandemic can positively enhance the management of similar situations in the future.

KEYWORDS

missed nursing care, COVID-19, novel coronavirus, caring, MISSCARE Survey, Iran

BACKGROUND

Quality of care is one of the most critical issues in nursing care today. Moreover, all health care employees are responsible for providing support and high-quality, safe care (Barton, 2008). In December 2019, cases of severe respiratory illnesses were reported in Wuhan, Hubei

Province, China. On December 31, China warned the World Health Organization (WHO) of several unusual cases of pneumonia caused by an unknown virus. The disease was initially known as the new coronavirus 2019. However, its official name was later changed to coronavirus disease 2019 (COVID-19) (Wang et al., 2020). In March 2020, WHO declared COVID-19 an epidemic (Sheng, 2020). The

virus is transmitted through human-to-human contact. Furthermore, almost everyone is susceptible to COVID-19 (the People's Republic of China WHO, 2020). Approximately one in five people with COVID-19 becomes seriously ill and develop difficulty in breathing (World Health Organization, 2020). During the COVID-19 epidemic, there was a significant increase in the number of patients admitted to hospitals. This critical situation poses many challenges for hospital managers and nurses in providing care (de Andrés-Gimeno et al., 2021). In this situation, medical institutions, especially hospitals, have raised their readiness to admit COVID-19 patients who need hospitalization (Daily, 2020). Nurses are important members of medical and health care institutions. Nurses' working hours per shift play a vital role in their physical and mental health as well as the effects of epidemic response (Lam et al., 2019). Previous related studies show that the working hours of nurses can affect quality of care (Griffiths et al., 2014). In contrast, nurses caring for COVID-19 patients face problems such as unfamiliar work environments, exposure to the disease, lack of experience in their new positions, and close public and media attention (Peter & Liaschenko, 2013). These issues, which subject nurses to severe challenges and stress, are further exacerbated by the increasing volume of patients and the complexity of patient care; consequently, providing the necessary care for patients is made almost impossible for nurses (Park et al., 2012; Unruh & Fottler, 2006). In such situations, nurses could eliminate, reduce, and delay a series of care tasks, resulting in missed nursing care.

Missed nursing care refers to any aspect of care that is completely or partially eliminated or delayed (Kalisch et al., 2009). Related studies show that missed nursing care can cause many complications for patients, such as extended hospital stay, increased incidence of infection, increased medication errors, pneumonia, delayed discharge, and increased patient dissatisfaction (Kalisch & Xie, 2014; Lucero et al., 2010; Schubert et al., 2008). It also causes many problems for nurses and hospitals, such as professional dissatisfaction and job resignations among nurses. Consequently, hospitals experience a shortage of nursing staff and increased expenditure on hiring new staff (Bowles & Candela, 2005). Given the importance of nursing care to ensure COVID-19 patients' quick recovery, reduce anxiety, and mitigate the side effects of the disease (Cao & WM, 2020; Muller et al., 2020; Xu et al., 2020; Yang et al., 2020), missed nursing care is a critical issue. Therefore, to reduce the side effects of the disease and help nursing managers ascertain the reasons for missed nursing care, eliminate it, and provide better and safer treatment, this study investigates, and ascertains the reasons for missed nursing care in the COVID-19 pandemic era in Iran.

METHOD

Design

This was a cross-sectional study (descriptive analysis) conducted in the summer of 2020. The target population comprised nurses working different shifts in COVID-19 units at educational hospitals. The

inclusion criteria included all nurses who had at least 6 months of clinical experience and a bachelor's degree in nursing. Lack of cooperation, or unwillingness to participate in the study, and mental illnesses (such as depression) were defined as the exclusion criteria. According to the inclusion and exclusion criteria, 135 nurses willing to participate in the study were chosen using the consensus sampling method.

Method

A two-part questionnaire was used to collect data. The first section was related to nurses' demographic information, which included the location of work, age, gender, education, and work experience in the ward, number of working hours per week, number of shift hours per week, and the number of shifts/days missed in the last 3 months. Additionally, the nurses were asked the following five questions: whether they intended to leave their current positions, whether they considered their current unit well-staffed, their level of satisfaction with the current position, their thoughts on nursing, and the level of satisfaction with teamwork in the COVID-19 unit. The second section addressed missed nursing care and the reasons for missing nursing care (Kalisch & Williams, 2009), which included two subsections. The first section focused on missed nursing care, which included 24 questions rated on a five-point Likert scale ("5 = always missed" to "1 = never missed"), and three factors: necessary care (13 questions), supportive care (five questions), and secondary care (six questions). This questionnaire was originally in English. Therefore, we translated it into Persian. The details of psychometric adaptation have been published elsewhere (Hosseini et al., 2022).

Analysis

All statistical tables were prepared as numerical (percentage) and mean (standard deviation). Parametric tests, including the independent samples t-test and one-way analysis of variance along with the Tukey post-hoc test were used owing to the normality of quantitative data distribution, which was evaluated using the Kolmogorov-Smirnov test. The Friedman test ranking method was used to prioritize the questionnaire factors in this study. All the tables and statistical analyses were performed using SPSS software version 21. The level of significance was set at 0.05.

RESULTS

The study involved 135 COVID-19 unit nurses, out of which 80.7% were female and 19.3% were male. The majority (45.2%) of the participants were 25–34 years old, while the rest were 35–44 years old. The majority (97.8%) of the participants had a bachelor's degree, 57.0% had 2–5 years of work experience, 19.3% had more than 5 years of work experience, and 23.7% had less than 2 years of work experience. The majority (93.3%) of nurses worked more than 30 hours per week,

TABLE 1 Summary of information about the MISSCARE Survey

Missed nursing care	Never	Rarely	Occasionally	Frequently	Always	Mean	Standard deviation	Median
Patient teaching about illness, tests, and diagnostic studies	14.1%	36.3%	49%	36.3%	0.0%	2.39	0.77	2.0
Emotional support to patient and/or family	7.4%	31.9%	44.4%	15.6%	0.7%	2.70	0.85	3.0
Feeding patient when the food is still warm	14.1%	29.6%	42.2%	29.6%	9.6%	2.61	0.99	3.0
Hand washing	80.7%	13.3%	5.2%	0.7%	0.0%	1.26	0.59	1.0
Full documentation of all necessary data	60.7%	24.4%	11.9%	2.2%	0.7%	1.58	0.84	1.0
Monitoring intake/output	57.0%	32.6%	9.6%	0.7%	0.0%	1.54	0.70	1.0

50.4% worked 8- or 12-h work shifts, and 30.4% worked 8-h shifts, of which 45.2% missed at least one or more shifts/days in the last 3 months. Moreover, among the nurses, 71.8% intended to quit their current positions in the COVID-19 unit, and 80.8% believed that the staff in the units was insufficient. This study shows that 51.9% of the nurses were dissatisfied or very dissatisfied with their current positions and that 56.3% of the nurses were dissatisfied or very dissatisfied with the teamwork in the unit.

This study shows that the type of shift of nurses was significantly associated with missed nursing care ($p < 0.05$) ($p = 0.001$); therefore, the mean total score of the MISSCARE Survey in 12-h shifts was higher than that in other shifts. Among the missed care factors, only the necessary care factor had a significant relationship with the work hours of the nurses ($p < 0.05$). Eight-hour and 12-h rotation shifts showed the highest rate of missed necessary care; the 7-h shifts showed the lowest rate of missed nursing care. Moreover, there was no significant difference between the other shifts. Considering the total score of the questionnaire, the reasons for missed care—human resources ($p = 0.001$), communication ($p = 0.001$), responsibility ($p = 0.005$), and unpredictable situations ($p = 0.015$)—were significantly related to the nurses' work shifts. According to the nurses who participated in this study, in the 8- and 12-h rotating shifts, the highest rate of missed care was related to human resources, communication, and unpredictable situations. In the 10-h shifts, the highest rate of missed care was related to responsibility. This study also showed that nurses' work records were significantly related with the factors of necessary care ($p = 0.045$) and secondary care ($p = 0.024$). The highest rate of missed necessary and secondary care was observed among those who had more than 10 years of work experience. However, this differed significantly from those who had less than 10 years of work experience. The results show that the nurses who had more than 10 years of work experience performed better than those who had less than 10 years of experience.

This study shows that the gender of the nurses was significantly related to missed nursing care ($p = 0.002$). Necessary care ($p = 0.001$) and secondary care ($p = 0.039$) were also significantly correlated with the nurses' gender. The results also showed that necessary and secondary care were missed significantly lesser among male than female nurses. Human resources ($p = 0.004$) and communication ($p = 0.001$) between male and female nurses differed significantly. The rate

of missed care related to human resources and communication was significantly higher among female than male nurses.

The results of this study show that "vital signs assessed as ordered," "monitoring intake/output," "full documentation of all necessary data," "handwashing," and "bedside glucose monitoring as ordered" were missed less significantly than others. Furthermore, "patient teaching about illness, tests, and diagnostic studies," "emotional support to the patient and/or their family," and "feeding the patient when the food is still warm" were frequently missed (Table 1). In the study, "the inadequate number of staff," "unbalanced patient assignments," and "urgent patient situations (e.g., a patient's condition worsening)" were the most significant reasons for missed nursing care. Additionally, "medications were not available when needed," "supplies/ equipment were not available when needed," "supplies/equipment not functioning properly when needed," "other departments did not provide the care needed (e.g., physical therapy did not ambulate)," and "nursing assistant did not communicate that care was not provided" were the less significant reasons for missed nursing care (Table 2).

This study also demonstrated that among the indicators of missed nursing care, necessary care had the highest priority, while supportive care had the lowest priority. Among the reasons for missed nursing care, unpredictable situations had the highest priority, while material resources had the lowest priority, from the perspective of nurses working in the COVID-19 unit (Table 3).

DISCUSSION

This study investigates the amount of missed nursing care for COVID-19 patients and the reasons for missed nursing care. According to the results, an increasing number of patients, inadequate staffing, longer working hours, and being in a new position subjected nurses to several challenges—professional dissatisfaction, intention to resign from their current positions, and missed care—which significantly and adversely impact the health of both patients and nurses. Tolerating high levels of chronic stress and being in an unfamiliar environment disrupts the nursing care process and could negatively affect the attitude of nurses toward their work (Barling et al., 2005). These issues are possible reasons for the lack of supportive and secondary care reported in this study. Nursing staff may provide necessary care for patients due to the

TABLE 2 Summary of information about the MISSCARE Survey

Reasons for missed care	No reason for missed care	Minor reason	Moderate reason	Significant reason	Mean	Standard deviation	Median
Inadequate number of staff	0.0%	0.7%	14.1%	85.2%	3.8	0.4	4
Urgent patient situations (e.g., a patient's condition worsening)	0.7%	1.5%	23.0%	74.8%	3.7	0.5	4
Unbalanced patient assignments	3.0%	3.7%	27.4%	65.9%	3.6	0.7	4
Supplies/equipment not available when needed	9.6%	42.2%	32.6%	15.6%	2.5	0.9	2
Nursing assistant did not communicate that care was not provided	21.5%	40.7%	33.3%	4.4%	2.2	0.8	2
Supplies/equipment not functioning properly when needed	11.9%	40.0%	36.6%	11.9%	2.5	0.9	2

TABLE 3 Prioritization of missed care factors and reasons for missed care

Questionnaire	Structures of questionnaire	Rating mean	Priority	Significance <i>p</i>
Section A—Missed nursing care	Necessary care	3	1	0.001
	Secondary care	1.84	2	
	Supportive care	1.16	3	
Section B—The reasons for missed nursing care	Unpredictable situations	3.64	1	0.001
	Communicational	3.43	2	
	Human resources	3.37	3	
	Responsibility	3	4	
	Material resources	1.57	5	

1. Friedman test

fear of the virus, exposure to new environments, long hours of wearing protective clothing, and simultaneous care of a large number of patients, and consequently, they may neglect other forms of care.

Insufficient staff was the main reported reason for missed care in the COVID-19 unit in this study, which is entirely consistent with the results of a study conducted by Lam et al. (2019). They stated that the lack of human resources was one of the main factors preventing nurses from responding appropriately during the epidemic (Lam et al., 2019). Therefore, missed nursing care owing to lack of staffing and insufficient time to provide all the necessary care is entirely predictable.

Bae and Fabry (2014) found that the rate of nursing errors increases as their shift hours increase. Another COVID-19-related study conducted by Xu et al. (2020) showed that stress and dissatisfaction among nurses—during the COVID-19 epidemic—increased with an increase in working hours, which affected the nurses' health and further altered the quality of care (Xu et al., 2020). This study also states that in 12-h rotating shifts, the rate of the loss of necessary care was higher than that in 10-h shifts and less.

One of the most critical form of care for COVID-19 patients with diabetes is bedside blood sugar measurement (Wallia et al., 2020). The results of our study also showed that among the forms of care, mandated bedside glucose monitoring had the least missed rate, which

showed nurses' awareness of the importance of this issue. Reducing the time spent at the patient's bedside and reducing the time of face-to-face care among COVID-19 patients are one of the basic principles to minimize the spread of infection; these are possible reasons for missed secondary and supportive care.

The amount of necessary and secondary care missed among male nurses was lower than that missed among female nurses. A study conducted by Çelmeçe and Menekay stated that female nurses had higher stress levels than male nurses as the former had more responsibilities outside their workplaces, thereby exacerbating the stress at work (AğElmeşe & Menekay, 2020). Therefore, the higher rate of missed nursing care among female nurses could result from greater stress outside of work. This study further shows that supportive care had the lowest miss rate. However, the emotional support of the patient and their family had the highest rate, as confirmed by previous studies (Muller et al., 2020). Some authors also argued that nurses devoted the time that should be devoted to emotional support to other essential and prioritized forms of care due to their excessive workload.

In this study, the least missed care was handwashing, which, in pre-COVID-19 studies, was not so; this could be attributed to better observance of protocols and greater sensitivity, among nurses, to hygiene and preventing infection and virus transmission. In previous

studies, elements such as the full documentation of all necessary data, patient assessments performed during each shift, and mandated bedside glucose monitoring were lesser missed care, which is consistent with our study (Griffiths et al., 2014; Kalisch & Lee, 2012; Kalisch & Williams, 2009; Kalisch & Xie, 2014; Siqueira et al., 2017). Some related studies suggested that the rate of missed care depends on the individual characteristics of nurses, such as education and work experience (Carter, 2014; Kalisch & Xie, 2014; Kalisch et al., 2011), which was also ascertained in this study. As mentioned before, the amount of missed nursing care was higher among nurses with more than 10 years of work experience than among other nurses. We also noted that nurses with more work experience performed better in unpredictable situations than those with less work experience.

The most important factors for missed care were unpredictable situations, human resources, communication, responsibilities, and material resources. This finding is supported by previous studies that consider human resources the main reason and material resources the least significant reason for missed care (Kalisch & Williams, 2009; Kalisch & Xie, 2014; Siqueira et al., 2017). Material resources were considered one of the least significant reasons for missed care; this can be attributed to the special circumstances of the COVID-19 pandemic, which stimulated the efforts of hospital managers to protect their staff and to reduce disease transmission. The study's limitations were the low number of nurses in COVID-19 units and the lack of cooperation among the staff due to the high workload.

CONCLUSION

In general, the results showed that nurses' position in a new situation and unfamiliarity with the disease had a significant impact on the amount of care provided. Managers can use this information to solve problems and help improve the quality of care. It could also be noted that in Iranian hospitals, the patient's companions perform much secondary and supportive care and the unavailability of companions in the COVID-19 units could be a reason for the missed care. Therefore, by considering and applying the results of this study, the existing problems can be solved, and more quality and safer care can be provided to patients. These results can be helpful in some domains, such as controlling missed care and finding a better solution; then, we can improve the quality of care and increase the satisfaction of nurses and patients.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Mansoureh Karimollahi and Zeinab Hosseini conceptualized the study. Mansoureh Karimollahi and Zeinab Hosseini coordinated the project. Zeinab Hosseini and Amir Hossein Maghari completed data entry and analysis. Zeinab Hosseini wrote the paper, and all authors approved the final manuscript.

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None.

ETHICS STATEMENT

Ethics committee of Ardabil University of Medical Sciences (code of ethics IR.ARUMS.REC.1398.307) approved the research.

ORCID

Amir Hossein Maghari MSc  <https://orcid.org/0000-0003-0449-4805>

Mansoureh Karimollahi PhD  <https://orcid.org/0000-0002-4257-2088>

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