Missed Nursing Care in COVID-19 Patients in Iran

Zeinab Hosseini

Ardabil University of Medical Sciences

Leila Reisi

Ardabil University of Medical Sciences

Amir Hossein Maghari

Ardabil University of Medical Sciences

Mansoureh Karimollahi (✉ karimollahi@gmail.com)

Ardabil University of Medical Sciences

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Abstract

Objectives

Nursing care is one of the most important tasks of nursing. Providing safe and high-quality nursing care will improve the patient as soon as possible and reduces the complications of the disease. Due to the corona epidemic in the last year, nurses cannot provide all the necessary care for patients; a series of care is eliminated or delayed or reduced, which is called missed nursing care. So, this study aimed to investigate the missed nursing care and the reasons affecting it in the corona wards in Ardabil.

Study design

The research is conducted in a cross-sectional manner. The research included 135 nurses who worked in Ardabil's corona wards.

Data collection/extraction methods

The Missed Nursing Care Questionnaire, was used to collect data. The significance level of statistical tests set at 0.05.

Principal findings

Most of whom were women, 135 nurses participated in the study and had a bachelor's degree in nursing. Supportive and necessary care is missed more than other care; According to nurses, the most common reasons for the missed care were emergencies, low staffing, and an increase in the number of patients.

Conclusions

As a result of the findings, being in a fresh and uncertain situation, as well as an increase in the number of patients, has resulted in a loss of nursing care. By controlling these factors, the missed care in the ward can be controlled, and increase the satisfaction of patients and nurses.

Highlights

What is known on this topic:

- Quality of care is one of the most important issues in nursing care today and all employees of the health system are responsible for high quality and safe care and support.
- Nurses caring for COVID-19 patients, face problems such as unfamiliar work environments, exposure to disease, and lack of experience in their new position, and close public and media attention.
- Missed nursing care can cause many complications for the patients, such as increased length of hospital stay, increased incidence of infection, increased medication errors, pneumonia, delayed discharge, and increased patient dissatisfaction.

What This study Adds:

- The results of this study, which was performed in the Covid -19 patients in Iran showed that, the necessary care are never missed.
- The results of this study also showed that among the indicators of missed nursing care, necessary care has the highest priority and supportive care has the lowest priority.
- Among the reasons for the missed nursing care, unpredictable situations have the highest priority and material resources have the lowest priority from the perspective of nurses participating in the corona ward.

Introduction

Quality of care is one of the most important issues in nursing care today and all employees of the health system are responsible for high quality and safe care and support¹. In December 2019, reports of a dangerous respiratory illness were identified in Wuhan City, 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, but its official name was later changed to COVID-19². In March 2020, the World Health Organization declared COVID-19 an epidemic³. The virus can be transmitted from human to human⁴ and almost everyone is susceptible to COVID-19⁵. About one in five people with COVID-19 becomes seriously ill and has difficulty breathing⁶. During the corona epidemic, there was a significant increase in the number of patients admitted to hospitals, which is increasing. This critical situation has posed many challenges for hospital managers and nurses in providing care⁷. In this situation, medical institutions, especially hospitals, increased their readiness to increase the admission of patients with COVID-19 who need to be hospitalized⁸. Working hours per shift among nurses, who serve as important members of medical and health care institutions, play a key role in the effects of epidemic response and nurses' physical and mental health⁹. Previous studies have shown that nurses' working hours can affect the quality of care¹⁰. Nurses caring for COVID-19 patients, on the other hand, face problems such as unfamiliar work environments, exposure to disease, lack of experience in their new position, and close public and media attention¹¹. These issues can confront nurses with severe challenges and stress¹². All of these, as well as the increasing volume of patients and the complexity of patient care, make it impossible for nurses to provide all the necessary care for patients^{13,14}. In these situations, nurses prioritize the elimination of a series of care, reduce a series, and delay a series which is called missed nursing care.

Missed nursing care refers to any aspect of care required that is partially or eliminated or delayed¹⁵. Studies have shown that missed nursing care can cause many complications for the patients, such as increased length of hospital stay, increased incidence of infection, increased medication errors, pneumonia, delayed discharge, and increased patient dissatisfaction¹⁶⁻¹⁸. It also causes many problems for nurses and hospitals such as dissatisfaction of nurses with themselves and the nursing job, leaving

the job and as a result, the hospital faces a shortage of nursing staff and spends a lot of money to hire new staff ¹⁹. Given the importance of nursing care for Covid-19 patients to recover as quickly as possible, to diminish anxiety, and to condense the side effects of the disease ²⁰⁻²³, the issue of missed nursing care is critical. Therefore, considering the importance of this issue, to reduce the side effects of the disease and also to help nursing managers to find the reasons for missed nursing care and eliminate it to provide better and safer treatment, it is important to conduct this study to investigate the missed nursing care in the corona wards and find the reasons for its loss.

Method

Study design and participants

The present study was conducted as a cross-sectional study (descriptive analysis) in the summer of 2020 and the target population was all nurses working in the corona wards in different shifts in educational hospitals. Inclusion criteria included all nurses who had at least 6 months of clinical experience and had at least a bachelor's degree in nursing. Lack of cooperation or unwillingness to participate in the study and the existence of mental illnesses such as nurses' depression was defined as exclusion criteria. According to the inclusion and exclusion criteria, all 135 nurses working in the corona ward who were willing to participate in the study were enrolled in the study by census method.

Data collection

After the necessary coordination with the educational and medical hospitals, a two-part questionnaire was used to collect data. The first part is related to nurses' demographic information, which includes the location of work, age, gender, education, work experience in the ward, the number of working hours per week, the number of shift hours per week, the amount of shift/day missed in the last three months; and also four questions were asked with the content of whether they intend to leave their current position and whether they feel they have enough strength in the current ward and the level of satisfaction with the current position and the level of satisfaction with teamwork in the Corona section. The second part included the Missed Nursing Care Questionnaire and the reasons for the missing nursing care ²⁴. Since this questionnaire was in English, after obtaining permission from the authors and receiving instructions for using and classifying the questions of the questionnaire, the questionnaire was translated into Persian both by translation and reverse translation. To do this, two nursing specialists fluent in English were asked to translate the questionnaire into Persian, and after reviewing the text and the necessary cultural adaptations and minor changes in the manuscript, it was given to two other specialists to be translated into English. Finally, after fully matching the English version with the final translated version, for content and face validity, the questionnaire was given to 10 experts in the field of nursing with at least 15 years of research and clinical experience. CVR and CVI indices were used to determine the content validity. All questions had a CVR index greater than the minimum acceptable value according to the Lawshe ²⁵ table by 0.62 and also the CVI index of the whole questionnaire was more than the minimum value of 0.79 ²⁶. A quantitative method was used to determine face validity and all questions were

approved. Confirmatory factor analysis was used to determine the construct validity of the questionnaire and it was approved without any fundamental changes in the construct validity. The reliability of the questionnaires was also assessed by Cronbach's alpha index.

The Missed Nursing Care Questionnaire and the reasons for missing care include two main sections. The first part is about missed nursing care, which includes 24 questions with a five-choice Likert scale (5. always missed to 1. never missed) and three factors: necessary care (13 questions), supportive care (5 questions), and secondary care (6 questions). In the present study, the reliability of all three factors was 0.89, 0.745, and 0.794, respectively, and the total reliability of this section was 0.933. The second part of the questionnaire is related to the reasons for the missing of care, which includes 17 questions with a Likert scale of four options (4. "Important reason" to 1. "it is not an important reason for the missing of care") and five human resource factors (3 questions), communication resources (3 questions), communication (4 questions), responsibility (4 questions) and unpredictable situations (3 questions). In the present study, the reliability of all five factors are 0.726, 0.837, 0.884, 0.829, and 0.734 respectively and the total reliability of this section was 0.910.

Analysis

All statistical tables were prepared as numerical (percentage) and mean (standard deviation). Due to the normality of quantitative data distribution, which was evaluated by the Kolmogorov-Smirnov test, parametric tests including Independent Sample T-Test and One-Way ANOVA with Tukey Post-Hoc test were used. To prioritize the factors of the questionnaire in the present study, the Friedman Test ranking method was used. All tables and statistical analyzes were performed by SPSS software version 21 and the level of significance of statistical tests was considered as 0.05.

Ethical considerations: After obtaining an official license from the Ardabil University of Medical Sciences (code of ethics IR.ARUMS.REC.1398.307) and coordinating with the head of the hospitals, security guards, and ward nurses, the researcher introduced herself to the research participants and after explaining the purpose of the research, obtained their written consent to take part in the research. All research participants were assured that the information obtained was confidential and did not need to be named.

Results

The study involved 135 corona ward nurses, 80.7% of whom were female and 19.3% were male. The majority (45.2%) of the participants were in the age range of 25 to 34 years and 43.7% were in the age range of 35 to 44 years. The vast majority (97.8%) of the participants had a bachelor's degree and 57.0% had 2 to 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 and 50.4% of them worked in 8 or 12-hour work shifts and 30.4% worked in 8-hour shifts, of which 45.2% missed at least one or more shifts/days in the last three months. Moreover, among the nurses, 71.8% intended to leave their current position in the corona ward and 80.8% of the nurses believed that the

manpower present in the wards was insufficient or completely insufficient. The present study showed that 51.9% of nurses were dissatisfied or completely dissatisfied with their current position and 56.3% of nurses were dissatisfied or completely dissatisfied with the teamwork in the corona ward.

This study showed that the type of shift work of nurses was significantly associated with missed nursing care ($P < 0.05$), ($P = 0.001$); so that the mean total score of the Missed Nursing Care Questionnaire in 10-hour shifts was higher than other shifts. Among the missed care factors, only the necessary care factor had a significant relationship with the number of hours of nurses' work shifts ($P < 0.05$). 8-hour and 12-hour rotation shifts show the highest rate of missed necessary care and 10-hour shifts show the lowest rate of missed nursing care, and no significant difference was seen between the other shifts. The results of this study showed that considering the total score of the questionnaire among the reasons for missed care, human resource factors ($P = 0.001$), communication ($P = 0.001$), responsibility ($P = 0.005$), and unpredictable situations ($P = 0.015$), show a significant relationship with nurses' work shifts, according to the nurses participating in this study, in 8 and 12-hour rotating shifts, the highest rate of missed care was related to human resource factors, communication, and unpredictable situations, and in 10-hour shifts, the highest rate of missed care is related to the responsibility factor. The results of this study also showed that nurses' work records show a significant relationship with the factors of necessary care ($P = 0.045$) and secondary care ($P = 0.024$). The highest rate of missed necessary and secondary care is seen in the work experience of more than 10 years, which is significantly different from less than 10 years of experience. The results showed that people with more than 10 years of work experience perform better than those with less than 10 years of experience in unpredictable situations.

This study showed that the gender of nurses has a significant relationship with missed nursing care ($P = 0.002$). Necessary care ($P = 0.001$) and secondary care ($P = 0.039$) had a significant relationship with nurses' gender. The results also showed that the essential and secondary missed care in male nurses was significantly less than in female nurses. The results of this study showed that human resource factors ($P = 0.004$) and communication factors ($P = 0.001$) were significantly different between men and women. The rate of missed care related to human resource factors and communication factors in female nurses was significantly higher than in men.

The results of this study, which was performed in the corona ward, showed that the necessary care, vital signs evaluation variables according to the instructions, intake, and output (I&O) monitoring, complete recording of all necessary data, hand washing, blood sugar control by the patient's bed according to the instructions are never missed. Furthermore, moving the patient three times a day or as directed, changing the patient's position every 2 hours, giving medication 30 minutes before or after the schedule, evaluating the patient in each shift, care, and evaluation of peripheral catheter and central venous line according to hospital rules, and wound care as necessary care is rarely missed (Table 1). From the perspective of nurses participating in this study, low staffing and disproportionate patient-to-nurse ratio, patient emergencies, unexpected increase in the number of patients or workload in the ward, and high volume of admission and discharge are the most important reasons for missed nursing care. Unavailability of medicines when needed, unavailability of required supplies and equipment, improper functioning of

supplies and equipment in the case of necessity, failure of communication with other auxiliary departments, stress or failure of communication with medical staff, failure of nurse assistant to notify the lack of care, leaving the ward or momentary unavailability of the caregiver was of little importance for the missed nursing care (Table 2).

The results of this study also showed that among the indicators of missed nursing care, necessary care has the highest priority and supportive care has the lowest priority. Among the reasons for the missed nursing care, unpredictable situations have the highest priority and material resources have the lowest priority from the perspective of nurses participating in the corona ward (Table 3).

Discussion

The present study aimed to investigate the amount of missed nursing care in the corona ward and the reasons affecting it. According to the results of this study, it can be said that increasing the number of patients, a low number of nursing staff, long working hours of nurses, and also being in a new position causes problems for nurses such as dissatisfaction with their position, intention to leave their current position and loss of many care which has been shown to have a significant negative impact on the health of patients as well as nurses. Tolerating high levels of stress for a long time and being in an unfamiliar environment has disrupted the nursing care process and can also negatively affect nurses' attitudes toward their work ^{27,28}. These issues could be the reason for the lack of supportive and secondary care that we achieved in this study. Nursing staff may provide only necessary care for patients due to fear of the virus, exposure to new environments, wearing protective clothing for long hours, and simultaneous care of a large number of patients, and may pay less attention to supportive and secondary care.

The low number of nursing staff was the main reason for the missed care in the corona ward, which was found in this study, and is completely consistent with the results of a study conducted by Lam et al. (2019). They stated that the lack of human resources is one of the main factors that prevent nurses from responding appropriately in emergencies during the epidemic period ²⁹. Therefore, the loss of care due to lack of manpower and not having enough time to do all the care is quite predictable.

A 2014 study by Bea et al. found that when nurses' shift hours should increase, the rate of nursing errors also increases ³⁰. Another study conducted in 2020 by Zhang et al. in the corona department showed that with the increase in nurses' working hours during the corona epidemic, nurses' stress and dissatisfaction increased, which affected nurses' health and also harmed the quality of care ³¹. In the present study, it was also stated that in 12-hour rotating shifts, the rate of loss of necessary care is more than 10-hour shifts and less.

In corona patients with diabetes, one of the most important care is to check blood sugar by the patient's bed ³². The results of our study also show that one of the cares that have the least loss rate is checking blood sugar by the patient's bed, and this shows the nurses' attention to the importance of this issue.

Reducing the time spent at the patient's bedside and reducing the time of face-to-face care in corona patients is one of the basic principles to minimize the spread of infection ³², which can be the reason for the missed secondary and supportive care.

In the present study, it is concluded that the amount of necessary and secondary care missed among male nurses is less than female nurses. A study conducted by Çelmeçe & Menekay states that the level of stress in female nurses is higher than male nurses, which can be due to more responsibilities in life and outside the workplace, which increases stress at work ³³. Therefore, the loss of more care among female nurses can be the result of more stress outside of work in women. In the present study, the results showed that supportive care had the highest rate of loss, among which, the emotional support of the patient and their family had the highest rate, which is confirmed by previous studies ^{34,35}. Some authors also argue that due to the large volume of nurses' work, they devote the time that should be devoted to this care to other care that is more necessary and prioritized ³⁶⁻³⁸.

In this study, the least missed care was related to hand washing, which in previous studies conducted before these epidemics, this option was not one of the lowest; this could be due to the observance of protocols and more sensitivity of nurses to observe hygiene and prevent infection and transmission of this virus. In previous studies, elements such as complete recording of all necessary data, patient assessment in each shift, blood sugar checks by the patient's bed were among the less missed cares that are in line with our study ^{16, 24, 34, 37, 39}. Some studies suggest that the rate of missed care depends on some individual characteristics of the nurse, such as education and work experience ^{16, 35, 38}, which was also found in this study. As mentioned, the amount of missed nursing care was higher in nurses with more than 10 years of work experience than other nurses. We also noted that nurses with more work experience perform better in emergencies than nurses with less work experience.

In the category of the most important reasons for the missed care, they can be stated as follows: unpredictable situations, human resources, communication resources, responsibility, and finally material resources. This finding is supported by previous studies that consider human resources as the most important reason and material resources as the least important reason ^{16, 24, 39, 40}. The fact that material resources were chosen as one of the least important reasons for the missed care can be due to the special circumstances of these epidemics and the efforts of hospital managers to protect staff and reduce disease transmission so that they provide all the facilities for this department.

Conclusion

In general, the results obtained from this study showed that nurses' position in a new situation and unfamiliarity with the disease and its treatment and care process, has a significant impact on the amount of care provided. Managers can use this information to try to solve existing problems and help improve the quality of care.

It can also be noted that many secondary and supportive care in Iranian hospitals are performed by the patient's companions according to the necessary training and the unavailability of companions in this ward can be one of the important reasons for the loss of supportive and secondary care. One of the limitations of this study was the low number of nurses in corona wards and another was the lack of cooperation of all staff due to the high workload. It is hoped that 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 the miss cares and finding a better solution then we can improve the quality of care delivery and increase the satisfaction of nurses and patients. Also when we have a perspective about what kind of care miss more in the pandemic situation or situations like that, we can handle it better in the future.

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Tables

Table 1. Summary of information about the Missed Nursing Care Questionnaire

Missed Nursing Care Questionnaire	Never	Seldom	Sometimes	Often	Always	Mean	Standard Deviation	Median
Educating the Patient about the Disease, Tests and Diagnostic Examinations	14.1%	36.3%	49%	36.3%	0.0%	2.39	0.77	2.0
Emotional Support of the Patient or Family	7.4%	31.9%	44.4%	15.6%	0.7%	2.70	0.85	3.0
Giving Warm Food to the Patient	14.1%	29.6%	42.2%	29.6%	9.6%	2.61	0.99	3.0
Washing Hands	80.7%	13.3%	5.2%	0.7%	0.0%	1.26	0.59	1.0
Completing Data Entry	60.7%	24.4%	11.9%	2.2%	0.7%	1.58	0.84	1.0
Intake and Output (I&O) Monitoring	57.0%	32.6%	9.6%	0.7%	0.0%	1.54	0.70	1.0

Table 2. Summary of information about the Missed Nursing Care Questionnaire

Reasons for Missed Care	Not Important	Low Importance	Medium Importance	Important	Mean	Standard Deviation	Median
Low Staff	0.0%	0.7%	14.1%	85.2%	3.8	0.4	4
Patient Emergency Situations (E.G. Worsening of The Patient's Condition)	0.7%	1.5%	23.0%	74.8%	3.7	0.5	4
Disproportionate Ratio of Patient to Nurse	3.0%	3.7%	27.4%	65.9%	3.6	0.7	4
Lack of Required Supplies and Equipment	9.6%	42.2%	32.6%	15.6%	2.5	0.9	2
Failure of Nurse Assistant to Inform that care was not provided	21.5%	40.7%	33.3%	4.4%	2.2	0.8	2
Improper Operation of Supplies and Equipment if Necessary	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 P
Missed Nursing Care Questionnaire	Necessary Care	3	1	0.001
	Secondary Care	1.84	2	
	Supportive Care	1.16	3	
Reasons for Missed 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

Competing Interests

The authors declare no competing interests.