Original Article

Missed Nursing Care, the Related Organizational Factors, and Strategies for Decreasing it from the Viewpoints of Nurses in University-Affiliated Hospitals of Birjand in 2019-2020

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Abstract

Background: For many reasons, some care services may be missed. This study was conducted to investigate missed care, the related factors, and solution for decreasing them. **Materials and Methods:** A descriptive, cross-sectional study was performed on 122 nurses. A multi-part tool was used to gather information, which included demographic information, the Missing Nursing Care and Related Organizational Factors, and Missed Nursing Care Reduction Strategies Questionnaire. Descriptive and inferential statistical tests including ANOVA, independent t-test, and the Pearson correlation were used. **Results:** The mean score (SD) of the Missing Nursing Care Questionnaire was 82.04 (8.50); thus, the amount of missed nursing care is very high. Additionally, the mean score (SD) of the Organizational Factors Questionnaire related to it was 30.98 (9.35). Considering the maximum score of the questionnaire (80), the role of organizational factors in the incidence of missing nursing care is relatively moderate. There was also a weak and inverse correlation between organizational factors and missed nursing care ($r = -0.30$, $p < 0.01$, $df = 120$). Based on the results, increasing the number of nurses and their level of knowledge has the greatest 67.21 (%) and least 34.42 (%) impact on reducing the incidence of missed nursing care. **Conclusions:** According to the results, the prevalence of missed nursing care was high. However, the contribution of organizational factors to it is relatively little. This suggests that from the perspective of nurses, factors other than organizational factors related to the workplace can lead to missing care.

Keywords: *Nursing, patient care, standard of care*

Introduction

Caring is an essential component of health care interventions. In all the medical settings in which care is provided, such as hospitals, nursing care is the most important issue. Moreover, in most countries, the rating and accreditation of hospitals are affected by nursing care and its quality.[1] Therefore, providing quality care is a priority in the health care system.[2] Nursing care should be safe, effective, patient-centered, timely, and equitable.[3] However, increasing stress due to staff shortages and time constraints in healthcare settings has reduced direct care time for patients, leading to missed nursing care.[4] Missed nursing care is defined as any aspect of the required patient care that is omitted (either in part or in whole) or delayed and is conceptualized within the Missed Nursing Care Model.[5] The nursing care provided by nurses is not always complete and may be neglected.[6]

Missed nursing care has negative effects on fall patients, infections, pressure ulcers, and mortality.[7] Efforts to prevent missed nursing care require in-depth research into the nature of such care and the underlying factors. There are much international research about missed nursing care and its related factors.[8-10] However, it should be noted that the causes of neglected care can vary depending on the research environment, and financial and personal resources of each community's health system; thus, it is important to raise questions regarding what care is missed, what causes forgetfulness or omission of care, and what strategies can minimize their occurrence.[8] As Dehghan-Nayeri *et al*.[11] have stated, despite the long history of missed nursing care and its importance, only recently has it raised widespread concerns in the field of health. Therefore,

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this study was conducted to identify missing nursing care, the related organizational factors, and effective strategies to reduce its occurrence from the viewpoint of nurses working in 2 hospitals affiliated with Birjand University of Medical Sciences, Iran, in 2019–2020.

Materials and Methods

This descriptive-correlational study was conducted from November 2019 to August 2020. The study population consisted of 143 nurses working in two teaching hospitals at Birjand University of Medical Sciences. The sampling method was census and 143 questionnaires were distributed; 122 questionnaires were returned (15 nurses did not provide informed consent and 6 of them did not return the questionnaires). The study inclusion criterion was at least 1 year of clinical experience and the exclusion criterion was incomplete questionnaires. A multi-part tool was used to gather information, which included a demographic information form, the Missing Nursing Care and Related Organizational Factors, and Missed Nursing Care Reduction Strategies Questionnaire. This questionnaire was prepared by Kalisch in 2006 and was used in psychometrics in 2009 by Kalisch and William,[12] it has been used in several studies and includes 24 items, such as patient movement, rotation, evaluation, training, discharge planning, and prescribing medication.[13] Each item is scored on a 4-point Likert scale ranging from 1 to 4 (I rarely forget, now and then I forget, I constantly forget, and I always forget). The highest total score on the questionnaire is 96 and the lowest score is 24, the higher the score, the higher the possibility of forgetting care.[14] The validity of this questionnaire was 0.89 and its reliability was 0.88. It should be noted that the validity and reliability of this questionnaire in Iran were re-examined by Khajooee *et al*.[8] and reported being 0.99 and 0.91, respectively.

To identify organizational factors related to missed nursing care, a questionnaire designed in 2015 by Blackman *et al*. in Australia was used.[9] This questionnaire is based on the results of research conducted by Kalisch and Williams in 2009[12] in the development of the miss care research tool. This 17-item questionnaire includes 3 subscales of human resources, material resources, and communication at the time of the study. At the time of the evaluation of the validity of this questionnaire by Khajooee *et al*.,[8] based on the differences between the Australian and Iranian nursing systems, 3 items were added to this questionnaire, which resulted in a 20-item questionnaire. The items are scored based on a 4-point Likert scale ranging from 1 to 4 (insignificant, low importance, medium importance, and high importance). The validity of the questionnaire was estimated to be 0.98 and the reliability of the instrument was estimated to be 0.98 using Cronbach's alpha coefficient.

The last part of the data collection tool was a questionnaire that identifies strategies for the reduction or elimination of missing nursing care. A researcher-made questionnaire was also used. For designing and psychometrics of the researcher-made questionnaire, the Waltz 2010[15] method was used in 4 stages: 1) defining the concept, 2) designing the initial questionnaire, 3) determining the validity of the questionnaire, and 4) determining the reliability of the questionnaire. After defining a useful strategy for the initial design, some books, dissertations, and articles in national and international databases were used (The initial version of the questionnaire was prepared based on a literature review). The initial questionnaire was designed with 21 items, and then, its content validity was confirmed by 10 nursing faculty members. After content validation, the number of the items was ultimately reduced to 18 items in the 3 subscales of solutions related to the nurse, solutions related to the treatment management team, and solutions related to structural problems (Content Validity Index: 0.90). To evaluate the reliability of the questionnaire, Cronbach's alpha coefficient was used (α = 0.82). Each question was scored on a 4-point Likert scale (ineffective, hardly effective, moderately effective, and highly effective).

All nurses were provided a packet including the informed consent form and study questionnaires. They could choose to sign the consent form and complete the questionnaires. In total, 122 questionnaires were completed. After coding, the collected data were entered into SPSS software (version 18; SPSS Inc., Chicago, IL, USA). Descriptive statistics (mean, standard deviation, and frequency distribution) and inferential statistics were used to analyze the missed nursing care based on demographic variables (independent t-test and ANOVA) and the correlation of missed nursing care and its related factors (Pearson correlation).

Ethical considerations

This study is the result of a project that was approved by the Ethics Committee of Birjand University of Medical Sciences, Birjand, Iran (ethical code: IR.BUMS.REC.1398.303). The ethical principles taken into consideration in the present study include obtaining permission to conduct research from the Research Ethics Committee of Birjand University of Medical Sciences and obtaining written informed consent from participants after explaining the purpose of the study and assuring them of their freedom to leave the study at any time.

Results

In the present study, 122 nurses working in 2 hospitals participated in the census. According to the findings, most of the research units were men 52.50 (%) and single 77 (%). The mean age of the nurses was 30.10 (6.71) years and their mean (SD) work experience was 7.26 (6.80) years. The total mean (SD) score of missed nursing care was 82.04 (8.50). Considering that the score range of the questionnaire is 24–96, it can be concluded that the possibility of missed nursing care reported by nurses is very

high. In addition, the mean (SD) of organizational factors related to missed care was 30.98 (9.35), which is low considering the score range of the questionnaire (20-80).

The Pearson correlation test showed a significant inverse correlation between the mean score of missed nursing care and organizational factors ($r = -0.30$; $p < 0.001$, $df = 120$).

According to the findings presented in Table 1, the highest mean (SD) scores of missed nursing care were related to blood glucose control with a glucometer [3.85 (0.48)], complete recording of essential information in the file [3.80 (0.47)], measurement of vital signs according to the doctor's orders [3.80 (0.52)], general evaluation of the patient [3.76 (0.50)], and delay in injection of the prescribed drug [3.74 (0.55)], respectively.

The lowest mean (SD) scores of missed nursing care were related to performing or supervising the patient's bath and skin care [2.96 (0.90)], supervising the preparation of food for patients who can eat by themselves [2.99 (1.00)], performing oral care [3.00 (0.91)], moving the patient in the bed every 2 hours [3.05 (0.73)], and participating in interdisciplinary patient care conferences [3.07 (0.88)] [Table 1].

Based on the point view of the nurses, the factors most effective on missed nursing care were, respectively, related to inconsistency of the mentioned care with the duties of the nurse, unusual prescription of the doctor for the patient, tension or poor communication with other support centers. The following items had the least impact, respectively: improper equipment when necessary, unavailability or absence of the nurse responsible for patient care, unavailability of equipment and supplies when necessary, lack of nursing staff, and lack of support from other treatment team members [Table 2]. The comparison of the mean score of missed nursing care and the factors affecting it in terms of demographic variables only showed a significant relationship between gender and the mean score of missed nursing care ($t = -1.98$ $df = 121$ $p < 0.049$) [Table 3].

The final findings of this study were related to solutions for decreasing missed care from the perspective of nurses. Based on the findings, a highly effective solution was increasing the number of nursing staff by 67.21 (%) whereas a less effective solution was increasing nursing knowledge by 34.42 (%). Other solutions that more than 50 (%) of nurses mentioned were time management 62.22 (%),

Table 1: Frequency distribution of missed nursing cares from the perspective of nurses

Type of care	I rarely forget *n* (%)	Sometimes I forget *n* (%)	*n* (%)	I always forget *n* (%)	Mean (SD)
Out of bed, the patient, three times a day or according to the doctor's order	58 (47.20)	54 (43.90)	10 (8.10)	1 (0.80)	3.37 (0.67)
Moving patients to the bed every 2 hours	34 (27.60)	63 (51.20)	24 (19.50)	2 (1.60)	3.05 (0.73)
Monitoring the feeding of the patient	60 (48.80)	39 (31.70)	17 (13.80)	7 (5.70)	3.24 (0.89)
Supervising the preparation of food for patients who can eat by themselves	46 (37.40)	45 (36.60)	17 (13.80)	15 (12.20)	2.99 (1.00)
Delay in the injection of the prescribed drug	97 (78.90)	21 (17.10)	4 (3.30)	1 (0.80)	3.74 (0.55)
Measuring vital signs according to the doctor's orders	104 (84.60)	16 (13.00)	1 (0.80)	2 (1.60)	3.80 (0.52)
Fluid absorption and excretion control	67 (54.50)	45 (36.60)	9 (7.30)	2 (1.60)	3.44 (0.70)
Complete recording of essential information in the file	103 (83.70)	16 (13.00)	4 (3.30)	0	3.80 (0.47)
Patient education about the disease	68 (55.30)	44 (35.80)	9 (7.30)	2 (1.60)	3.45 (0.70)
Emotional support of the patient and his/her family	57 (46.30)	48 (39.00)	13 (10.60)	5 (4.10)	3.28 (0.81)
Performing or supervising patients' bath and skin care	39 (31.70)	49 (39.80)	26 (21.10)	9 (7.30)	2.96 (0.90)
Performing oral care	42 (34.10)	48 (39.00)	24 (19.50)	9 (7.30)	3.00 (0.91)
Washing hands before care services	79 (64.20)	32 (26.00)	10 (8.10)	2 (1.60)	3.53 (0.71)
Educating the patient at the time of discharge	73 (59.30)	34 (27.60)	14 (11.40)	2 (1.60)	3.45 (0.76)
Controlling blood glucose with a glucometer	108 (87.80)	13 (10.60)	0	2 (1.60)	3.85 (0.48)
General evaluation of the patient in each shift	0	25 (20.30)	1 (0.80)	1 (0.80)	3.76 (0.50)
Re-evaluating the patient based on the patient's condition	71 (57.70)	47 (38.20)	4 (3.30)	1 (0.80)	3.53 (0.60)
Evaluating and taking care of the patient's peripheral and central entrance routes	62 (50.40)	49 (39.80)	10 (8.10)	2 (1.60)	3.39 (0.70)
Answering the patients' questions for a maximum of 5 min	87 (70.70)	27 (22.00)	7 (5.70)	2 (1.60)	3.62 (0.67)
Prescribing PRN* drugs within 15 min after the patient's request	93 (75.60)	26 (21.10)	4 (3.30)	0	3.72 (0.51)
Evaluating the effect of drugs	61 (49.60)	45 (36.60)	16 (13.00)	1 (0.80)	3.35 (0.73)
Participating in interdisciplinary patient care conferences	44 (35.80)	51 (41.50)	20 (16.30)	8 (6.50)	3.07 (0.88)
Cooperating in and supervising the patient going to the toilet in the first 15 min after the request	51 (41.50)	45 (36.60)	20 (16.30)	7 (5.70)	3.14 (0.89)
Skin wound care	84 (68.30)	33 (26.30)	4 (3.30)	2 (1.60)	3.62 (0.63)

*Pro Re Nata

Table 2: Frequency distribution of factors related to missed care from the perspective of nurses

Factors related to missed care	Unimportant *n* (%)	Low importance *n* (%)	Medium importance *n* (%)	High importance *n* (%)	Mean (SD)
Lack of nursing staff	7 (5.70)	5 (4.10)	22 (17.90)	89 (72.40)	1.43 (0.82)
Emergency conditions of patients, for example, worsening of the patient's condition	6 (4.90)	5 (4.10)	32 (26.00)	80 (65.00)	1.49 (0.79)
Unexpected increase in the number of patients	4 (3.30)	6 (4.90)	32 (26.00)	81 (65.90)	1.46 (0.73)
Lack of support personnel or a secretary	4 (3.30)	4 (3.30)	38 (30.90)	77 (62.60)	1.47 (0.71)
Unusual orders of the doctor for the patient	3 (2.40)	28 (22.80)	35 (28.50)	57 (46.30)	1.81 (0.82)
Lack of availability of drugs when necessary	4 (3.30)	14 (11.40)	29 (23.60)	76 (61.80)	1.56 (0.82)
Inefficient delivery and change of shift at the time of shift delivery or patient transfer	2 (1.60)	12 (9.80)	43 (35.00)	66 (53.70)	1.59 (0.73)
Lack of provision of the required care by other members of the medical team (for example by a physiotherapist)	3 (2.40)	6 (4.90)	46 (37.40)	68 (55.30)	1.54 (0.70)
Unavailability of equipment when necessary	1 (0.80)	8 (6.50)	34 (27.60)	80 (65.00)	1.43 (0.65)
Improper equipment when necessary	3 (2.40)	8 (6.50)	24 (19.50)	88 (71.50)	1.40 (0.72)
Lack of support from other treatment team members	3 (2.40)	17 (13.80)	45 (36.60)	58 (47.20)	1.43 (0.65)
Tension or poor communication with other support centers	1 (0.80)	8 (6.50)	34 (27.60)	80 (65.00)	1.72 (0.79)
Improper communication among nurses	3 (2.40)	12 (9.80)	33 (26.80)	75 (61.00)	1.54 (0.77)
Improper communication with the physician	4 (3.30)	10 (8.10)	33 (26.80)	76 (61.80)	1.53 (0.78)
Non-distribution of nursing assistance	1 (0.80)	14 (11.40)	43 (35.00)	65 (52.80)	1.60 (0.72)
Unavailability or absence of the nurse responsible for patient care	2 (1.60)	3 (2.40)	37 (30.10)	81 (65.90)	1.40 (0.62)
High workload related to patient admission and discharge	2 (1.60)	12 (9.80)	34 (27.60)	75 (61.00)	1.52 (0.73)
Involvement of the nurse in other actions such as the duties of a secretary	4 (3.30)	14 (11.40)	35 (28.50)	70 (56.90)	1.61 (0.81)
A large amount of information must be written in the file	4 (3.30)	14 (11.40)	30 (24.40)	75 (61.00)	1.57 (0.82)
Inconsistency of the mentioned care is not related to the duties of the current nurse	9 (7.30)	19 (15.40)	35 (28.50)	60 (48.80)	1.81 (0.95)

Table 3: Comparison of the mean score of missed nursing care and the factors affecting it, in terms of demographic variables

Variable	Mean (SD)	
	Missed care	Factors related to missed care
Gender		
Male	83.57 (7)	31.05 (9.17)
Female	80.55 (9.12)	30.78 (9.56)
Result of statical test	t=−1.98, df=121, p<0.049	t=0.15, df=121 p=0.87
Marital status		
Single	82.32 (8.39)	31.03 (10.03)
Married	81.46 (9.06)	30.50 (6.61)
Result of statical test	t=−0.46, df=121, p=0.64	t=−0.26, df=121, p=0.79
Work experience (year)		
>10	82.46 (7.81)	31.26 (8.63)
11-21	80.13 (11.43)	27.95 (6.70)
<22	84.16 (7.13)	36.16 (21.57)
Result of statical test	F=0.84, p=0.43	F=2.15, p=0.12
Age (year)		
22-32	82.93 (7.73)	31.12 (8.81)
33-43	79.36 (10.19)	30.76 (11.17)
<44	85.00 (9.34)	27.25 (6.70)
Result of statical test	F=2.24, p=0.11	F=0.33, p=0.71

attention to moral and human values in the field of patient care by nurses 61.80 (%), lack of delegation of unrelated responsibilities to nurses 60.70 (%), the performance of care actions according to the nursing process 59.2 (%), reduction

of the workload of nurses 57.60 (%), support of nurses after reporting nursing errors 53.40 (%), creation of an atmosphere of teamwork for all members of the treatment team 52.80 (%), provision of relevant equipment and infrastructure 52.10 (%), continuous monitoring of nurses' care practices 50.90 (%), sharing of nurses' missed care experiences with their colleagues 50.40 (%), respectively.

Discussion

The aims of this study were the identification of missing nursing care, the related organizational factors, and effective strategies to reduce them. Findings related to missed nursing care demonstrated the possibility of missed nursing care to be very high. In addition, organizational factors related to missed care were low and there was a significant inverse correlation between these variables. Based on the findings, there were several effective solutions for decreasing missing nursing care. Each of these aims and variables is discussed in this section.

In a study conducted by Khajooee *et al*.,[8] the mean score of missed nursing care was 32.28 (7.41), which is lower than the average of the questionnaire, and this is contrary to the results of the current study. This may be due to the difference in the number of participants in the 2 studies; if more nurses were involved and more hospitals were selected in the current study, the results may have been in line with that of Khajooee *et al*.[8]

In our research, the highest mean scores of missed nursing care were related to blood glucose control with a glucometer, complete recording of essential information in the file, measurement of vital signs according to the doctor's orders, overall evaluation of the patient, and delay in the injection of the prescribed drug, respectively. In other studies, including that by Winters and Neville,[16] missed nursing care has been reported to include providing oral care, changing the patient's status, providing discharge education, educating patients, listening to their problems, controlling blood sugar, and evaluating the effectiveness of the medication, which is consistent with the present study.[16] However, the results of the study by Khajooee *et al*.[8] showed that the highest mean of neglected nursing care was related to participation in interdisciplinary patient care conferences, and this item was one of the least probable in our research.

In this study, the factors most effective on missed nursing care were, respectively, related to inconsistency of the mentioned care with the duties of the nurse, unusual prescription of the doctor for the patient, and tension or poor communication with other support centers. Dehghan-Nayeri *et al*.[11] showed that organizational factors facilitate the incidence of missed nursing care. In addition, system failure in management, lack of motivation, and inappropriate equipment were factors related to missed care that had some aspects in common with the findings of the present study. In another study conducted by Negarandeh *et al*.[17] in 2021, the results showed that the most important factor influencing inadequate care and the emergence of neglected care is the issue of clinical incompetence resulting from inadequate and improper education of nurses during their student years. The results of these studies are different from those of the present study and the reason may be that the research units of the study by Negarandeh *et al*.[17] were nursing students and not nurses.

According to the results, the average score of missed nursing care in women is higher than in men. In a study in Iran by Dehghan-Nayeri *et al*.,[18] the results showed that the underlying factors such as the personality traits of nurses, being a multi-role nurse, and being female nurses are other reasons for missed care. Ghanei Gheshlagh *et al*.[19] found that nurses' personality traits, age, and level of work experience are factors that may affect their perception of job stress, and consequently, their forgotten nursing care. Kalisch *et al*.[20] also found that women report more neglected nursing care. However, Sarver did not consider demographic variables such as age, gender, and work experience to be forgotten in nursing care and related factors.[21]

Another result of the present study was an inverse weak significant correlation between missed nursing care and its related factors. Furthermore, Kalisch and Lee[22] conducted a study to investigate the relationship between teamwork, which is one of the components of organizational and nursing factors, and neglected care in nursing. Their results indicated a negative and inverse relationship between these two components which is in line with the results of the present study.[22] Smith *et al*.[23] conducted a cross-sectional study on the relationship of neglected care with workplace and collective effectiveness. They found a significant positive correlation between neglected care, organizational factors, and collective effectiveness, which is inconsistent with the results of our research.[23] It seems that the difference in the research results is related to the differences in cultural context and working conditions.

As shown in our study, there are many effective solutions for decreasing missed nursing care. This finding is in line with the results of a previous study conducted in 2021 by Chaboyer *et al*.,[24] who suggested paying attention to nurses' reports of missed care, clinical competence of nurses, and routine monitoring as a quality and safety indicator. Contrary to our study results, in a cross-sectional study, a modified work environment and better work culture were the main solutions presented.[25] Finally, based on the results obtained in this study, a substantial amount of basic and clinically relevant nursing interventions was perceived to be missed, and this may lead to an increase in negative outcomes for patients admitted to a medical unit. Appropriate standards of nursing care should be adopted urgently in medical units to protect frail patients. The use of the census method and self-report questionnaires are the

limitations of the present study. The generalization of data must be done with caution.

Conclusion

The rate of missed nursing care is high. However, the role of organizational factors in it is relatively small. This suggests that, from the perspective of nurses, factors other than organizational factors related to the workplace are the cause of neglected care. This study also provided strategies based on nurses' opinions to reduce neglected care. Since, in this study, the factors affecting forgotten care and effective strategies to eliminate these factors have been identified, the results can be provided to nursing managers as well as clinical nurses to provide a basis for reducing missed care. Conducting more extensive and in-depth research in various medical centers and institutions with a larger sample size is suggested. In addition, it is also better to perform another study as an action or experimental research to eliminate and control the factors that cause missed care.

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Conflicts of interest

Nothing to declare.

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