

Exploring Factors affecting Missed Nursing Care in Cardiovascular Care Units: A Qualitative Study

Abstract

Background: Cardiovascular care units are among the most crucial departments in any healthcare system. In these units, nurses play the most pivotal roles, and the quality of nursing care is essential; missing certain aspects of care can have irreversible adverse effects on patient health. This qualitative study aims to investigate the factors influencing Missed Nursing Care (MNCs) based on the experiences of nurses and patients in cardiovascular care units. **Materials and Methods:** This qualitative study utilized the conventional content analysis approach to explore the factors affecting MNCs in cardiovascular care units. Data were collected between December 2021 and September 2022 through in-depth, semi-structured individual interviews with 11 participants selected through purposive sampling. Data analysis followed the five-step method proposed by Graneheim and Lundman. **Results:** The analysis revealed five main themes: nurse's job characteristics, work-life conflict, nurse's professional competence, the cardiac work environment atmosphere, and organizational management. **Conclusions:** The findings of this study suggest that authorities should consider factors such as understanding the occupational characteristics of nurses when assigning them to cardiovascular care units, providing solutions to mitigate work-life conflicts for nurses, enhancing nurses' professional competence, improving the working environment for nurses, and enhancing the performance and skills of organizational managers.

Keywords: Cardiovascular nursing, missed nursing care, nursing care left undone, qualitative research

Introduction

The increase in the number of heart failure patients worldwide is driving up the costs of managing this disease, with projections indicating that by 2030, these costs will reach almost 400 billion US dollars.^[1] Among the medical staff in cardiac care units, nurses play the most crucial role, as their performance directly impacts patients' health outcomes.^[2] However, given the high rates of mortality, disability, and patient readmissions, as well as the substantial costs associated with providing optimal care in these units, enhancing nurses' productivity in cardiac departments becomes a critical and imperative issue.^[3] Nevertheless, nurses working in cardiac care units face various challenges that can affect the quality of care they deliver.^[4] In many cases, these challenges force nurses to prioritize certain aspects of patient care while making difficult decisions about what care to

provide and what to forgo. Unfortunately, this prioritization can result in the omission of essential patient care tasks.^[5]

MNC is defined as a care error or omission that can be life-threatening, according to international standards of patient safety and quality of care.^[6,7] MNC is a widespread problem within healthcare systems globally.^[8] Numerous studies have revealed that MNC is consistently associated with negative outcomes, including prolonged hospital stays, reduced patient satisfaction,^[9] compromised patient safety, diminished hospital reputation in the eyes of patients,^[10] and increased medication errors.^[5] Given the critical nature of cardiac care units within healthcare systems, any omission of nursing care can be significantly more detrimental and perilous for patients compared to other hospital departments. Consequently, it is crucial to identify the factors that may contribute to MNC.

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Although previous research has explored this topic extensively and identified factors such as staffing shortages, inadequate facilities,^[8,11] poor teamwork,^[12] and subpar management^[13-15] as potential causes of missed care in various healthcare systems, the question remains: In Iran's healthcare system, with its specific cultural, social, economic, and political characteristics, what factors influence the missed nursing care, particularly in cardiac care units? A comprehensive answer to this question necessitates further study and a more in-depth investigation. Qualitative research delves into the subjective dimensions of individuals' experiences, emphasizing comprehensive, dynamic aspects, and human experiences within the context of the conditions and from the perspective of those who have lived through them, offering profound insights.^[16] Therefore, this qualitative study aimed to explore factors affecting MNCs based on the experiences of nurses and patients in cardiac care units.

Materials and Methods

This qualitative study was part of a Ph.D. dissertation in nursing conducted between December 2021 and September 2022 using conventional content analysis. The participants included nurses working in cardiac care units, nursing managers, and patients hospitalized in cardiac care units (comprising two CCUs, one ICU, emergency, and five medical-surgical units) at Heshmat Educational and Subspecialty Heart Center in Rasht, Iran. Sampling was conducted using a purpose-based method without any restrictions in terms of maximum diversity (age, sex, clinical experience, type of employment, type of unit, and work shift) until data richness. Inclusion criteria for nurses and nursing managers required a minimum of 6 months of work experience in the cardiac care unit in either nursing or managerial roles and at least a bachelor's degree in nursing. For patients, inclusion criteria involved previous hospitalization in the cardiac care unit, the ability to express themselves, and share information. The exclusion criterion was voluntary withdrawal from the study.

Data were gathered through in-depth, face-to-face, and semi-structured interviews. Each interview commenced with an open-ended question such as "Please describe the care you provide for your patient during a shift?" and continued with questions such as "Based on your own experience, have you ever forgotten or delayed care, and how did that happen?" and "In your experience, how did you prevent this from happening again, and what factors were beyond your control?" Objective follow-up questions such as "Can you elaborate further?" or "Can you clarify this point?" were also asked. Interviews were recorded with participants' consent and ranged in duration from 15 to 65 min. Field notes supplemented the interviews, and data collection spanned over 10 months. Data saturation was achieved when codes were repeated, and no new codes emerged.

The five-step method proposed by Graneheim and Lundman *et al.*^[17] was employed for data analysis. This method involved transcribing interview content verbatim after each session, followed by multiple readings to comprehend participant statements in line with the research objectives. Primary codes were then extracted, and these primary codes were subsequently merged to form subcategories. Subcategories were compared based on similarities and differences, leading to the creation of categories. In forming these categories, efforts were made to maximize homogeneity within categories and heterogeneity among them. Ultimately, the main themes were determined. MAXQDA 2020 software facilitated data management.

Lincoln and Guba's four criteria of validity, reliability, transferability, and verifiability were used to establish trustworthiness.^[18] Validity was increased by the researcher's long-term presence in the research locations (10 months) and maintaining continuous communication with interviewees. Some interview texts, codes, and extracted data classes were reviewed not only by the research team but also by several faculty members, and consensus was reached on the final texts. Reliability was assured through peer checking and multiple meetings with research team members to assess work quality and results. To meet the criterion of transferability, purposive sampling was conducted among nurses with diverse backgrounds, including those in managerial and executive positions. To fulfill the verifiability criterion, the researcher meticulously documented all activities, decisions, collected data, observations, and the data analysis process from the outset to be made available to the audience if necessary.

Ethical considerations

Ethical considerations were adhered to, with research approval obtained under ethics ID: IR.GUMS.REC.1400.005. Before participating in the research, the researcher provided explanations regarding research objectives, information confidentiality, and voluntary participation. Informed consent was duly obtained from all participants.

Results

In this research, 11 face-to-face interviews were conducted with eight nurses, two nursing managers, and one patient. Participant characteristics are summarized in Table 1. Data analysis revealed 33 subcategories, 15 categories, and 5 main themes, including nurse job characteristics, work-life conflict, nurse professional competence, cardiac work environment atmosphere, and organizational management [Table 2].

1. **Nurse's job characteristics:** This theme explores personal aspects related to nursing and comprises two levels: Employee profile and professional experience of the nurse.
 - 1.1. **Employee profile:** These characteristics include items such as nurses' age, gender, educational level,

Table 1: Participants characteristics

| Participant (position) | n | Gender | | Work experience (years) | Academic degree | |
|------------------------|---|--------|------|-------------------------|-----------------|---------|
| | | Female | Male | | Bachelor | Masters |
| Nurse | 8 | 7 | 1 | 2.6-7 | 5 | 3 |
| Nursing manager | 2 | 2 | ---- | 19-25 | 1 | 1 |
| Patient | 1 | ---- | 1 | ----- | 1 | ----- |

Table 2: Subcategories, categories, and main themes of factors affecting MNC

| Themes | Categories | Subcategories |
|---|--|--|
| Nurse's job characteristics work-life conflict | Employee profile | |
| | Professional experience | |
| | Roles and responsibilities | |
| | Personal life problems | |
| | Behavioral characteristics | |
| Nurse's professional competence | Professional commitment | Interest in work Responsibility |
| | scientific and practical competence | Nurse's knowledge of cardiac care Clinical skills communication skill Spiritual care |
| | Empowering the patient's self-care | Patient education Involving the patient and family in care Patient learning needs assessment |
| | | Human resources productivity Quality of control and supervision Supporting the personnel |
| Cardiac work environment atmosphere | Management atmosphere | Manager's knowledge and ability Priority and urgency in providing care Mental stress caused by the cardiac attack Nurse's workload Patient-centered care Medical team performance The nature of the unit |
| | Caring atmosphere | Personnel and management communication Intra-professional communication of nurses Inter-professional communications |
| | Professional communication | Number of staff Recruitment and distribution of human resources Determining roles and responsibilities Development of care policies |
| | | Medicine, facilities, and equipment accessibility Physical space |
| | | Academic education quality Quality of in-service training |
| Organizational management | Recruiting and organizing human resource | Job security Organizational justice Job burnout |
| | Supplying and organizing the facilities | |
| | Education | |
| | Satisfaction | |

and employment type. One male nurse discussed the impact of gender on physical abilities, stating, "Physical problems are happening to me because of this (change of position), think that I am a man and have the physical ability. But women do not have the physical ability for this change" (P10-Nurse). Participants also highlighted

the influence of nurses' educational level on motivation and knowledge-based performance, suggesting that nurses with postgraduate education in their field are less likely to miss nursing care. "I was very motivated when I studied the intensive care course to do what I have to do more correctly" (P11-Nurse).

- 1.2. Professional experience:** Most participants believed that nurses with greater experience in caring for cardiac patients are less likely to miss required nursing care. *“A nurse with more experience is less likely to miss nursing care” (P7-Nurse)*. Experienced nurses, based on their knowledge gained through years of practice, can anticipate and diagnose problems, care needs, and emergencies for patients more swiftly and manage critical situations more effectively. *“Many times, due to working with heart patients, one gets that intuition. For example, when our patient is in pre-pulmonary edema phase and has not yet progressed to pulmonary edema, I can prevent it” (P11-Nurse)*.
- 2. Work–life conflict:** This theme relates to the balance and overlap of job and family roles, encompassing roles and responsibilities, personal life problems, and behavioral characteristics of the nurse.
- 2.1. Roles and Responsibilities:** Most participants mentioned the conflict between the maternal and professional roles of nurses, making it challenging to balance these roles and potentially leading to MNC. *“For example, when a nurse leaves her feverish child at home and heads to work in the morning, it becomes a problem directly related to her work” (P8-Manager)*. The availability of holidays and opportunities for recreation and rest can also impact nurse performance and the likelihood of care being missed. *“Nurses are always busy with work and have little leisure time, which affects their performance” (P2-Nurse)*.
- 2.2. Personal life problems:** Physical and financial issues and multiple life responsibilities can reduce a nurse’s physical capabilities or disrupt their focus, potentially leading to MNC. *“My colleague has back pain and can’t take sick leave, so what happens? She comes to work but can’t complete all her tasks, leading to potential missed care” (P10-Nurse)*.
- 2.3. Behavioral characteristics:** Certain moral qualities can enhance a nurse’s commitment and efficiency in their role, affecting their work output. These qualities include a spirit of sacrifice: *“Many times we have to sacrifice ourselves just so that no problem happens to the patient” (P1-Nurse)*; accuracy and concentration: *“Someone, for example, is a good person doing his/her job, but he/she is distracted. I have to remind him/her of his/her work” (P5-Manager)*; patience, conscientiousness, and adaptability to challenging situations.
- 3. Nurse’s professional competence:** This theme focuses on a nurse’s ability and skill in effectively performing their job duties, encompassing professional commitment, scientific and practical competence, and empowering patients’ self-care.
- 3.1. Professional commitment:** Some nurses noted that a desire for job security has led individuals to enter the nursing profession without genuine interest, potentially resulting in MNC. *“Many times, MNC occurs because some nurses lack genuine interest in nursing, choosing it solely because of job availability” (P11-Nurse)*. Participants also mentioned a perceived lack of responsibility among some nurses, affecting the quality of care. *“Despite our best efforts, there may be neglect in medication administration or vital sign monitoring” (P7-Nurse)*.
- 3.2. Scientific and practical Competence:** Nurses with a strong knowledge base can better assess symptoms and take timely action. Practical skills and scientific knowledge are essential for optimal care provision. Speed of action: *“The CCU nurse in CPR must make decisions and must have a speed of action” (P8-Manager)*, specialization and independent professional performance: *“Nursing doesn’t do anything independently at all. We have some nurses who are waiting to see what the doctor wrote and execute it, even if it’s wrong” (P11-Nurse)*; and effective patient communication: *“We have nurses who know the medicine and complications very well, they even know arrhythmias better than doctors, but their communication with the patients is very weak” (P8-Manager)* are critical components of nursing competence.
- 3.3. Empowering the patient’s self-care:** Enhancing cardiac patients’ self-care involves patient education, engagement of the patient and their family in care, and assessing the patient’s learning needs. *“For patients after surgery, the most important thing is to teach them: How to get up? What to eat? What should they do to make their cough less? How to reduce their pain? How to take care of the sternum wound?” (P2-Nurse)*. Empowering patients and their families in the treatment process can serve as a reminder for nurses to provide care and prevent missed care instances. *“Usually, we tell the patient: be careful before you eat, even if I wasn’t there, give me a message to come and check your blood sugar” (P1-Nurse)*.
- 4. Cardiac work environment atmosphere:** This theme encompasses the conditions within the clinical work environment and consists of three categories: managerial atmosphere, caring atmosphere, and professional communication.
- 4.1. Management atmosphere:** Ensuring control and supervision of nurses’ performance, particularly less experienced nurses, is essential

for guaranteeing the quality of care and reducing MNC. *“Sometimes supervisors randomly check nurses’ performance in administering medication or taking patient blood pressure. This keeps nursing staff more focused”* (P6-Nurse). Some nurses also highlighted shortcomings in leadership and support, which led to feelings of not being understood and coping with personal and work-related problems alone. This situation could contribute to increased MNC. *“Physical issues among nurses are often overlooked. We have a colleague with diabetes, but her condition is ignored. This leads to her missing some care tasks when her blood sugar levels fluctuate”* (P10-Nurse).

4.2. Caring atmosphere: Caring for cardiac patients, given their urgency and sensitivity, creates a stressful atmosphere for nurses, potentially disrupting their performance and resulting in MNC. *“Cardiac patients are highly sensitive. The stress level here is higher, and we’re expected not to make any mistakes easily”* (P11-Nurse). Additionally, the high volume of tasks exerts dual pressure on nurses, causing them to prioritize care due to time constraints. *“For a patient with heart failure, the nurse administers Lasix and a nitroglycerin drip, provides oxygen, and catheterizes the patient. Missing any of these tasks can be critical. However, after completing them, the nurse sits down to document, neglecting to monitor the patient, which can lead to a deterioration in the patient’s condition”* (P5-Manager). Furthermore, the quality of the medical team’s performance, including visits, consultations, operating room schedules, and patient communication, significantly influences MNC. *“Sometimes doctors don’t arrive on time, causing delays in administering necessary medications”* (P7-Nurse).

4.3. Professional communication: Effective communication between staff and management is one of the most critical factors influencing MNC. A nursing manager highlighted her successful relationship with nurses, saying, *“Young nurses make mistakes, but I call and warn them. They trust me because they know me. I have a good rapport with them”* (P5-Manager). Moreover, fostering proper cooperation, coordination, and teamwork spirit is crucial. According to one nurse, *“Besides cooperation, coordination is also vital. Aligning on what needs to be done and what has been done can significantly reduce errors”* (P11-Nurse). Reminders from colleagues also play a controlling role in reducing MNC. *“During shifts, we remind each other whether we’ve completed our tasks or not. These reminders can be helpful”* (P1-Nurse). Participants also emphasized the importance of

cooperation between nurses and other clinical teams, with one nurse sharing an experience. *“At the end of the shift, I noticed in the patient’s record that the attending physician had added a new order without informing us two hours earlier”* (P3-Nurse).

5. Organizational management: This theme refers to the performance of managers in relation to the nursing workforce and includes the recruiting and organizing of human resources, supplying and organizing the facilities, education, and job satisfaction.

5.1. Recruiting and organizing human resources: Most participants emphasized the insufficient number of personnel especially the shortage of nurses, as the primary factor influencing MNC.

“If there were more nurses, each nurse would have fewer patients to attend to. Honestly, a nurse could provide better care” (P6-Nurse).

“With more staff, nurses would have more time and could educate patients” (P7-Nurse).

Correctly defining roles and responsibilities was also recognized as a factor affecting MNC.

“Assigning tasks that aren’t traditionally a nurse’s responsibility makes it challenging for nurses to focus on patient care” (P8-Manager).

5.2. Supplying and organizing the facilities:

Participants highlighted the importance of providing an adequate and timely supply of facilities, equipment, and medications to facilitate nurses’ performance and reduce MNC.

“Sometimes, the medication I need to administer isn’t available on time. For example, clexane, which we should administer at 10 o’clock, sometimes arrives at 11:30” (P1-Nurse).

“Without suitable pressure-relief mattresses, preventing bedsores becomes challenging” (P4-Nurse).

5.3. Education: Some participants identified poor academic education as a significant factor in MNC, citing a mismatch between the topics taught in university courses and the practical needs of students. *“What’s taught at university during a semester is entirely different from what students have to do in real clinical settings”* (P10-Nurse). Additionally, participants found in-service training to be ineffective due to impractical and outdated topics, a lack of expert instructors, and scheduling conflicts with nurses’ shifts.

“After a night shift, nurses are expected to attend training classes, but they’re exhausted” (P8-Manager).

“Many courses are available, but they often lack practical relevance. There’s also a shortage of qualified instructors” (P4-Nurse).

5.4. Satisfaction: Job security emerged as a key motivator for work and, consequently, for reducing

MNC. *“Some nursing personnel have contracts for just 89 days, which is disrespectful. They lack job security, and the hospital offers a fixed salary for their workload. Consequently, personnel see these conditions, and many leave their jobs” (P1-Nurse).* Participants also noted dissatisfaction with the disparity between workload and salary as a factor affecting motivation. *“One reason for nurses’ low motivation is their low income, considering the demanding work they do” (P8-Manager).* The participants further highlighted the impact of nurse fatigue and burnout on MNC, citing factors like tight shift schedules, insufficient intervals between shifts, and nurses holding multiple jobs. *“Tight shifts can leave nurses fatigued and sleep-deprived” (P2-Nurse).* Another nurse added, *“Performing CPR is physically demanding and exhausting, which contributes to fatigue” (P10-Nurse).* Some participants indicated that nurses often work multiple jobs due to income considerations, leading to increased fatigue. *“[Most nurses] have to work two jobs and get tired. they have to because of income” (P2-Nurse).*

Discussion

This study was conducted to explore factors affecting MNCs based on the experiences of nurses and patients in cardiac care units. Participants identified various factors contributing to MNCs, including nurses’ job characteristics, work–life conflict, professional competence, cardiac work environment, and organizational management.

The participants highlighted the significance of nurse job characteristics in MNC occurrence, including age, gender, marital status, education level, type of shift, and clinical work experience. These findings align with a study by Du (2020), which indicated that factors such as not having children, higher education, holding a managerial position, full-time employment, and working night shifts were associated with reduced MNC.^[13] Additionally, experienced nurses were less prone to confusion due to their familiarity with work routines and better time management. This is consistent with Vatankhah’s study (2020),^[19] which showed that MNC decreases with increasing work experience and age of clinical staff.

Work–life conflict emerged as a significant challenge for nurses, impacting their performance and contributing to MNC. Factors such as variable work shifts, rotation, and discrepancies between nurses’ work holidays and official calendar holidays posed challenges, particularly for married nurses with children. Eyni’s study (2021)^[20] found that rotational and variable nursing schedules can lead to more family functioning issues and work-related stress compared to other professions. Additionally, participants noted that individual behavioral characteristics, specifically conscientiousness, played a vital role in reducing MNC.

This finding is consistent with Allahyari Bayatiani’s study (2015),^[21] which highlighted that conscientious nurses demonstrate a strong commitment to their profession, effectively completing their duties both quantitatively and qualitatively.

Professional competence was identified as another key factor influencing MNCs. Participants believed that a nurse’s performance reflects their knowledge, practical skills, and communication abilities. Nobahar (2014)^[22] also reported that nurses’ ability to diagnose patient deterioration, diagnose arrhythmias, and operate medical devices are critical for quality cardiac care. She also concluded that establishing communication between the patient and the nurse reduces the patient’s anxiety level and helps stabilize the hemodynamic status of the heart patient.

The atmosphere of the cardiac work environment was expressed as the most prominent factor affecting the incidence of MNC. In the specialized cardiac hospital, due to the type of patients, the kind of treatment, and the care they need, there is a different care-treatment atmosphere, which affects the nurse’s performance and the amount of MNC. The participants stated that the sensitivity and urgency in dealing with cardiac patients and the large amount of care they need leads to the prioritization of care by the nurse, which in many cases leads to MNC. In this regard, Carthon (2015)^[23] also reported that aspects of nursing care that may be considered a lower immediate priority are more likely to be missed, such as comforting and talking to patients, completing care plans, teaching the patient, and documenting. According to the participants’ experience, a factor preventing the occurrence of MNC is the existence of good cooperation and communication between nurses and teamwork. The findings of Yaghoubi’s research (2019)^[12] showed a significant negative relationship between MNC and teamwork. Therefore, with increased collaboration, the probability of MNC decreases.

Organizational management was described as a significant factor affecting MNCs. The ability of nursing managers, leadership, and support for nurses was deemed crucial. Effective management and leadership were seen as increasing nurse participation in care and reducing MNC, aligning with Kim’s (2018) findings.^[24] Najafi Ghezalje (2021)^[25] similarly emphasized the importance of nursing managers’ support and proper monitoring of nurses’ performance in reducing MNC. Nurse job satisfaction also emerged as an influencing factor in MNC, with factors such as high workload, staffing shortages, and low salaries contributing to nurse dissatisfaction. This finding is consistent with Janatolmakan’s study (2022).^[26]

This qualitative study provided an in-depth understanding of MNC factors. However, it was conducted in a single public heart center in the north of Iran, and hence, its findings may have limited generalizability to other settings.

Conclusion

In conclusion, this study revealed that factors influencing MNC in cardiac care units encompass nurses' job characteristics, work–life conflict, professional competence, the cardiac care environment, and organizational management. Addressing these factors is crucial for controlling MNC in cardiac care units. Authorities should consider the personal and occupational characteristics of nurses, seek solutions to reduce work–life conflict, enhance the professional competence of nurses in cardiac care units, improve the working environment, and develop the skills of organizational managers to mitigate MNCs.

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Conflicts of interest

Nothing to declare.

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