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ORIGINAL ARTICLE

Explaining the Emergency Nurses' Experiences of Near-Miss Events: A Qualitative Study

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Abstract

Introduction: Near-miss events play a crucial role in identifying opportunities for enhancing the quality and safety of healthcare systems. The hospital emergency department, due to the presence of numerous variables and a high volume of patients, is particularly susceptible to nursing errors and associated adverse outcomes resulting from negligence. The present study aimed to investigate the experiences of emergency nurses regarding near-miss events.

Methods: A qualitative conventional content analysis approach was employed. Using purposive sampling, 15 nurses were recruited from a trauma center affiliated with Birjand University of Medical Sciences, Iran, between June 2021 and November 2022. Data collection was conducted through semi-structured interviews, which were audio-recorded with participants' informed consent. The interviews were transcribed verbatim into Word documents and subsequently imported into MAXQDA (Version 2020) for systematic organization and analysis.

Results: The study included 15 nurses (53% female, 47% male), with the majority holding a bachelor's degree (87%) and an average of 12.23±5.52 years of work experience. Analysis of the data produced 347 open codes, which were organized into six subcategories and synthesized into three main categories: (1) an unprofessional atmosphere of the workplace, (2) an insufficient culture of learning from near-miss events, and (3) effects of staff personal life on work-life.

Conclusion: The findings highlight the critical need to foster professionalism in nursing, implement robust feedback systems, perform root cause analyses, and develop a structured approach to learning from near-miss events. These strategies can significantly improve the prevention and management of such events.

Key words: Emergencies, Emergency Nursing, Healthcare Near Miss, Qualitative research

Introduction

Medical errors are a major public health concern and a leading cause of death in the United States, creating difficulties in pinpointing consistent causes and developing effective preventative measures; enhancing patient safety requires acknowledging adverse events, learning from them, and cultivating a culture that emphasizes safety rather than blame, prompting healthcare organizations to concentrate on system improvement (1). Patient safety plays a vital role in today's healthcare system and is recognized as a critical global public health priority; however, errors frequently occur in clinical settings, and achieving absolute safety remains (2, 3).

The hospital emergency department, due to the existence of many variables, has many patients prone to nursing errors and often exhibits the most negligent side effects (4). However, the identification of near misses and adverse events can provide early warnings and be effective in improving the quality and safety of the healthcare system, as well as proactive and prospective risk management (5, 6). The World Health Organization (WHO) defines a near-miss event as "an error that was likely to cause a never event (injury to the patient) but not harm the patient due to chance or identification." A near-miss is an event related to

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patient safety, which is referred to as "any event that could have had adverse consequences but did not, and is indistinguishable from never events in all cases except the outcome" (7, 8).

Near-miss events are thought to occur between 7 and 700 times more frequently than never events, yet they are not reported regularly. Ballas et al. (2004) reported that one-third of hospital nurses experienced at least one near-miss incident over 28 days, with the most common type of near-miss event being drug-related. According to previous studies, approximately 23.2% of nurses reported experiencing near-miss events related to needle sticks, such as finding a needle at a patient's bedside (9). Errors in the nursing profession can cause irrecoverable consequences and cause patients' death, high costs to the health system, long-term hospitalization, and impairment of the image of the nursing profession in society (10).

Nurses play a crucial role in error management due to their direct involvement in providing care. They have always played a crucial role in ensuring patients' safety and preventing the side effects of the disease (11). Error management models suggest the vital role of nurses in identifying, disconnecting, and correcting medical errors. This process is known as the "error recovery process." Error recovery is a critical component of patient safety, serving as a complementary strategy alongside error prevention efforts within healthcare systems (12). In direct care, nurses often provide the ultimate chance for patient recovery from error. Nurses have a significant responsibility in preventing errors (13).

Nurses play a pivotal role in identifying potential errors within hospital settings and actively contribute to organizational learning and quality improvement initiatives that enhance patient safety (14). Near-miss events in emergency departments offer critical opportunities to enhance patient safety and prevent adverse outcomes. Research indicates that near-misses are relatively prevalent in emergency department (ED) settings, occurring in approximately 19.3% of patient visits (15).

The identification and understanding of near-miss cases in emergency departments, where the complexity and pace of care heighten the risk of errors, is particularly crucial. Despite the importance of this issue, in Iran, there is a notable lack of qualitative studies exploring nurses' experiences with near-miss events. Most existing research has focused on general discussions of nursing errors and error reporting, often relying on quantitative methods that do not delve into the nuanced dimensions of the phenomenon (16).

Employing a qualitative approach is crucial for gaining in-depth insights into the experiences and perspectives of nurses involved in near-miss events. This method facilitates a thorough examination of the contributing factors, thereby supporting a more comprehensive understanding, interpretation, and prevention of such events (17). Drawing on the experiences, ideas, and perspectives of nurses involved in near-miss cases offers valuable insights for explaining and interpreting these incidents more effectively. This understanding is critical to developing strategies to prevent near-miss events. Accordingly, this study aims to explain nurses' experiences of near-miss events.

Methods

In the present work, the qualitative content analysis method was employed to analyze the interviews of the participants. Qualitative content analysis is one of the various qualitative methods currently available for analyzing data and interpreting their meanings as a research process (18). This method was selected for its effectiveness in systematically interpreting and analyzing open-ended data, making it particularly valuable for exploring the complex experiences and approaches of nurses (19). Conventional content analysis is especially appropriate for research that seeks to generate themes inductively from the data, enabling a thorough and unbiased understanding of the phenomenon under study (18).

A purposeful sampling process was conducted from June 2021 to November 2022, involving nurses working in the emergency department who volunteered to participate in the study. Participants were selected from a trauma center affiliated with Birjand University of Medical Sciences, representing a diverse range of ages, genders, and work experiences. Inclusion criteria included at least five years of experience in the emergency department, willingness to participate in the study, as well as familiarity and experience-knowledge in case of near misses and never events. Therefore, the nurses who had the most experience and information in near-miss cases were selected. After meeting with the participants and stating the study's objectives, they were invited to participate in the study. The interview took place at a time and place of interest to the participants and in a quiet and private environment where the participants were comfortable.

Data were collected by the corresponding researcher through semi-structured interviews. Interviews with participants were conducted after working hours and lasted approximately 30-45 minutes, with an average duration of about 40

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minutes. First, demographic information, including age, gender, and work experience in the emergency ward, was recorded. The interviews began with an introductory question designed to elicit participants' descriptions of their experiences with errors occurring in the emergency department. Following this, more in-depth probing questions were posed to obtain a comprehensive and nuanced understanding of their experiences. A list of these questions is presented in Table 1. Data collection was completed when all categories were fully saturated, and no new data category was generated. All interviews were recorded and transcribed into a Word file, then imported into MAXQDA (2020) software. A total of 15 interviews were conducted with 15 participants.

Table 1. Interview questions

Type Questions	Questions
General question	*Please share your experiences with errors in the emergency department?*
Middle question	*What are your experiences with errors that could have happened but didn't?* *What actions did you take to prevent the error from occurring?* *Can you elaborate on that?* *What does this mean?*
Final question	*Are there any other keywords, ideas, or sentences that you think were missed during the interview?*

The data analysis process began immediately after the first interview and continued with the data collection process. In this study, Elo and Kyngas (2008) qualitative content analysis method was used to analyze the data (20). The present study employed a conventional content analysis approach, which involves three fundamental phases: open coding, category development, and abstraction. To begin, interview transcripts were read thoroughly and repeatedly to gain a comprehensive and nuanced understanding of the participants' experiences.

Afterward, sentences and phrases that conveyed meaningful insights related to near-miss events were selected as units of analysis. These segments were examined closely to identify 'meaning units' specific portions of text that captured key aspects of the phenomenon under investigation. Each meaning unit was then labeled with an abstract code that reflected its underlying concept.

Following the coding process, the researchers engaged in constant comparison, systematically reviewing and refining the codes to ensure consistency and coherence. Related codes were grouped based on common characteristics and conceptual similarities, leading to the development of subcategories. These subcategories were further refined and synthesized into broader categories through abstraction, providing a structured and in-depth understanding of the data. This inductive and iterative process allowed for the emergence of themes directly from the data, ensuring that the findings remained grounded in participants' experiences without being constrained by preconceived theoretical frameworks.

Four Lincoln and Guba criteria were used for the data trustworthiness process (21). These criteria include credibility, dependability, conformability, and transferability. The credibility of the present study was confirmed by spending time (about 17 months) collecting data and ensuring the diversity of participants of different ages and genders. Additionally, all members of the research team participated in the data analysis process, and textual data were coded and compared separately.

The dependability of the present study was obtained through peer checking and external experts reviewing the interview process, coding, and analysis. Conformability was ensured through members' checks and verification of codes by participants, as well as through long-term engagement and multiple readings of the interviews.

The transferability of the present study was also established through member checks and sampling with maximum diversity. To increase transferability, the characteristics of participants and the study context were explained in detail, allowing readers to determine whether to apply the results in their desired environment. Finally, the categories extracted from the study were given to two nurses out of the study. They confirmed that the results of our study align closely with their experiences.

This research was approved by the Ethics and Research Committee of Birjand University of Medical Sciences in Birjand, Iran (IR.BUMS.REC.1401.044). After explaining the purpose of the study, participants provided their informed consent by signing a form. They were also informed that they could withdraw from the study at any time. Additionally, participants were made aware that their voices would be recorded and kept confidential solely for the purposes of this study.

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Results

In the present research, the participant demographic consisted of eight females (53%) and seven males (47%). Educationally, two participants held a master's degree (13%), while the majority, thirteen participants (87%), possessed a bachelor's degree. The average work experience among participants was calculated to be 12.23±5.52 years.

Data analysis yielded 347 open codes, which were subsequently organized into six subcategories and three overarching categories. The primary categories identified include:

1. Unprofessional Atmosphere of the Workplace
2. Insufficient Culture of Learning from Near Misses
3. Effects of staff personal life on work-life (Table 2).

Table 2. Categories, subcategories, and condensed open codes

Categories	Subcategories	Condensed Meaning Unit
1. Unprofessional atmosphere of the workplace	1.1.Interpersonal and professional gaps in patient care	- Disruption of professional communication - Unscientific approach to error - Lack of teamwork - Irresponsibility - Lack of staff support for each other - Insufficient knowledge of the patient - Lack of attention to adequate education
	1.2. Non-priority of near-miss events for managers	- Lack of providing appropriate facilities - Non-priority of error prevention - Ignoring the importance of near-miss
2. An insufficient culture of learning from near-miss events	2.1. Weaknesses within the near-miss learning cycle	- Incomplete reporting of near-miss - Inadequate analysis of near-miss - Lack of learning from a minor error
	2.2. Lack of an approved framework for learning from errors	- Inaccurate documentation of near-miss - Inaccessibility to analysis results
3. Effects of staff personal life on work-life	3.1. Workplace stressors and low engagement	- Nurses' stress and anxiety in the workplace - Lack of motivation and dissatisfaction with working conditions - Lack of enough focus on tasks
	3.2. Barriers to nurse-patient communication	- Distrust between patient and nurse - Role of patient dissatisfaction in disrupting interactions

1. Unprofessional Atmosphere of the Workplace

Professionalism in nursing is fundamental to upholding care standards and ensuring the delivery of safe, high-quality healthcare. A lack of professional conduct undermines the quality of care, elevates the risk of patient harm, and contributes to nursing errors and systemic inefficiencies. Conversely, a strong professional identity among nurses enhances clinical practice and decreases the likelihood of errors. According to the majority of participants, nursing in Iran has yet to attain a fully professional status, and the issue of near-miss events remains insufficiently prioritized by healthcare leadership.

1.1. Interpersonal and Professional Gaps in Patient Care

Under the theme of interpersonal and professional gaps in patient care, participants expressed serious concerns regarding the breakdown of professional communication and collaboration among healthcare staff. A recurring issue was the prevalence of an unscientific and reactive approach to error management, reflecting a broader gap in professional accountability. Participants emphasized the need for enhanced teamwork and shared responsibility to advance nursing practice and ensure high-quality patient care. The absence of mutual support among colleagues and instances of staff irresponsibility further compounded these challenges. Additionally, inadequate initial assessments and insufficient understanding of patient conditions were consistently identified as critical factors contributing to clinical errors.

"There is no appropriate communication between the nurse, patient, and other members of the treatment team, and this is the root of many problems and the occurrence of near-misses. In many cases, there is no communication at all about errors (P9) ".

"Many personnel lack an internal commitment to perform their duties and merely aim to complete tasks in any way possible (P 5) ".

1.2. Non-Priority of Near-Miss Events for Managers

Participants consistently emphasized that near-

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miss events are not given sufficient priority by healthcare managers. One key concern was the lack of attention to proper educational initiatives aimed at preventing such incidents. Additionally, the absence of adequate emergency facilities was seen as a reflection of managerial oversight. Participants stressed that error prevention—whether concerning major or minor incidents—should be a fundamental priority within the healthcare system; however, it is frequently overlooked in practice, indicating a systemic undervaluation of proactive safety measures.

*"Unfortunately, our system does not pay enough attention to preventing near-misses and errors; when errors occur, we look for a solution, while the focus should be on preventing incidents before they happen (*P 6*) ".*

"The very important topic is near-miss events and minor errors from which we should learn. Unfortunately, we often disregard these minor errors, thinking that since nothing significant went wrong, it does not matter. However, it is these minor errors that can lead to major incidents (P 11) ".

2. An Insufficient Culture of Learning from Near-Miss Events

Reports of near-miss events offer critical insights into workflow inefficiencies and the overall quality of clinical processes. Each near miss presents a valuable opportunity for system improvement and organizational learning. This category includes two key subcategories: weaknesses within the near-miss learning cycle and the absence of a standardized framework for systematically learning from errors.

2.1. Weaknesses within the Near-Miss Learning Cycle

Participants highlighted significant gaps in the organizational approach to learning from near-miss events. They emphasized that a culture of continuous learning should be embedded throughout the healthcare system to support meaningful education and improvement; however, such an environment is often lacking. A major concern was the insufficient and often superficial analysis of near-miss incidents, which undermines the potential for organizational learning.

"The first step in managing errors is reporting them, but this is often neglected. The continued use of paper-based systems and fear of consequences discourage staff from reporting, leading to underreporting of both near misses and major errors (P 4)".

"The absence of thorough error analysis hinders effective learning and prevention, as understanding root causes is essential for improvement. (p 15)"

2.2. Lack of an Approved Framework for Learning from Errors

According to participants, the absence of a standardized framework for learning from errors significantly hinders the effective use of near-miss data. They emphasized that such a framework must include accurate documentation of near-miss events and ensure the accessible and transparent dissemination of analysis results. The lack of access to these outcomes was identified as a key barrier, limiting opportunities for shared learning and system-wide improvement.

"We do not have the foundational step needed to create effective learning from errors, which is the documentation of near-misses. Near-miss events must be recorded first, and an approved system is required (p 3)".

"Errors analyzed by the organization are not easily accessible, highlighting the need for an established system for documenting and sharing analyses. Such a system would ensure that all personnel can access and record both errors and their corresponding analyses (P 14)".

3. Effects of Staff Personal Life on Work-life

This category examines how personal life stressors impact nurses' professional lives and their ability to perform effectively at work. It consists of two primary subcategories: workplace stressors and low engagement, as well as barriers in nurse-patient communication.

3.1. Workplace Stressors and Low Engagement

Workplace stressors and low engagement reflect how personal issues, such as family concerns or emotional distress, compound the challenges of demanding work environments. These stressors can lead to disengagement, decreased focus, and emotional fatigue, which in turn, contribute to the occurrence of near-miss errors and affect the overall quality of patient care.

"Low motivation among nurses significantly impacts job satisfaction and communication; when both factors are present, the quality of work within the organization declines, leading to an increase in errors (P 2)".

"The high demands of the emergency work environment, compounded by extended shifts and personal challenges, often result in decreased focus on tasks and communications, leading to critical oversights. For instance, during night shifts, errors such as administering the wrong patient's blood can occur (P 9)".

3.2. Barriers in Nurse-Patient Communication

Barriers in nurse-patient communication pertain to how personal stressors and emotional

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exhaustion can impair a nurse's ability to communicate with patients effectively. These communication breakdowns, combined with strained interpersonal dynamics, create an environment where misunderstandings and critical oversights are more likely to occur.

"Many nurses struggle to establish strong relationships with patients, resulting in a lack of trust. This absence of rapport may prevent nurses from fully understanding patients' concerns, potentially leading to various issues and errors (P 2) ".

"Many communication issues between patients and nurses arise from patient dissatisfaction with the treatment system, which negatively impacts interactions. The absence of effective communication often leads to minor errors, exacerbating disruptions in the interaction process (P 12) ".

Discussion

In previous studies, the issue of near-miss events has received limited attention (22). Our study explains nurses' experiences of near-miss. In the present study, the unprofessional atmosphere of the workplace is one of the important categories. The present study aims to elucidate nurses' experiences regarding near-misses. One significant finding in the current study is the identification of an unprofessional workplace atmosphere as an important category. Our study indicates that non-professional nursing practices contribute to nursing errors. In this context, Necmettin İşci (2019) demonstrated that as nursing professionalism increases, the likelihood of nursing errors decreases. Furthermore, nurses who perceive themselves as entirely professional tend to exhibit a lower propensity for nursing errors (23), which aligns with the findings of the present study.

Another important category identified in the current research is the inadequate culture of learning from near-miss events. Rollin J et al. (2008) also reported that near-misses and adverse effects are prevalent among emergency workers. However, a culture characterized by blame and shame, along with a focus on the errors of others, hinders the sharing of vital information (24). As in our study, the insufficient culture of learning from near-miss events, incomplete reporting of near-miss due to issues such as fear and blame by colleagues, and systemic issues such as non-priority of near-miss for managers were emphasized.

The current study also highlights the incomplete reporting of near-misses, distrust between patients and nurses, and inadequate staff support. Reporting issues have been discussed extensively in the literature. Saleh Salimi (2014) identified various barriers to reporting errors, including fears of financial penalties, changes in managerial attitudes, written reprimands, distrust from patients and families, and nurses' skepticism about the reporting system. These findings align with our results (25) . These findings align with our results. Additionally, Dominika Vrbnjak (2016) conducted a systematic review of 38 studies, identifying organizational barriers such as culture, reporting systems, management behavior, and professional barriers like fear and responsibility (26). Similar to our findings, the discussion surrounding error reporting highlighted the need to transition from paper-based to electronic reporting systems, establish networks for reporting and analyzing errors, and address human factors like fear of reporting, management issues, and irresponsibility.

While we did not find a fully relevant study about the third category, Barbara Cohoon (2011) identified causes of near misses that included team factors (inter-team communication), workload factors (distractions, interruptions in care), and staff factors (skill deficits, fatigue, and inadequate staffing) (22). This somewhat aligns with our findings on the unprofessional workplace atmosphere and the challenges associated with patient interactions and nurses' personal experiences. In our study, we discussed factors such as teamwork, communication, interactions, stress, anxiety, and distractions. Furthermore, Mousavi (2018) highlighted the importance of structural culture, teamwork, quality improvement, reporting systems, and trust among medical staff in controlling medical errors (27).

In this regard, Kwak et al. (2024) identify high job stress and excessive overtime as key factors contributing to near-miss errors. Nurses experiencing elevated job stress are more than twice as likely to encounter near-miss errors, particularly those related to falls and medical equipment (28); our study also indicates that nurses experience significant job stress due to the interplay between their professional responsibilities and personal lives, which may impair their ability to focus adequately on their duties.

Marleen Smits (2009) identified the nature and causes of never events, highlighting technical factors (design, structure, materials, and equipment), human factors (knowledge, competence, coordination), and organizational factors (protocols, knowledge transfer, management priorities, culture) (29). Our study found similarities and differences in these factors. For instance, in the technical factors section, we noted a lack of appropriate facilities, while design and structure were not mentioned. In discussing

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human factors, we identified non-professional nursing, insufficient patient knowledge, and inadequate teamwork. Regarding organizational factors, we highlighted the non-priority of near-miss events by managers and the insufficient culture of learning from these events, although the issues of protocols and knowledge transfer were not explicitly addressed. However, we did mention the lack of emphasis on adequate education.

One critical issue emphasized by participants in our study was the inadequate analysis of near misses, including inaccurate documentation, lack of proper analysis, and inaccessible analysis results. According to Jaehee Lee (2021), professional nurses' experiences with near-miss incidents and unreported errors can be understood through several key themes, including diminished cognitive awareness of near misses, ambiguity surrounding the reporting process, inadequate understanding of near-miss events, dissatisfaction with the outcomes of reporting, and fear of potential repercussions (30).

This study highlights the importance of strengthening processes for identifying and reporting near misses in emergency clinical care. By promoting systematic root cause analyses, the research contributes to a deeper understanding of underlying factors, supports organizational learning, and offers practical strategies aimed at reducing the occurrence of near misses and never events.

Coordination with participants proved to be challenging in some instances. Additionally, the lack of adequate motivation among certain nurses to participate in interviews represented another limitation of this study.

Conclusions

The prioritization of professionalism in nursing practice is crucial for enhancing patient safety and improving overall healthcare outcomes. Emphasizing the significance of near-miss events to management is key to fostering a proactive approach to error prevention. Additionally, cultivating a culture that encourages learning from errors, particularly near misses, is vital. This involves creating an environment where reporting is facilitated without fear of retribution and where constructive feedback is regularly provided to staff. Moreover, establishing systematic processes for the thorough analysis of near-miss events allows for identifying root causes and implementing targeted interventions. By focusing on these strategies, healthcare organizations can significantly improve their ability to control and learn from near-miss incidents, ultimately preventing errors and enhancing patient care.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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