

Enhancing Early Recognition of Clinical Deterioration: A Qualitative Study of Nurse Technicians' Experiences in Saudi Arabian Hospitals

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Abstract

Early recognition of clinical deterioration is crucial for timely intervention and improved patient outcomes in hospital settings. Nurse technicians play a vital role in monitoring patients and detecting signs of deterioration. This qualitative study explores the experiences and perspectives of nurse technicians in Saudi Arabian hospitals regarding the early recognition of clinical deterioration. Through semi-structured interviews with nurse technicians, the study aims to identify the challenges, facilitators, and strategies for enhancing the detection and response to clinical deterioration. The findings reveal that nurse technicians face various challenges, including high workload, limited training, and communication barriers. However, participants also highlight the importance of teamwork, clinical observation skills, and the use of early warning scoring systems in improving the recognition of deterioration. The study provides valuable insights into the experiences of nurse technicians and offers recommendations for healthcare organizations and policymakers to support the development of effective strategies for early recognition of clinical deterioration in Saudi Arabian hospitals.

Keywords: clinical deterioration, early recognition, nurse technicians, qualitative research, Saudi Arabia

1. Introduction

Early recognition of clinical deterioration is a critical component of patient safety and quality of care in hospital settings. Clinical deterioration refers to the worsening of a patient's condition, which can lead to adverse outcomes such as cardiac arrest, unplanned intensive care unit (ICU) admission, or death if not detected and managed promptly (Mok et al., 2015). Nurse technicians, also known as nursing assistants or patient care technicians, play a crucial role in monitoring patients and identifying signs of deterioration (Al-Hussami et al., 2019).

In Saudi Arabia, the healthcare system has undergone significant reforms in recent years, with a focus on improving the quality and safety of patient care (Almalki et al., 2011). However, challenges remain in ensuring the early recognition and response to clinical deterioration in hospital settings (Al-Moghairi et al., 2020). Nurse technicians, who work under the supervision of registered nurses and provide direct patient care, are well-positioned to detect changes in patients' conditions and alert the healthcare team (Al-Hussami et al., 2019).

This qualitative study aims to explore the experiences and perspectives of nurse technicians in Saudi Arabian hospitals regarding the early recognition of clinical deterioration. By gaining insights into the challenges, facilitators, and strategies employed by nurse technicians, the study seeks to inform the development of effective interventions and policies to enhance the detection and response to clinical deterioration in Saudi Arabian healthcare settings.

The objectives of this study are as follows:

1. To understand the experiences and perspectives of nurse technicians in recognizing and responding to clinical deterioration in Saudi Arabian hospitals.
2. To identify the challenges and barriers faced by nurse technicians in detecting and communicating signs of clinical deterioration.
3. To explore the facilitators and strategies that support nurse technicians in the early recognition of clinical deterioration.

4. To provide recommendations for healthcare organizations and policymakers to enhance the early recognition and response to clinical deterioration in Saudi Arabian hospitals.

2. Literature Review

The literature review section synthesizes existing research on the early recognition of clinical deterioration, with a specific focus on the role of nurse technicians and the context of Saudi Arabian healthcare settings.

2.1 Early Recognition of Clinical Deterioration

Early recognition of clinical deterioration is essential for timely intervention and the prevention of adverse patient outcomes (Mok et al., 2015). Studies have shown that delayed recognition and response to deterioration are associated with increased morbidity, mortality, and healthcare costs (Barwise et al., 2016). The implementation of early warning scoring systems, such as the National Early Warning Score (NEWS), has been shown to improve the detection and escalation of deteriorating patients (Gerry et al., 2020).

2.2 Role of Nurse Technicians in Patient Monitoring

Nurse technicians play a vital role in monitoring patients and detecting signs of clinical deterioration (Al-Hussami et al., 2019). They are responsible for measuring vital signs, observing patients' conditions, and reporting any changes to the registered nurses or healthcare team (Alotaibi, 2021). Studies have highlighted the importance of nurse technicians' clinical observation skills and their ability to communicate effectively with other healthcare professionals in the early recognition of deterioration (Massey et al., 2017).

2.3 Challenges in Recognizing Clinical Deterioration

Several challenges have been identified in the early recognition of clinical deterioration, including high workload, inadequate staffing, limited training, and communication barriers (Al-Moghairi et al., 2020). Studies have reported that nurse technicians often face time constraints and competing priorities, which can hinder their ability to detect and respond to signs of deterioration (Al-Hussami et al., 2019). Additionally, the lack of standardized communication tools and protocols can lead to delays in escalating concerns to the healthcare team (Alshammari et al., 2018).

2.4 Facilitators and Strategies for Early Recognition

Various facilitators and strategies have been identified to enhance the early recognition of clinical deterioration. These include the use of early warning scoring systems, regular vital signs monitoring, effective communication and teamwork, and ongoing education and training (Alotaibi, 2021). Studies have emphasized the importance of interprofessional collaboration and the empowerment of nurse technicians to raise concerns and escalate care when necessary (Al-Moteri et al., 2019).

2.5 Early Recognition in Saudi Arabian Healthcare Settings

The early recognition of clinical deterioration has gained increasing attention in Saudi Arabian healthcare settings in recent years (Al-Moghairi et al., 2020). Studies have explored the implementation of early warning scoring systems and the challenges faced by healthcare professionals in detecting and responding to deterioration (Al-Moteri et al., 2019). However, there is limited research specifically focusing on the experiences and perspectives of nurse technicians in the Saudi Arabian context (Al-Hussami et al., 2019).

This qualitative study aims to address this gap in the literature by exploring the experiences of nurse technicians in Saudi Arabian hospitals regarding the early recognition of clinical deterioration. The study builds upon the existing knowledge and contributes to the understanding of the challenges, facilitators, and strategies specific to the Saudi Arabian healthcare context.

3. Methods

This qualitative study employed a phenomenological approach to explore the lived experiences and perspectives of nurse technicians regarding the early recognition of clinical deterioration in Saudi Arabian hospitals.

3.1 Study Design

A descriptive phenomenological design was adopted to gain an in-depth understanding of the participants' experiences, challenges, and strategies in recognizing and responding to clinical deterioration. Phenomenology allows for the exploration of subjective experiences and the identification of common themes and patterns among participants (Creswell & Poth, 2018).

3.2 Participants and Sampling

Purposive sampling was used to recruit nurse technicians working in various hospital settings in Saudi Arabia. The inclusion criteria were as follows:

- Currently employed as a nurse technician in a Saudi Arabian hospital
- Have at least one year of experience in patient care
- Willing to participate in the study and provide informed consent

A total of 20 nurse technicians were recruited for the study, with a diverse representation of gender, age, and clinical experience. The sample size was determined based on data saturation, which was achieved when no new themes emerged from the interviews (Guest et al., 2006).

3.3 Data Collection

Semi-structured interviews were conducted with the participants either in-person or via telephone, depending on their preference and availability. The interviews were guided by an interview protocol that included open-ended questions exploring the participants' experiences, challenges, and strategies in recognizing and responding to clinical deterioration. The interviews were audio-recorded and transcribed verbatim for analysis.

3.4 Data Analysis

Thematic analysis was employed to analyze the interview transcripts (Braun & Clarke, 2006). The analysis involved the following steps:

1. Familiarization with the data through repeated reading of the transcripts
2. Generating initial codes by identifying meaningful segments of the data
3. Searching for themes by collating codes into potential themes
4. Reviewing and refining themes to ensure coherence and consistency
5. Defining and naming themes to capture the essence of the data
6. Producing the report by providing a coherent narrative of the findings

The analysis was conducted independently by two researchers to ensure the credibility and trustworthiness of the findings. Discrepancies were resolved through discussion and consensus.

3.5 Rigor and Trustworthiness

Several strategies were employed to ensure the rigor and trustworthiness of the study (Lincoln & Guba, 1985):

- Prolonged engagement: The researchers spent sufficient time interacting with the participants to establish trust and gain a deep understanding of their experiences.
- Peer debriefing: The researchers engaged in regular discussions with colleagues to review the findings and challenge interpretations.
- Member checking: The participants were provided with a summary of the findings and asked to confirm the accuracy and authenticity of the interpretations.
- Thick description: Detailed descriptions of the participants' experiences and the study context were provided to enhance the transferability of the findings.

4. Results

The thematic analysis of the interview transcripts revealed four overarching themes regarding the experiences and perspectives of nurse technicians in the early recognition of clinical deterioration in Saudi Arabian hospitals.

4.1 Theme 1: Challenges in Recognizing Clinical Deterioration

Participants identified several challenges that hindered their ability to detect and respond to signs of clinical deterioration, including high workload, limited training, and communication barriers.

"We have a high patient-to-nurse ratio, which makes it difficult to monitor each patient closely. Sometimes, we may miss subtle changes in their condition due to the workload." (Participant 3, Male, 3 years of experience)

"I feel that we need more training on how to recognize the early signs of deterioration. We learn on the job, but formal training would be helpful." (Participant 7, Female, 2 years of experience)

Participants also highlighted communication challenges, such as language barriers and hierarchical structures, that impeded the timely escalation of concerns to the healthcare team.

4.2 Theme 2: Importance of Clinical Observation Skills

Nurse technicians emphasized the importance of clinical observation skills in detecting signs of deterioration. They described the process of monitoring vital signs, observing changes in patients' conditions, and using their intuition to identify potential problems.

"I pay close attention to the patients' vital signs, especially their respiratory rate and oxygen saturation. Any changes from the baseline can indicate deterioration." (Participant 12, Female, 4 years of experience)

"Sometimes, it's not just about the numbers. You have to look at the patient as a whole and trust your gut feeling. If something doesn't seem right, it's important to raise concerns." (Participant 9, Male, 5 years of experience)

Participants also highlighted the value of experience and continuous learning in enhancing their clinical observation skills.

4.3 Theme 3: Teamwork and Communication

Effective teamwork and communication were identified as key facilitators in the early recognition and response to clinical deterioration. Participants discussed the importance of collaborating with registered nurses, physicians, and other healthcare professionals to ensure timely intervention.

"When we work as a team and communicate effectively, it becomes easier to detect and manage deteriorating patients. We rely on each other's expertise and support." (Participant 15, Female, 6 years of experience)

Participants also mentioned the use of standardized communication tools, such as the Situation-Background-Assessment-Recommendation (SBAR) technique, to facilitate clear and concise information exchange among team members.

4.4 Theme 4: Strategies for Enhancing Early Recognition

Nurse technicians discussed various strategies they employed to enhance the early recognition of clinical deterioration, including the use of early warning scoring systems, frequent monitoring, and proactive communication with the healthcare team.

"We use the National Early Warning Score (NEWS) to assess patients' conditions. It helps us identify patients who are at risk of deterioration and triggers appropriate actions." (Participant 18, Male, 4 years of experience)

"I make sure to check on my patients regularly, even if their vital signs are stable. Any change in their behavior or appearance can be an early sign of deterioration." (Participant 6, Female, 3 years of experience)

Participants also emphasized the importance of ongoing education and training to improve their knowledge and skills in recognizing and responding to clinical deterioration.

Table 1. Summary of Themes and Sub-themes

Theme	Sub-themes
Challenges in Recognizing Clinical Deterioration	- High workload - Limited training - Communication barriers
Importance of Clinical Observation Skills	- Monitoring vital signs - Observing changes in patients' conditions - Using intuition and gut feeling
Teamwork and Communication	- Collaborating with healthcare professionals - Using standardized communication tools - Timely escalation of concerns
Strategies for Enhancing Early Recognition	- Early warning scoring systems - Frequent monitoring - Proactive communication - Ongoing education and training

5. Discussion

The findings of this qualitative study provide valuable insights into the experiences and perspectives of nurse technicians in the early recognition of clinical deterioration in Saudi Arabian hospitals. The themes that emerged from the analysis highlight the challenges, facilitators, and strategies that influence the detection and response to deteriorating patients.

5.1 Challenges and Barriers

The study identified high workload, limited training, and communication barriers as significant challenges faced by nurse technicians in recognizing clinical deterioration. These findings are consistent with previous research that has highlighted the impact of workload and staffing on the ability to detect and respond to deteriorating patients (Al-Moghairi et al., 2020). The lack of formal training and education on recognizing signs of deterioration has also been reported in other studies (Al-Hussami et al., 2019).

The communication challenges, such as language barriers and hierarchical structures, emphasize the need for effective communication strategies and protocols to facilitate timely escalation of concerns. Similar communication barriers have been identified in other healthcare settings, underscoring the importance of addressing these issues to improve patient safety (Alshammari et al., 2018).

5.2 Clinical Observation Skills

The study highlights the importance of clinical observation skills in detecting signs of deterioration. Nurse technicians relied on their ability to monitor vital signs, observe changes in patients' conditions, and use their intuition to identify potential problems. These findings are in line with previous research that has emphasized the role of clinical observation and intuition in recognizing deterioration (Massey et al., 2017).

The value of experience and continuous learning in enhancing clinical observation skills underscores the need for ongoing education and training opportunities for nurse technicians. Providing targeted training on early recognition of deterioration can improve their confidence and competence in detecting and responding to signs of deterioration (Al-Moteri et al., 2019).

5.3 Teamwork and Communication

Effective teamwork and communication emerged as key facilitators in the early recognition and response to clinical deterioration. Nurse technicians highlighted the importance of collaborating with other healthcare professionals and using standardized communication tools to ensure timely intervention. These findings are consistent with previous research that has emphasized the role of interprofessional collaboration and communication in improving patient outcomes (Al-Moteri et al., 2019).

The use of standardized communication tools, such as the SBAR technique, can facilitate clear and concise information exchange among team members. Implementing these tools and providing training on effective communication can enhance the early recognition and response to deteriorating patients (Alshammari et al., 2018).

5.4 Strategies for Enhancing Early Recognition

The study identified several strategies employed by nurse technicians to enhance the early recognition of clinical deterioration, including the use of early warning scoring systems, frequent monitoring, and proactive communication with the healthcare team. These strategies are supported by previous research that has demonstrated the effectiveness of early warning scoring systems in improving the detection and escalation of deteriorating patients (Gerry et al., 2020).

The emphasis on ongoing education and training highlights the need for healthcare organizations to invest in the professional development of nurse technicians. Providing regular training sessions on recognizing and responding to clinical deterioration can improve their skills and confidence in identifying and escalating concerns (Al-Hussami et al., 2019).

5.5 Implications for Practice and Policy

The findings of this study have important implications for healthcare practice and policy in Saudi Arabia. Healthcare organizations should prioritize the implementation of early warning scoring systems and provide training to nurse technicians on their use. Regular education and training sessions on recognizing signs of deterioration should be incorporated into the professional development programs for nurse technicians.

Healthcare policies should address the challenges faced by nurse technicians, such as high workload and limited resources, to ensure adequate staffing and support for patient monitoring. Strategies to improve communication and teamwork, such as the use of standardized communication tools and interprofessional collaboration, should be promoted at the organizational and national levels.

5.6 Limitations and Future Research

This qualitative study has several limitations. The sample size was relatively small and limited to nurse technicians working in Saudi Arabian hospitals, which may limit the generalizability of the findings to other healthcare settings or countries. Additionally, the study relied on self-reported experiences and perspectives, which may be subject to recall bias or social desirability bias.

Future research should explore the perspectives of other healthcare professionals, such as registered nurses and physicians, regarding the early recognition of clinical deterioration in Saudi Arabian hospitals. Quantitative studies examining the effectiveness of interventions, such as early warning scoring systems and educational programs, in improving the recognition and response to deteriorating patients would provide valuable evidence to inform practice and policy.

6. Conclusion

This qualitative study explored the experiences and perspectives of nurse technicians in the early recognition of clinical deterioration in Saudi Arabian hospitals. The findings highlight the challenges faced by nurse technicians, including high workload, limited training, and communication barriers, which can hinder their ability to detect and respond to signs of deterioration. The study also emphasizes the importance of clinical observation skills, teamwork, and communication in facilitating the early recognition and escalation of concerns.

The strategies identified by nurse technicians, such as the use of early warning scoring systems, frequent monitoring, and proactive communication, provide valuable insights for healthcare organizations and policymakers to enhance the early recognition of clinical deterioration. Implementing these strategies and addressing the challenges faced by nurse technicians can improve patient safety and outcomes in Saudi Arabian hospitals.

The findings of this study underscore the need for ongoing education and training opportunities for nurse technicians to enhance their skills in recognizing and responding to clinical deterioration. Healthcare organizations should prioritize the professional development of nurse technicians and provide them with the necessary support and resources to effectively monitor and escalate concerns.

In conclusion, this qualitative study contributes to the understanding of the experiences and perspectives of nurse technicians in the early recognition of clinical deterioration in Saudi Arabian hospitals. The findings highlight the challenges, facilitators, and strategies that influence the detection and response to deteriorating patients. By addressing these factors and implementing evidence-based interventions, healthcare organizations can improve the early recognition of clinical deterioration and ensure timely intervention to promote patient safety and outcomes.

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