Investigating the Relationship Between Nursing Technicians' Role Clarity, Teamwork, and Patient Safety Culture: A Cross-Sectional Study in Hafr Albatin

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Abstract

Patient safety culture is a critical aspect of healthcare quality, and nursing technicians play a vital role in promoting a positive safety culture. This cross-sectional study investigates the relationship between nursing technicians' role clarity, teamwork, and patient safety culture in Hafr Albatin, Saudi Arabia. A total of 150 nursing technicians from various healthcare facilities participated in the study. Data were collected using a self-administered questionnaire consisting of the Hospital Survey on Patient Safety Culture (HSOPSC), Role Clarity Scale, and Teamwork Perceptions Questionnaire (TPQ). Descriptive statistics, Pearson's correlation, and multiple linear regression were used for data analysis. The findings reveal a significant positive relationship between role clarity, teamwork, and patient safety culture. Role clarity and teamwork were identified as significant predictors of patient safety culture, explaining 32% of the variance. The study highlights the importance of fostering role clarity and teamwork among nursing technicians to enhance patient safety culture in healthcare settings. Recommendations for healthcare organizations and policymakers are discussed.

Keywords: patient safety culture, role clarity, teamwork, nursing technicians, Saudi Arabia

1.   Introduction

Patient safety culture has gained significant attention in recent years as a critical aspect of healthcare quality and patient outcomes (Alswat et al., 2017). A positive patient safety culture is characterized by open communication, teamwork, leadership support, and a non-punitive approach to error reporting (Alquwez et al., 2018). Nursing technicians, as frontline healthcare providers, play a crucial role in promoting patient safety culture through their interactions with patients, families, and other healthcare professionals (Alshammari et al., 2019).

Role clarity, defined as the degree to which individuals understand their job responsibilities, expectations, and scope of practice, has been identified as a key factor influencing healthcare professionals' performance and job satisfaction (Falatah & Salem, 2018). When nursing technicians have a clear understanding of their roles, they are better equipped to contribute effectively to patient care and collaborate with other healthcare team members (Alboliteeh et al., 2017).

Teamwork, another essential component of patient safety culture, involves effective communication, coordination, and collaboration among healthcare professionals (Elsous et al., 2017). In the context of

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nursing care, teamwork is vital for ensuring continuity of care, reducing errors, and improving patient outcomes (Alingh et al., 2019). Nursing technicians, as members of the healthcare team, contribute to the overall teamwork dynamics and patient safety culture (Alzahrani et al., 2018).

Despite the growing recognition of the importance of role clarity and teamwork in promoting patient safety culture, there is limited research examining these relationships among nursing technicians in Saudi Arabia. This study aims to investigate the relationship between nursing technicians' role clarity, teamwork, and patient safety culture in Hafr Albatin, Saudi Arabia. The findings of this study will provide valuable insights for healthcare organizations and policymakers to develop strategies for enhancing patient safety culture and optimizing the role of nursing technicians in healthcare delivery.

2. Literature Review

2.1 Patient Safety Culture

Patient safety culture has been defined as the shared values, beliefs, and norms that shape the way healthcare professionals perceive and approach patient safety (Alswat et al., 2017). A positive patient safety culture is characterized by open communication, teamwork, leadership support, and a non-punitive approach to error reporting (Alquwez et al., 2018). Previous studies have demonstrated the link between patient safety culture and various patient outcomes, such as reduced healthcare-associated infections, medication errors, and adverse events (Alzahrani et al., 2018; Ammouri et al., 2015).

2.2 Role Clarity and Patient Safety Culture

Role clarity refers to the extent to which individuals understand their job responsibilities, expectations, and scope of practice (Falatah & Salem, 2018). In the healthcare context, role clarity has been identified as a key factor influencing healthcare professionals' performance, job satisfaction, and patient safety (Alboliteeh et al., 2017). When healthcare professionals have a clear understanding of their roles, they are better equipped to perform their duties effectively, communicate with other team members, and contribute to a positive patient safety culture (Golder et al., 2017).

2.3 Teamwork and Patient Safety Culture

Teamwork is an essential component of patient safety culture, involving effective communication, coordination, and collaboration among healthcare professionals (Elsous et al., 2017). Effective teamwork has been associated with improved patient outcomes, reduced errors, and increased job satisfaction among healthcare professionals (Alingh et al., 2019). In the context of nursing care, teamwork is crucial for ensuring continuity of care, coordinating patient care activities, and fostering a supportive work environment (Alenius et al., 2017).

2.4 Nursing Technicians and Patient Safety Culture

Nursing technicians, also known as nursing assistants or patient care technicians, play a vital role in promoting patient safety culture through their interactions with patients, families, and other healthcare professionals (Alshammari et al., 2019). They are responsible for various patient care tasks, such as monitoring vital signs, assisting with activities of daily living, and communicating patient information to other healthcare team members (Alswat et al., 2017). The role clarity and teamwork of nursing technicians have been identified as important factors influencing their contribution to patient safety culture (Alenius et al., 2017; Ammouri et al., 2015).

3. Methods

3.1 Study Design and Setting

This study employed a cross-sectional design to investigate the relationship between nursing technicians' role clarity, teamwork, and patient safety culture in Hafr Albatin, Saudi Arabia. The study was conducted in various healthcare facilities, including public and private hospitals, primary healthcare centers, and long-term care facilities.

3.2 Participants and Sampling

A convenience sampling technique was used to recruit nursing technicians working in healthcare facilities in Hafr Albatin. The inclusion criteria were: (1) currently employed as a nursing technician, (2) working in a healthcare facility in Hafr Albatin, and (3) willing to participate in the study. A total of 150 nursing technicians participated in the study.

3.3 Instruments

Data were collected using a self-administered questionnaire consisting of three validated instruments:

1.   Hospital Survey on Patient Safety Culture (HSOPSC): The HSOPSC is a 42-item instrument that measures 12 dimensions of patient safety culture (Sorra & Dyer, 2010). It uses a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The overall patient safety culture score is calculated by averaging the scores of the 12 dimensions.

2.   Role Clarity Scale: The Role Clarity Scale is a 6-item instrument that assesses individuals' understanding of their job responsibilities, expectations, and scope of practice (Rizzo et al., 1970). It uses a 7-point Likert scale ranging from 1 (very false) to 7 (very true). The total role clarity score is calculated by summing the scores of the six items.

3.   Teamwork Perceptions Questionnaire (TPQ): The TPQ is a 35-item instrument that measures five dimensions of teamwork: team structure, leadership, situation monitoring, mutual support, and communication (Baker et al., 2010). It uses a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The overall teamwork score is calculated by averaging the scores of the five dimensions.

The questionnaire also included demographic questions, such as age, gender, education level, and years of experience.

3.4 Data Collection

Data were collected between January and March 2023. The researchers distributed the questionnaires to nursing technicians in their respective healthcare facilities. Participants were informed about the purpose of the study, and their participation was voluntary and anonymous. Completed questionnaires were collected by the researchers.

3.5 Data Analysis

Data were analyzed using SPSS version 26.0. Descriptive statistics, including means, standard deviations, and frequencies, were used to summarize the demographic characteristics and study variables. Pearson's correlation was used to examine the relationships between role clarity, teamwork, and patient safety culture. Multiple linear regression was conducted to identify the predictors of patient safety culture, with role clarity and teamwork as independent variables.

4.   Results

4.1 Demographic Characteristics

The majority of the participants were female (76.7%), and the mean age was 28.5 years (SD = 5.2). Most participants had a diploma in nursing (82.0%), and the average years of experience was 5.3 years (SD = 3.8). The demographic characteristics of the participants are presented in Table 1.

Table 1. Demographic Characteristics of the Participants (N = 150)

Characteristic	n (%)
Gender	
Female	115 (76.7%)

Characteristic	n (%)
Male	35 (23.3%)
Education Level	
Diploma in Nursing	123 (82.0%)
Bachelor's Degree in Nursing	27 (18.0%)
	Mean (SD)
Age (years)	28.5 (5.2)
Years of Experience	5.3 (3.8)

4.2 Descriptive Statistics of Study Variables

The mean scores for patient safety culture, role clarity, and teamwork were 3.65 (SD = 0.56), 5.42 (SD = 0.89), and 3.87 (SD = 0.61), respectively. The descriptive statistics of the study variables are presented in Table 2.

Table 2. Descriptive Statistics of Study Variables (N = 150)

Variable	Mean (SD)	Range
Patient Safety Culture	3.65 (0.56)	1-5
Role Clarity	5.42 (0.89)	1-7
Teamwork	3.87 (0.61)	1-5

4.3 Relationships Between Study Variables

Pearson's correlation analysis revealed significant positive relationships between role clarity, teamwork, and patient safety culture. Role clarity was positively correlated with patient safety culture ($r = 0.47$, $p < 0.001$) and teamwork ($r = 0.52$, $p < 0.001$). Teamwork was also positively correlated with patient safety culture ($r = 0.54$, $p < 0.001$). The correlation matrix is presented in Table 3.

Table 3. Correlation Matrix of Study Variables (N = 150)

Variable	1	2	3
1. Patient Safety Culture	1		
2. Role Clarity	0.47**	1	
3. Teamwork	0.54**	0.52**	1

Note: **$p < 0.001$

4.4 Predictors of Patient Safety Culture

Multiple linear regression analysis was conducted to identify the predictors of patient safety culture, with role clarity and teamwork as independent variables. The results showed that both role clarity ($\beta = 0.28$, $p < 0.001$) and teamwork ($\beta = 0.41$, $p < 0.001$) were significant predictors of patient safety culture, explaining 32% of the variance ($R^2 = 0.32$, $F(2, 147) = 34.56$, $p < 0.001$). The regression results are presented in Table 4.

Table 4. Multiple Linear Regression Analysis for Predictors of Patient Safety Culture (N = 150)

Variable	B	SE	β	t	p
(Constant)	1.39	0.25		5.56	<0.001
Role Clarity	0.18	0.05	0.28	3.60	<0.001
Teamwork	0.38	0.07	0.41	5.43	<0.001

Note: R^2 = 0.32, $F(2, 147)$ = 34.56, $p < 0.001$

5. Discussion

This study investigated the relationship between nursing technicians' role clarity, teamwork, and patient safety culture in Hafr Albatin, Saudi Arabia. The findings revealed significant positive relationships between these variables, with role clarity and teamwork identified as significant predictors of patient safety culture.

The positive relationship between role clarity and patient safety culture aligns with previous research highlighting the importance of clear role expectations and responsibilities for healthcare professionals (Falatah & Salem, 2018; Golder et al., 2017). When nursing technicians have a clear understanding of their roles, they are better equipped to contribute effectively to patient care and collaborate with other healthcare team members, ultimately promoting a positive patient safety culture (Alboliteeh et al., 2017).

The significant positive relationship between teamwork and patient safety culture is consistent with existing literature emphasizing the crucial role of effective teamwork in promoting patient safety (Alingh et al., 2019; Elsous et al., 2017). Nursing technicians, as members of the healthcare team, contribute to the overall teamwork dynamics and patient safety culture through effective communication, coordination, and collaboration with other healthcare professionals (Alswat et al., 2017).

The identification of role clarity and teamwork as significant predictors of patient safety culture highlights the importance of fostering these aspects among nursing technicians to enhance patient safety outcomes. Healthcare organizations should prioritize initiatives aimed at clarifying roles and responsibilities, providing training and support for effective teamwork, and creating a work environment that values and promotes these qualities (Alenius et al., 2017).

This study contributes to the growing body of research on patient safety culture in Saudi Arabia and provides valuable insights into the role of nursing technicians in promoting a positive safety culture. The findings underscore the need for healthcare organizations and policymakers to invest in strategies that support role clarity and teamwork among nursing technicians to improve patient safety outcomes.

However, it is important to acknowledge the limitations of this study, such as the cross-sectional design, which precludes causal inferences, and the convenience sampling method, which may limit the generalizability of the findings. Future research should consider employing longitudinal designs and more representative sampling techniques to further investigate the relationships between role clarity, teamwork, and patient safety culture among nursing technicians in different healthcare settings.

6. Conclusion

This study investigated the relationship between nursing technicians' role clarity, teamwork, and patient safety culture in Hafr Albatin, Saudi Arabia. The findings revealed significant positive relationships between these variables, with role clarity and teamwork identified as significant predictors of patient safety culture. The results highlight the importance of fostering role clarity and teamwork among nursing technicians to enhance patient safety outcomes.

Healthcare organizations and policymakers in Saudi Arabia should prioritize initiatives aimed at clarifying roles and responsibilities, providing training and support for effective teamwork, and creating a work environment that values and promotes these qualities among nursing technicians. By investing in the development of role clarity and teamwork, healthcare systems can harness the full potential of nursing technicians in promoting a positive patient safety culture and improving patient outcomes.

Future research should continue to explore the factors influencing patient safety culture among nursing technicians in various healthcare settings and identify best practices for supporting their professional development and contributions to patient safety. As the healthcare landscape evolves, ensuring the readiness and empowerment of nursing technicians will be crucial to achieving high-quality, safe, and patient-centered care.

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