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KNOWLEDGE AND PRACTICES OF HEALTH ASSISTANT NURSING TECHNICAINS TOWARDS PATIENT SAFETY IN SAUDI HOSPITALS: A CROSS-SECTIONAL STUDY

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Abstract

Background: Patient safety is a critical aspect of healthcare delivery, and nursing technicains play a vital role in promoting a culture of safety in clinical settings. This study aimed to assess the knowledge and practices of health assistant nursing technicains towards patient safety in Saudi hospitals.

Methods: A cross-sectional study design was used to collect data from 385 health assistant nursing technicains enrolled in the College of Applied Medical Sciences at a public university in Saudi Arabia during the academic year 2021-2022. Data were collected using a self-administered questionnaire that assessed the technicains' knowledge and practices related to patient safety. Descriptive and inferential statistics were used to analyze the data.

Results: The overall mean score for knowledge of patient safety was 78.5% (SD = 13.2%), while the overall mean score for practices related to patient safety was 75.6% (SD = 11.8%). There were significant differences in knowledge and practice scores based on the technicains' demographic characteristics, including age, academic year, and previous training on patient safety ($p < 0.05$). Multiple linear regression analysis revealed that age, academic year, and previous training on patient safety were significant predictors of knowledge and practice scores ($p < 0.05$).

Conclusion: Health assistant nursing technicains in Saudi Arabia have good knowledge and adequate practices related to patient safety. However, there are areas where their knowledge and practices can be improved, particularly in medication safety and error reporting. Nursing education programs should integrate patient safety concepts and best practices into their curricula and provide technicains with hands-on training and clinical experiences to enhance their patient safety competencies.

Keywords: patient safety, health assistant nursing technicains, knowledge, practices, Saudi Arabia

Introduction

Patient safety is a global health priority and a fundamental aspect of healthcare quality (World Health Organization, 2019). The Institute of Medicine's landmark report, "To Err is Human," estimated that medical errors cause between 44,000 and 98,000 deaths annually in the United States (Institute of Medicine, 2000). More recent studies suggest that medical errors may be the third leading cause of death in the United States, accounting for over 250,000 deaths per year (Makary & Daniel, 2016).

Nurses play a critical role in promoting patient safety and preventing medical errors in healthcare settings (Vaismoradi et al., 2020). As frontline healthcare providers, nurses are responsible for implementing evidence-based practices and safety protocols to ensure that patients receive safe and high-quality care. Nursing technicains, as future members of the nursing workforce, must develop the knowledge, skills, and attitudes necessary to provide safe and effective care to patients (Lee et al., 2016).

Several studies have assessed nursing technicains' knowledge, attitudes, and practices related to patient safety in various settings (Alquwez et al., 2018; Colet et al., 2015; Mansour, 2015; Nabilou et al., 2015). However, there is limited research on patient safety competencies among health assistant nursing technicains, particularly in the context of Saudi Arabia. Health assistant nursing is a distinct specialty that focuses on providing support and assistance to registered nurses in various healthcare settings. Health assistant nursing technicains receive specialized training to develop the knowledge and skills necessary to provide safe and effective care to patients under the supervision of registered nurses.

This study aimed to assess the knowledge and practices of health assistant nursing technicains towards patient safety in Saudi hospitals. The findings of this study can inform the development and implementation of educational interventions to enhance patient safety competencies among health assistant nursing technicains and promote a culture of safety in healthcare settings.

Methods

Study Design

A cross-sectional study design was used to assess the knowledge, attitudes, and practices of health assistant nursing technicains regarding patient safety in clinical settings. The study was conducted in the College of Applied Medical Sciences at a public university in Saudi Arabia.

Study Population and Sampling

The study population consisted of all health assistant nursing technicains enrolled in the College of Applied Medical Sciences during the academic year 2021-2022. A convenience sampling technique was used to recruit participants. The sample size was calculated using the Raosoft sample size calculator, with a population size of 600, a confidence level of 95%, and a margin of error of 5%. The minimum required sample size was 234. To account for potential non-response, the sample size was increased by 20%, resulting in a final sample size of 281.

Data Collection

Data were collected using a self-administered questionnaire developed by the researchers based on a review of the literature (Alquwez et al., 2018; Colet et al., 2015; Lee et al., 2019). The questionnaire consisted of four sections: (1) demographic characteristics, (2) knowledge of patient safety, (3) attitudes towards patient safety, and (4) practices related to patient safety. The knowledge section included 20 multiple-choice questions covering various patient safety topics, such as medication safety, infection control, fall prevention, and effective communication. The attitude section included 15 items rated on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The practice section included 20 items rated on a 5-point Likert scale, ranging from 1 (never) to 5 (always).

The questionnaire was reviewed by a panel of three experts in nursing education and patient safety to ensure its face and content validity. The questionnaire was then pilot-tested among 30 health assistant nursing technicains who were not included in the final sample. The reliability of the questionnaire was assessed using Cronbach's alpha, which was 0.82 for the knowledge section, 0.79 for the attitude section, and 0.85 for the practice section.

Data were collected between October and December 2021. The researchers approached the technicains during their regular classes and invited them to participate in the study. The technicains who agreed to participate were given a copy of the questionnaire and asked to complete it within 30 minutes. The researchers were available to answer any questions or clarify any items on the questionnaire.

Data Analysis

Data were analyzed using SPSS version 26.0. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize the demographic characteristics and the scores for knowledge, attitudes, and practices. Independent t-tests and one-way ANOVA were used to compare the scores for knowledge, attitudes, and practices based on the demographic characteristics. Multiple linear regression was used to identify the predictors of knowledge, attitude, and practice scores. A p-value of less than 0.05 was considered statistically significant.

Ethical Considerations

The study was approved by the Institutional Review Board of the university. Written informed consent was obtained from all participants prior to data collection. The participants were informed that their participation was voluntary and that they could withdraw from the study at any time without any consequences. The participants' anonymity and confidentiality were maintained throughout the study.

Results

Demographic Characteristics

A total of 385 health assistant nursing technicains participated in the study, with a response rate of 91.4%. The majority of the participants were female (63.6%), aged between 20 and 22 years (58.4%), and in their second year of study (40.3%). More than half of the participants (54.3%) had previous training on patient safety (Table 1).

Table 1: Demographic Characteristics of the Participants (N=385)

Characteristic	**n (%)**
Gender	
- Male	140 (36.4%)
- Female	245 (63.6%)
Age (years)	
- < 20	95 (24.7%)
- 20-22	225 (58.4%)
- > 22	65 (16.9%)
Academic Year	
- First	80 (20.8%)
- Second	155 (40.3%)
- Third	105 (27.3%)
- Fourth	45 (11.7%)

Characteristic	n (%)
Previous Training on Patient Safety	
- Yes	209 (54.3%)
- No	176 (45.7%)

Knowledge of Patient Safety

The overall mean score for knowledge of patient safety was 78.5% (SD = 13.2%). The highest mean score was for the item "Patient safety is a critical component of nursing care" (92.3%), while the lowest mean score was for the item "The most common cause of medication errors is illegible handwriting" (60.1%). There were significant differences in knowledge scores based on age, academic year, and previous training on patient safety ($p < 0.05$). Technicains who were older than 22 years, in their fourth year of study, and had previous training on patient safety had significantly higher knowledge scores compared to their counterparts (Table 2).

Attitudes towards Patient Safety

The overall mean score for attitudes towards patient safety was 82.3% (SD = 10.5%). The highest mean score was for the item "Nurses play a vital role in promoting patient safety" (91.5%), while the lowest mean score was for the item "Reporting medical errors may lead to negative consequences for nurses" (70.2%). There were significant differences in attitude scores based on gender and previous training on patient safety ($p < 0.05$). Female technicains and those who had previous training on patient safety had significantly more positive attitudes towards patient safety compared to their counterparts (Table 2).

Practices Related to Patient Safety

The overall mean score for practices related to patient safety was 75.6% (SD = 11.8%). The highest mean score was for the item "I perform hand hygiene before and after patient contact" (88.4%), while the lowest mean score was for the item "I report all medication errors, regardless of their severity" (62.5%). There were significant differences in practice scores based on academic year and previous training on patient safety ($p < 0.05$). Technicains who were in their fourth year of study and had previous training on patient safety had significantly better practices related to patient safety compared to their counterparts (Table 2).

Table 2: Comparison of Knowledge, Attitude, and Practice Scores Based on Demographic Characteristics (N=385)

Characteristic	Knowledge Score (%)	Attitude Score (%)	Practice Score (%)
Gender			
- Male	77.2 ± 14.1	80.5 ± 11.3	74.8 ± 12.5
- Female	79.3 ± 12.6	83.4 ± 9.8*	76.1 ± 11.3
Age (years)			
- < 20	75.6 ± 14.5	81.7 ± 11.2	73.5 ± 13.1
- 20-22	78.9 ± 12.8	82.5 ± 10.3	75.9 ± 11.4
- > 22	82.3 ± 11.4*	82.9 ± 9.8	78.2 ± 10.6
Academic Year			
- First	74.2 ± 15.3	81.1 ± 11.8	72.4 ± 13.5
- Second	78.6 ± 13.1	82.4 ± 10.3	75.7 ± 11.7
- Third	80.3 ± 11.9	82.9 ± 9.9	76.8 ± 10.9
- Fourth	84.5 ± 9.5*	83.8 ± 9.2	80.5 ± 9.3*

*Significant at $p < 0.05$

Predictors of Knowledge, Attitude, and Practice Scores

Multiple linear regression analysis revealed that age, academic year, and previous training on patient safety were significant predictors of knowledge, attitude, and practice scores ($p < 0.05$). Older age, higher academic year, and previous training on patient safety were associated with higher knowledge, attitude, and practice scores (Table 3).

Table 3: Predictors of Knowledge, Attitude, and Practice Scores (N=385)

Variable	Knowledge Score	Attitude Score	Practice Score
Age	0.18*	0.09	0.14*
Academic Year	0.22*	0.11*	0.19*
Previous Training on Patient Safety	0.25*	0.20*	0.23*

*Significant at $p < 0.05$

Discussion

This study assessed the knowledge, attitudes, and practices of health assistant nursing technicains regarding patient safety in clinical settings. The overall mean scores for knowledge, attitudes, and practices were 78.5%, 82.3%, and 75.6%, respectively, indicating that the technicains had good knowledge, positive attitudes, and adequate practices related to patient safety. These findings are consistent with previous studies that have reported similar levels of knowledge, attitudes, and practices among nursing technicains (Alquwez et al., 2018; Colet et al., 2015; Lee et al., 2019).

However, the study also identified some areas where the technicains' knowledge and practices needed improvement. For example, only 60.1% of the technicains correctly answered the question about the most common cause of medication errors, and only 62.5% reported that they always report all medication errors, regardless of their severity. These findings suggest that nursing education programs should place greater emphasis on medication safety and error reporting to ensure that technicains are well-prepared to provide safe and high-quality care to patients.

The study also found that there were significant differences in knowledge, attitude, and practice scores based on the technicains' demographic characteristics. Older technicains, those in higher academic years, and those with previous training on patient safety had significantly higher scores compared to their counterparts. These findings are consistent with previous studies that have reported similar associations between demographic characteristics and patient safety competencies among nursing technicains (Alquwez et al., 2018; Colet et al., 2015; Park & Park, 2018).

These findings highlight the importance of providing technicains with opportunities to develop their patient safety competencies throughout their nursing education. Nursing education programs should integrate patient safety concepts and best practices into their curricula and provide technicains with hands-on training and clinical experiences to reinforce their learning.

Additionally, healthcare organizations should offer continuing education and training programs on patient safety to ensure that nursing technicains and practicing nurses have the knowledge and skills necessary to provide safe and high-quality care to patients.

Limitations

This study had several limitations that should be considered when interpreting the results. First, the study used a convenience sampling technique, which may limit the generalizability of the findings to other populations of health assistant nursing technicains. Second, the study relied on self-reported data, which may be subject to social desirability bias. Third, the study was conducted at a single institution, which may limit the external validity of the findings.

Conclusion

This study assessed the knowledge, attitudes, and practices of health assistant nursing technicains regarding patient safety in clinical settings. The findings suggest that while the technicains had good overall knowledge, positive attitudes, and adequate practices related to patient safety, there were some areas where their knowledge and practices needed improvement, particularly in medication safety and error reporting. The study also identified several demographic characteristics that were associated with higher knowledge, attitude, and practice scores, including older age, higher academic year, and previous training on patient safety.

These findings have important implications for nursing education and practice. Nursing education programs should integrate patient safety concepts and best practices into their curricula and provide technicains with hands-on training and clinical experiences to reinforce their learning. Healthcare organizations should also offer continuing education and training programs on patient safety to ensure that nursing technicains and practicing nurses have the knowledge and skills necessary to provide safe and high-quality care to patients.

Future research should focus on developing and evaluating interventions to enhance patient safety competencies among nursing technicains and practicing nurses. Additionally, studies should explore the barriers and facilitators to implementing patient safety best practices in clinical settings and identify strategies to overcome these challenges.

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