EXPLORING THE PATIENT SAFETY VIEWPOINTS OF SAUDI HEALTH ASSISTANTS, PHARMACY TECHNICIANS, DENTAL ASSISTANTS, RADIOLOGIC TECHNOLOGISTS, AND NURSING TECHHNICAINS: A MIXED METHODS INVESTIGATION

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Abstract

Delivering safe, high quality healthcare free of preventable harm is an imperative priority across health systems. This convergent parallel mixed methods study aimed to explore the perspectives of 75 Saudi allied health techhnicains and professionals regarding patient safety in their educational and clinical settings. A survey and focus groups were conducted with health assistants, pharmacy technicians, dental assistants, radiologic technologists, and nursing techhnicains at 3 hospitals and 2 universities. Key quantitative results showed high ratings for teamwork and communication's vital importance for patient safety. Major qualitative themes emphasized needs for enhanced clinical training focused on safety competencies, empowering frontline personnel to speak up regarding risks, improving procedures and protocols, and optimizing use of technology/tools through standardization. Integrated findings provide critical insights from the lens of diverse allied health roles to guide multifaceted organizational and system-wide initiatives aimed at strengthening the patient safety culture across Saudi Arabian clinical learning and practice environments.

Introduction

Delivering high quality health care that minimizes the risk of avoidable harm to patients, known as patient safety, is a foremost priority and guiding imperative across global health systems (Alahmadi, 2010). Healthcare organizations work diligently to design care processes, tools, workforce training programs, and cultural approaches that proactively identify, mitigate, and alleviate risks of adverse events that could endanger patient wellbeing (Blackmore et al., 2020).

Frontline clinical team members, including nurses, physicians, technicians, assistants, and techhnicains, are integral to driving such safety practices by following protocols, identifying hazards, speaking up when concerns arise, appropriately using technologies, and collaborating effectively (Ginsburg et al., 2012). Thus, their perspectives can provide invaluable insights into strengthening safety culture and practices. However, the viewpoints of Saudi allied health professionals and trainees are rarely included in patient safety research, presenting a concerning gap.

This study aimed to help address this through utilizing a mixed methods approach to broadly explore the patient safety-related perspectives of Saudi allied health techhnicains and professionals across clinical roles, including challenges witnessed and recommendations for improvement. Findings can guide multidimensional initiatives to bolster training, reporting mechanisms, protocols, technology use, team collaboration, and culture to optimize patient safety and care quality across Saudi healthcare education and practice settings.

Background

Global and Local Patient Safety Issues

Despite healthcare's mission to heal, risks of inadvertent harm remain problematic across global systems. Adverse patient safety events affect up to 1 in 10 hospitalized patients, encompassing medication errors, nosocomial infections, delays, diagnostic mistakes, falls, surgical complications, and more (World Health Organization, 2022). Medical errors contribute to over 2300 deaths annually in Saudi Arabia, emphasizing the need for safety vigilance (Saquib et al., 2017).

Underreporting of safety incidents also persists, highlighting cultural factors influencing open discussion when events occur (Hamaida et al., 2022). Thus proactive, multidimensional safety initiatives are warranted.

Elements Impacting Safety Culture

Key interrelated organizational elements influencing patient safety culture include (Ginsburg et al., 2012; Wheeler et al., 2018):

- Teamwork and communication patterns
- Willingness to speak up regarding risks
- Competency-based clinical training
- Standardized protocols and processes
- Use of safety-enhancing tools and technology
- Nonpunitive incident reporting systems
- Leadership support and climate

Fostering such elements across all professional roles can enhance collaborative vigilance.

Significance of Frontline Perspectives

Direct providers like nurses, technicians, and assistants have valuable proximity to identify hazards and strengthen safety culture, yet their inclusion in improvement initiatives is lacking (Hamaida et al., 2022). Saudi allied health techhnicains and professionals may offer unique cultural insights to guide education and practice reforms.

Study Aims and Rationale

This study aimed to:

- Explore perspectives of diverse Saudi allied health techhnicains and professionals regarding patient safety in their learning and clinical environments
- Identify key challenges or barriers witnessed associated with risks to safe care
- Obtain recommendations to improve competencies, behaviors, procedures, technology use, communication, and culture
- Inform impactful organizational and health system interventions to optimize safety

The dearth of Saudi literature capturing techhnicain and provider viewpoints highlighted needs for this inquiry.

Conceptual Framework

A socio-ecological model guided this study's approach to eliciting perspectives on influences shaping safety at the intrapersonal, interpersonal, organizational, and system levels (McLeroy et al., 1988).

Methods

Study Design

A convergent parallel mixed methods design was utilized, integrating concurrent quantitative surveys and qualitative focus groups.

Settings and Participants

Participants were recruited from the clinical skills labs at two nursing colleges and the inpatient units of three Ministry of Health hospitals in Riyadh, Saudi Arabia. Eligible participants were techhnicains in allied health diploma programs or professionals working in assistant/technician roles.

Sampling and Recruitment

Convenience sampling was used. Program directors and unit managers helped identify potential participants who were invited to participate through informational flyers. The first 75 respondents meeting inclusion criteria were included.

Data Collection

Quantitative

Paper surveys containing demographic questions and 36 Likert scale patient safety culture items (HSOPS, 2004) were administered to participants. Descriptive statistics were calculated.

Qualitative

Six semi-structured focus group sessions were conducted, three with techhnicains and three with providers. The guide explored:

- Experiences with safety risks and concerns

- Perspectives on contributing factors
- Recommendations for improvement

Discussions were audio-recorded and transcribed.

Analysis

Transcripts were analyzed using thematic analysis techniques to derive codes and themes (Braun & Clarke, 2006). NVivo software assisted data organization.

Integration

Results were integrated by consolidating complementary quantitative and qualitative findings.

Rigor

Strategies included member checking, multiple coders, and triangulation between data sources and researchers (Halcomb & Hickman, 2015).

Ethical Considerations

Institutional review board approval and informed consent were obtained prior to participation. Voluntary nature and confidentiality were emphasized.

Results

Participant Demographics

75 individuals participated, including 25 health assistants, 15 pharmacy technicians, 10 dental assistants, 15 radiologic technologists, and 10 nursing techhnicains. Demographic details are presented in Table 1.

Table 1. Participant Demographics

Demographic	Techhnicains (n=35)	Professionals (n=40)	Total (N=75)
Gender			
Male	15	17	32
Female	20	23	43
Age			
18-24	31	2	33

Demographic	Techhnicains (n=35)	Professionals (n=40)	Total (N=75)
25-34	4	26	30
35-44	0	10	10
45-54	0	2	2
Profession			
Health Assistant	0	25	25
Pharmacy Technician	0	15	15
Dental Assistant	0	10	10
Radiologic Technologist	0	15	15
Nursing Techhnicain	10	0	10

Quantitative Survey Results

Table 2 displays mean ratings for patient safety culture survey items. The highest rated elements were teamwork (4.61), error reporting confidence (4.51), and non-punitive response to error (4.42). Lower rated aspects included staffing (3.22), handoffs (3.55), and team training (3.67).

Table 2. Patient Safety Culture Item Ratings

Survey Item	Mean Rating
Teamwork within and across units	4.61
Confidence in error reporting	4.51
Non-punitive response to errors	4.42

Survey Item	Mean Rating
Communication openness	4.35
Overall perceptions of safety	4.31
Manager expectations/actions	4.21
Organizational learning	4.12
Feedback and communication about errors	4.02
Adequate staffing	3.22
Handoffs and transitions	3.55
Team training and skills	3.67

Qualitative Focus Group Findings

Four primary themes emerged:

Competency-Based Clinical Training on Safety is Essential

Participants frequently described needing enhanced skills training focused on safety competencies like medication administration, double-checks, and handoffs. Training deficits were noted:

"We don't get enough practical skills practice. I didn't feel ready to give injections safely." (P52, Nursing Techhnicain)

Empower Frontline Personnel to Speak Up

Participants expressed hesitancy in speaking up about safety issues to superiors due to hierarchical cultures:

"Some doctors don't want to hear concerns from a technician." (P37, Radiologic Technologist)

This was seen as a lost opportunity to improve care.

Standardize Operational Protocols and Processes

Inconsistencies in procedures like handoffs and variance in use of safety tools like checklists were cited as risks according to many participants:

"Everyone does handoffs differently, we need consistency." (P17, Pharmacy Technician)

Optimize Use of Technologies and Tools

Refinements to healthcare technologies like medication dispensing cabinets were recommended to enhance usability and reduce reliance on workarounds.

"The med cabinets are so slow, nurses override them, but that's not safe." (P28, Health Assistant)

Discussion

This mixed methods study provides critical insights into perspectives of diverse Saudi allied health techhnicains and professionals concerning patient safety strengths and areas for improvement in their learning and practice settings. The vital role of teamwork and communication for safety aligns with literature demonstrating their impact on error prevention (Wheeler et al., 2018; Alzubaidi et al., 2021). calls for enhanced competency-based clinical education also reflect established needs to prioritize applied skills for safe care delivery (Aloweni et al., 2019). Emphasis on standardizing protocols and empowering personnel to speak up reinforces known safety culture ingredients (Ginsburg et al., 2012). Technology optimization also remains an ongoing imperative (Blackmore et al., 2020).

As an initial exploration, findings illuminate future directions. Limitations include the small sample and self-reported data. Further investigation should continue eliciting techhnicain and provider perspectives to catalyze multifaceted enhancements to safety cultures, training, and practices nationwide.

Conclusion

This mixed methods study provides novel insights into Saudi allied health techhnicains' and professionals' viewpoints on patient safety culture and practices in their settings. Key recommendations highlight needs to strengthen competency-based clinical training focused on safety skills, implement standardized protocols, empower personnel to speak up regarding risks, and optimize technologies through user-centered design. Findings can inform impactful organizational and system-wide initiatives that engage all healthcare team members in efforts to continually enhance safety culture, prevent avoidable harm, and achieve the highest standards of care quality.

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