Volume 3, Issue 5, 2025

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

ASSESSMENT OF NURSING STUDENTS' AWARENESS AND ATTITUDES TOWARD PATIENT SAFETY CULTURE AT PRIVATE NURSING COLLEGES IN PESHAWAR

Javid Khan[*1], Muhammad Sohail[2], Abdul Manan[3] Inamullah[4], Shaukat Ullah[5]

[*1]*Nursing Internee, Jinnah Teaching Hospital Peshawar*
[2]*Registered Nurse, Cardiac ICU RMI*
[3]*Prinicipal at Razi College of Nursing*
[4]*Registered Nurse, Cardiac ICU RMI*
[5]*Staff Nurse at Shah NICU*

[*1]javidkhanbazkhel@gmail.com, [2]muhammadsohail200199@gmail.com, [3]manan2273@gmail.com, [4]inamullahdirv@gmail.com, [5]shaukatu35@gmail.com

DOI: https://doi.org/10.5281/zenodo.16742143

Keywords
Nursing students, patient safety, assessment, attitudes, Peshawar

Article History
Received: 05 May, 2025
Accepted: 19 June, 2025
Published: 05 August, 2025

Corresponding Author: *
Javid Khan

Abstract

Background: *Patient safety is defined as the reduction of risk for avoidable harm associated with healthcare delivery. It involves a balance between current knowledge, available resources, and the clinical context in which care is provided—compared to the risks of no treatment or alternative treatment. Hospitalized patients are particularly vulnerable to adverse events, including those related to medication administration. As the largest group within the healthcare workforce, nurses play a crucial role in promoting patient safety due to their continuous presence at the bedside. Therefore, integrating high-quality, culturally competent patient safety practices into nursing education is essential.*

Aim:*To assess the level of awareness regarding patient safety culture among nursing students in clinical settings.*

Materials and Methods: *A descriptive cross-sectional study was conducted involving 200 nursing students. Data were collected using a structured questionnaire. Participants were selected through a convenience sampling technique. Written informed consent was obtained from all respondents prior to data collection.*

Results: *The sample included 80 female and 120 male students, with 160 students aged under 22 years and 32 between 23–27 years. Most participants were fourth-year students with no prior experience or training in patient safety. Only 55 students demonstrated an average level of awareness about patient safety, while 145 considered it to be highly important. Thirty-five students reported high confidence in identifying patient safety issues and expressed a willingness to report such incidents. However, only 25 students reported witnessing a safety-related incident, and just 7 students formally reported these incidents to the administration. The most commonly cited barriers to incident reporting were lack of knowledge and time constraints.*

Conclusion: *The study highlights a concerning gap in patient safety awareness among nursing students, emphasizing the need for enhanced education and training in this critical area. Addressing identified barriers could improve reporting behavior and overall safety culture within clinical learning environments.*

Volume 3, Issue 5, 2025

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

INTRODUCTION

Background

Patient safety refers to reducing the risk of avoidable harm linked with healthcare. A minimum is the total of supplied current information, available resources, and the circumstance in which the offered healthcare is weighed against the risk of no treatment or another treatment. Admitted patients are at risk of experiencing an adverse event, and those receiving drugs may experience drug-related adverse responses. According to an Institute of Medicine study, one of the most successful strategies to improve patient safety is to incorporate patient safety education into clinical training programs. According to the WHO research, adverse events as a result of hazardous care constitute one of the top ten causes of death and disability worldwide. In low- and middle-income nations, over 134 million adverse events occur in hospitals due to poor care, resulting in 2.6 million fatalities each year. Up to four out of every ten people are harmed in primary and outpatient health care around the world, with around 80% of the injury being preventable. Medical errors and adverse events pose a serious risk to patients worldwide. The findings demonstrated that 98,000 people die each year as a result of medical blunders in hospitals. This is higher than the death rate from car accidents, job injuries, and breast cancer. Furthermore, the financial price of human tragedy and medical error quickly rises to the top ranks of urgent and widespread communal issues.(1).

According to the International Council of Nursing (ICN), patient safety is essential to providing high-quality nursing and medical care. Therefore, in order to deliver high-quality care, healthcare professionals make sure that it is safe, effective, patient-centered, timely, efficient, and equitable. Improving the quality of healthcare enhances overall patient health and outcomes but depends upon the avoidance of care-related injuries as well as responsiveness and respect for patient needs and values. This means the healthcare workforce must be well prepared to ensure patient safety and provide culturally sensitive care . Providing safe care is an essential responsibility of hospital nurses, as patients in that setting are at risk of adverse events e.g., medication administration errors, falls, pressure ulcers, and pneumonia , many of which are related to nursing duties . Patients have a right to culturally and clinically appropriate care, according to the ICN, which also encourages nurses to: show cultural competence by understanding their own culture without allowing it to negatively affect people from other backgrounds; show understanding of other cultures; acknowledge that the patient and the provider may hold different cultural beliefs; accept and respect cultural differences; adapt care to the patient's culture and expectations; and provide culturally appropriate care that will ensure the best patient outcomes. It takes a lot of education to prepare nurses to deliver safe and culturally competent nursing care. In other words, nurses need to be properly informed about a variety of patient safety concerns and precautionsIn order to make culturally sensitive decisions, they must be fully awere of how important it is to be receptive to each patient's religion, values, primary language, and other cultural aspects. In order to provide culturally competent care and reduce health disparities, nurses must be trained with knowledge that cuts beyond regional barriers. (2)

Cultural sensitivity

The ability to deliver high-quality, culturally sensitive care should be a major focus of nursing education. In order to deliver safe and high-quality care to a variety of patient populations, nurses with these competences are better equipped to combine their knowledge, abilities, and attitudes. Nurses are in a unique position to deliver safe, culturally sensitive care since they are patient advocates. Cultural competency would replace generic care delivery methods with a system that is more responsive to varied cultures, increasing access to high-quality treatment for all patient populations. Building rapport with patients is another benefit of cultural competency. However, nurses and other healthcare professionals must have a clear awereness of varied cultural practices in order to provide culturally competent treatment (2).

World Patient Safety Day

On September 17, 2019, the inaugural World Patient Safety Day was observed with the subject "Patient Safety: a global health priority." Everyone working in the healthcare industry is reminded of the importance of patient safety on World Patient Safety Day. Every day, innumerable people throughout the world are at danger due to substandard care and suffer negative outcomes brought on by the very system that was meant to help them recover (3). Concern over preparing aspiring health professionals with the information, abilities, and mindsets needed to enhance their patient safety competencies has grown since the turn of the century. The World Health Organization, or WHO, as well as several organizations in the US, Australia, Canada, and even nursing students. Nonetheless, patient safety competencies are not given the appropriate weight in nursing degree programs worldwide, and more effective educational interventions must be developed and assessed in order to enhance patient safety knowledge, abilities, and

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

attitudes in both clinical and academic settings. Various methods for enhancing nursing students' patient safety competencies can be discovered in the literature. Some writers employ conventional methods, such as scheduled courses or master classes. Health science students in Europe are required to learn competency profiles for patient safety. Other writers employ teaching strategies like the flipped classroom or use digital recordings into two out of eleven courses. However, Lee and Quinn come to the conclusion that online learning modules, clinical simulation, and technology tools enhance nursing students' safety competencies. To determine which teaching methods are best for combining theoretical and clinical learning, more study is necessary. Nursing students may see circumstances during clinical rotations that jeopardize patient safety and may make mistakes that harm their patients. The most common mistakes involve biological mishaps, incorrect equipment management, and the administration of medications. Nursing students' attitudes regarding cooperation, open communication, and error reporting need to be improved because they are unwilling to report these circumstances out of fear of the repercussions, even though recognizing these errors is crucial for improving healthcare operations. Indeed, Kong et al. discovered a correlation between nursing students' positive attitudes toward patient safety and their performance of associated behaviors, such as error notification, which also happens when they are professionals (3).

Clinical training practices have changed as a result of safety standards put in place after the Institute of Medicine's 1999 "To Err is Human" study and the World Health Organization's following global patient safety initiative. The attitudes of health workers and continual patient safety education are the main components of this shift toward a safer workplace. Numerous obstacles to safer practices, the reasons why health professionals believe adverse events (AEs) occur, and the need for training have all been found by studies examining the safety culture in healthcare organizations (4).

The World Health Organization (WHO) defines patient safety as a collection of coordinated actions intended to lower preventable damage and medical errors for patients receiving treatment. Unintentional activities or ones that ultimately fail to provide the desired result are considered medical mistakes. With 251,000 fatalities each year, medical errors rank as the third most common cause of mortality in the US 3. In contrast, medical errors cause more negative outcomes in poor nations than in rich ones. Three primary qualities have always been heavily emphasized in medical school curricula: medical knowledge, technical skills, and judgment.-clinical judgment (5).

However, professional and non-technical skills like risk management, human aspects, leadership, and teamwork were rarely taught. Numerous accrediting organizations have recently recognized the critical necessity for healthcare students to receive patient safety education. In response, the WHO created a roadmap for medical schools' patient safety curricula 13. This handbook is intended to help faculty members clarify patient safety knowledge and abilities and medical school instructors provide patient safety instruction. Healthcare professionals are becoming more interested in patient safety principles as they realize how important they are to enhancing patient outcomes and safeguarding patients' wellbeing. AlNawafleh et al. 14 investigated the cultures surrounding patient safety among medical staff in Jordanian hospitals (6).

Physicians, nurses, pharmacists, dieticians, physiotherapists, laboratory specialists, radiologists, and technicians were among the healthcare professionals. They showed that in the 12 months prior to their survey, 40% of participants reported at least one patient safety occurrence. Furthermore, medical errors are also common, with over 70% of nurses and nursing students lacking training in reporting and preventing medical errors, according to a recent study from Jordan (7) that evaluated medical errors among nurses and nursing students. Given that present medical students will offer healthcare in the future, it is critical to evaluate and address their patient safety knowledge, attitudes, and training to guarantee a proactive and successful approach to reporting and preventing medical errors (8).

Concepts of patient safety are now included in the curricula of several medical schools (9). Traditional lectures, seminars, or other teaching techniques are used to deliver patient safety education. Internal medicine clerkship directors at US and Canadian medical schools concurred that patient safety instruction had to be taught in medical school (10). receiving patient safety education is linked to favorable behavioral changes among medical students in addition to increases in knowledge, abilities, and attitudes, according to studies evaluating patient safety training treatments (11). The opinions of Jordanian medical students regarding patient safety principles have not been evaluated in any research. In order to foster a culture of patient safety and safe procedures among medical students, the results of our survey can serve as baseline data for attitudes among medical students and aid in future enhancements to the current educational programs (12).

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Florence Nightingale's Remark,

Florence Nightingale's 1896 remark, "First, do no harm," embodies the core principles of effective nursing, as do codes of ethics and accountability. Due to a lack of resources, rising patient demand, technology improvements, and changing demographics, healthcare organizations today face numerous obstacles in maintaining and promoting safe patient care. Despite these obstacles, health care systems should be dedicated to all of its patients, and patient safety should be regarded as a human-right issue. According to estimates, one out of ten patients worldwide encountered safety concerns during hospital treatment; this makes it the fourteenth leading cause of illness burden worldwide. (13)

Given that they account for over half of the practicing health workforce, nurses are the largest group of healthcare professionals. They play a crucial role in ensuring patient safety since they have the most direct and extended patient contact. As a result, nurses are more likely than other medical professionals to identify, stop, and address misconduct in communication and workflow. In order to advance patient safety in the areas of knowledge, attitude, and skills in educating future nurses, undergraduate nursing education is a crucial first step. Students are seen as an essential and vital part of the healthcare system. The expressions "fresh pair of eyes, keen to learn and the safety leaders of the future" emphasizes their contributions to safety care. As a result, two facts support early exposure to the concept of patient safety in undergraduate education: first, nurses make more avoidable mistakes soon after graduation than they do later in their careers, and second, recent graduates bring new ideas and evidence-based theory to the workplace. Patient mortality and the frequency of adverse events recorded by nurses are somewhat correlated with nursing education (13) Therefore, the purpose of this study is to investigate undergraduate medical students' attitudes toward patient safety across all Pakistani nursing students.

Rationale

This is because a strong patient safety culture plays an important role in healthcare, hence nursing students must be properly trained to uphold this doctrine. This study, therefore, aims to assess nursing-students' awereness and attitudes around patient safety culture in the hope of informing future curriculum development and training. This study will help in identifying the level of knowledge and attitude, which exist on this aspect so that a further encouragement can be made to improve patient safety education leading towards quality care by future nurses.

Objectives

- To assess the level of awareness of patient safety culture among nursing students in clinical settings.
- To evaluate the attitudes of nursing students toward patient safety culture.
- To identify factors that influence nursing students' attitudes toward patient safety culture.

LITERATURE REVIEW

The literature has highlighted that teaching patient safety to undergraduate nursing students is essential; yet, there is currently no consistency in teaching approaches, nor agreement on the areas to focus or priorities. Patient safety has remained a "hidden element" of the curriculum over the years. It is gradually and intermittently introduced into an already overloaded nursing curriculum. As a result, students have minimal opportunity to define and comprehend the importance of non-technical human elements over technical competencies in patient safety. Earlier evidence indicated that students felt more confident in technical aspects than the sociocultural aspects of patient safety . Students valued teamwork, including patient participation in health care planning, but expressed little knowledge of teamwork concerns, particularly during clinical placements. This evidence, however, came primarily from Canada, the United States, and Australia, with some contributions from Europe, including the United Kingdom, Finland, and Italy. Furthermore, students' knowledge of patient safety was limited outside of the formal classroom and in the workplace. Students believed that more class time was spent on teaching path physiology and treatment rather than nursing interventions. As a result, insufficient time was available to discuss nursing care and patient safety concerns. As a result, students felt unsafe and lacked expertise about patient issues in real practice (13).

Other findings revealed a lack of faculty expertise with teaching such courses, as well as a lack of confidence or desire among educators in incorporating patient safety into the curriculum. A qualitative analysis discovered that the WHO 11 issues were either not addressed at all, such as human factors, or were presented in a way that failed to link patient safety. A European study conducted under the COST Action project RANCARE in 27 countries indicated that safety issues were not covered as a separate module. Although they were featured in some syllabi, they were not taught as a stand-alone topic. Instead, they were distributed across the curriculum in various other topics, creating the impression of little importance (14).

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Also the preceding study identified disparities in nursing education within and within the countries studied. Reconstructing nursing education is difficult. The literature suggests a need for further information on teaching patient safety in pre-registration nursing programs and determining the appropriate degree of knowledge for students in various areas. Evaluating nursing students' perceptions of patient safety in the classroom and clinical practice can provide a starting point, especially for students from diverse backgrounds and cultures. Studying various students' opinions is the best way for educators to discover the education system's flaws and omissions(6).

The current study's findings will benefit national and European efforts in designing, developing, delivering, and evaluating learning interventions for patient safety, given the limited evidence on perceived competence in Europe. To our knowledge, this is the second cross-national study concentrating on undergraduate nursing students' opinions of patient safety issues. In brief, this section describes nursing education in Cyprus and Greece. Nurse training in Cyprus and Greece complies with EU requirements for mutual recognition of qualifications. Undergraduate nursing courses last four years and encompass 240 ECTS European Credit Transfer and Accumulation System . Cyprus only offers the option of graduating with a university degree. In terms of clinical practice, two kinds of supervision have been adopted: nurse educator and mentor. The mentor and the students are both supernumeraries, with a ratio of 1:5 59. At the time of data collection, Greece had two stages of higher nursing education: university and technology degrees, and vocational education for nursing assistants, which lasted two years. In clinical practice, students are Dimitriadou et al. BMC Nursing 2021 20:110 Page 3 of 12 trained either by nursing personnel primarily from universities or by graduate or doctorate students with clinical experience, whereas nursing professors occasionally visit students to ensure that learning objectives are met (13).

Another study found that only 293 (43.2%) and 308 (45.4%) had high knowledge and positive attitudes toward patient safety, respectively. Furthermore, just 135 (19.9%) of the students practiced appropriate patient safety. Year of study (AOR = 3.75, 95% CI: 2.3, 9.3), duration of practical attachment (AOR = 2.6, 95% CI: 1.2, 5.9), and knowledge of patient safety (AOR = 2.9, 95% CI: 1.9, 3.4) were all linked with improved patient safety practices (15).

According to a literature review study in this regard, the primary indicators of the patient safety culture in healthcare organizations are mutual trust and open communication, feedback and communication about Saberi et al. Attitude of Nurses Towards the Patient Safety Culture 555 Patient safety focus, organizational learning, managerial commitment, and a no punitive approach to errors. Promoting a patient safety culture is a critical goal in the development of clinical governance. A positive safety culture among nurses may result in the proactive detection of errors and risks that are unavoidable in the healthcare system. As a result, there is an increasing interest in improving healthcare professionals' attitudes toward the patient safety culture in a variety of companies around the world.

Changing the attitude of blaming healthcare personnel for errors and mistakes is seen as the most significant hurdle to building a safe healthcare system. To strengthen this component of hospital culture, it is important to recognize that errors in care providing are not personal failings, but rather opportunities to improve care quality and prevent patient damage. Attitude assessments are a solid way to evaluate the effectiveness of patient safety measures. Several research, including those by Agha Rahimi, Tabibi, and Shajarat, have used the Hospital Survey on Patient Safety Culture (HSOPSC) created by the Agency for Healthcare Research and Quality (AHRQ) to examine attitudes toward patient safety culture in Iran (16).

Assessment of nurses' attitudes regarding the patient safety culture in hospitals indicates the dimensions that need to be improved, enabling for the implementation of appropriate interventions to support the patient safety culture. Given the importance of nurses' attitudes in impacting patient outcomes, the purpose of this cross-sectional study was to analyze nurses' attitudes towards patient safety culture in teaching general hospitals connected with Tehran University of Medical Sciences in Tehran, Iran. The study's findings could help create efforts to modify these attitudes and build a patient safety culture (16).

A survey of 17 research on undergraduate nursing education revealed that just a few defined particular patient safety and cultural competency learning needs (17). This shows that nursing students may be underprepared to offer quality care while maximizing patient safety 18. Furthermore, little is known about nursing students' educational experiences in patient safety and cultural sensitivity, as well as their perceptions of these competences. A deeper knowledge of experiences and perspectives will allow educators to create courses that instill these skills in future nurses. The purpose of this study was to assess nursing students' opinions of patient safety and cultural competency-related educational experiences in terms of curriculum content and learning venues, as well

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

as to examine their self-reported patient safety and cultural competencies (19)

According to a poll conducted among European residents, a significant portion of the participants reported that they or a family member had encountered an adverse incident during healthcare, and half of the respondents believed that they would be harmed while obtaining treatment. In order to reduce the possibility of patients suffering harm from the care that is meant to assist them, patient safety is the result of both system efficacy and individual performance design. This includes moving away from the idea that patient safety is a technical matter and toward the idea that system-related variables and the participation of several people are involved. These elements are known as patient safety sociocultural or non-technical skills. (13)

The examination of the 17 papers included in this review revealed that just four studies address nursing students' patient safety competencies and what they must acquire during their university curricula. The goal of this review was to identify patient safety competencies and clinical learning environments that promote the development of patient safety competencies in nursing students; however, the literature reviewed revealed a lack of knowledge and research on clinical learning environments. These themes have not been

completely investigated, but according to Benner et al. (2010), clinical learning environments are critical for the development of clinical reasoning, which is required to increase patient safety competencies in nursing students. Only two quantitative studies (Chenot 2010, Gonzalez 2014) mentioned a model called 'Quality and Safety Education for Nurses' (QSEN), which aimed to develop students' knowledge, skills, and attitudes in six areas: patient-centered care, collaboration and teamwork, evidence-based practice, quality and safety promotion, and information technology. Furthermore, the studies included in the current review were mostly concerned with Accepted Article students' perceptions of patient safety or the specific competencies to be gained, and very little is known about the features that clinical learning settings should have. Only three studies demonstrated the significance of the mentor's role in assisting and overseeing students' learning activities Canadian Patient Safety Institute 2008, Killam et al. 2010, Wakefield et al. 2005 . Jones 2013.(19) Reid-Searl et al. (2013) found that 88% of students were directly monitored during all drug delivery processes. In clinical settings, the role and quality of the relationship between students and nurse instructors are important Debourgh 2012, Kneafsey & Haigh, 2007, Reid-Searl et al. 2013, as well as the opportunity for students to observe positive professional models and not negative ones, such as power disparities between different health professionals. Duhn et al. (2012), Kneafsey and Haigh (2007), Reid-Searl et al. (2013), and Debourgh (2012).

Killam et al. (2013) reported that there are four unique opinions of unsafe clinical. Accepted Article This article is protected by copyright. All rights are reserved. Situations for first-year nursing students include an overwhelming sense of inner discomfort, unconventional practice, a lack of professional

ethics, and disharmonizing relationships. At the same time, Abbott et al. (2012) found that in a successful clinical learning environment, students have favorable attitudes toward material, knowledge gained, capacity to apply knowledge, and interactions with classmates and instructors. Another key feature that arose from this research was the need of having clinical environments that stimulate students' critical reasoning. Debourgh (2012), so that students can acknowledge their faults and apply decision-making skills. Kneafsey & Haigh, 2007. (19).

When the studies were analysed, students' perceptions emerged as an important factor. Participants' assessments frequently mirrored the level of sensitivity of their particular job, as well as a wide variety of ideas regarding other aspects of patient safety. Chenot & Daniel 2010. In Debourgh's 2012 study, students reported feeling they had an impact on patient care outcomes in their clinical learning environment. Furthermore, risk-inclined nursing students did not discover any medication errors and were less safe in drug administration, supporting the patient risk detection theory. Gonzalez. 2014.

Another qualitative study identified three major themes: 'building an enabling environment', 'learning through action and reflection', and 'the creation of patient safety practices'. Through action learning, students can nurture the leadership skills considered vital for ensuring patient safety, as well as develop a greater sensitivity to the patient's perspective, which has been highlighted as critical to improving patient safety. The findings imply that 'Action Learning Sets' can do this by allowing students to develop their own solutions to tackle genuine workplace difficulties and deal with the uncertainties and obstacles involved with practice improvement. Christiansen et al., 2014. The contracts

identify unsafe patient care incidents as errors, near misses, potential adverse events, and adverse events.

Other themes that emerge from the mixed-methods studies include the role of academic institutions in patient safety education, students' views of unsafe clinical conditions, and the value of technology in improving safe care. Accepted

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

 Regarding the function of academic institutions, patient safety information and the wide range of clinical learning settings are deemed crucial to encourage the internalization of these principles, major student awereness by learning from varied clinical situations. Abbot et al. 2012, as well as their capacity to operate from an interdisciplinary standpoint. According to the findings of the current review, further integration of theoretical and clinical learning is desirable. This form of integration necessitates clinical environments that encourage confidence between students and mentors, with supervised students becoming an active part of the care process. These environments should promote learning from mistakes by analyzing what occurred in order to acquire a complete grasp of the phenomena without eliciting judgmental behavior. Proper student integration in the clinical setting must consider the pedagogical sensitivity of the learning environment. (20)

METHADOLOGY

This study utilized a quantitative approach to assess nursing students' awareness and attitudes toward patient safety culture in clinical settings. A self-administered questionnaire was used to collect data from nursing students working in public healthcare facilities.

Study Design

A descriptive cross-sectional design was employed in this study to investigate nursing students' awareness and attitudes toward patient safety culture in clinical settings. This design was chosen to provide a comprehensive overview and capture a "snapshot" of the participants' perceptions at a single point in time. Data were collected using self-administered questionnaires from nursing students working in public healthcare facilities.

Study Setting

The study was conducted across the following institutional settings in Peshawar: Life Care College of Nursing, NCS University System, Khyber Pakhtunkhwa Institute of Medical Sciences, and Hayatabad Institute of Medical Sciences.

Sampling Techniques

A convenience sampling technique was employed in this study. It is a non-probability sampling method commonly used in both qualitative and quantitative research, where participants are selected based on their availability and willingness to participate.

Sampling Size

A sample size of 200 students was determined using the chi-square test to ensure statistical significance, based on a 95% confidence level and a 5% margin of error. Each selected institution received 60 questionnaires. A total of 240 students responded; however, 40 questionnaires were excluded due to incomplete responses. Thus, 200 fully completed questionnaires were included in the final data analysis.

Inclusion criteria

- Nursing students who have completed at least one clinical placement.
- Students who voluntarily provided informed consent to participate in the study.

Exclusion criteria

- Nursing students who have not yet undergone clinical placements.
- Students who are not available during the data collection period.
- Students who decline to participate.

Operational Definitions

- **Patient Safety Culture:** The shared values, beliefs, and norms that influence attitudes and behaviors toward patient safety within a healthcare organization.
- **Awereness:** The extent to which nursing students are informed about patient safety culture practices in clinical settings.
- **Attitudes:** The perceptions, feelings, and predispositions of nursing students toward patient safety

DATA COLLECTION TOOL

Data were collected after obtaining written informed consent from participants using a structured, self-administered questionnaire (see Appendix 1), which was provided via email by a previous researcher with their permission. The questionnaire was designed to address key variables and consisted of four sections: demographic information (including age, gender, clinical experience, and education), awareness about patient safety, attitudes toward patient safety culture, and experiences in clinical settings related to patient safety incidents. Official approval for the study was granted by the Institutional Research Committee (IRC) of Life Care College of Nursing and Allied Health Sciences, Peshawar. Additionally, formal permission was obtained from the administrations of all participating institutions. The data collection was conducted from

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

September to November 2024, targeting all eligible nursing students who met the inclusion criteria, regardless of department or clinical rotation. A consent form was attached to the questionnaire, and participants were assured that their anonymity and confidentiality would be maintained throughout the research process. No personal identifiers were collected, and the data were used solely for academic purposes.

Data Analysis

IBM SPSS Statistics Version 27 was used for data analysis in this study. Descriptive statistics were applied to calculate frequencies and percentages for categorical variables. Additionally, charts and graphs were generated to visually represent the data, and the findings were interpreted using descriptive statistical analysis.

RESULTS

This section presents the findings of the study Assessment of Nursing Students' Awereness and Attitudes toward Patient Safety Culture in Clinical Settings.. The results are based on the analysis of data collected from the self-administered questionnaires completed by patients.

Figure 4.1: Gender

Results of the current study revealed that among total of 200 participants there were total 120 (60.0%) males while 80(40.0%) participants were females as shown in the figure.

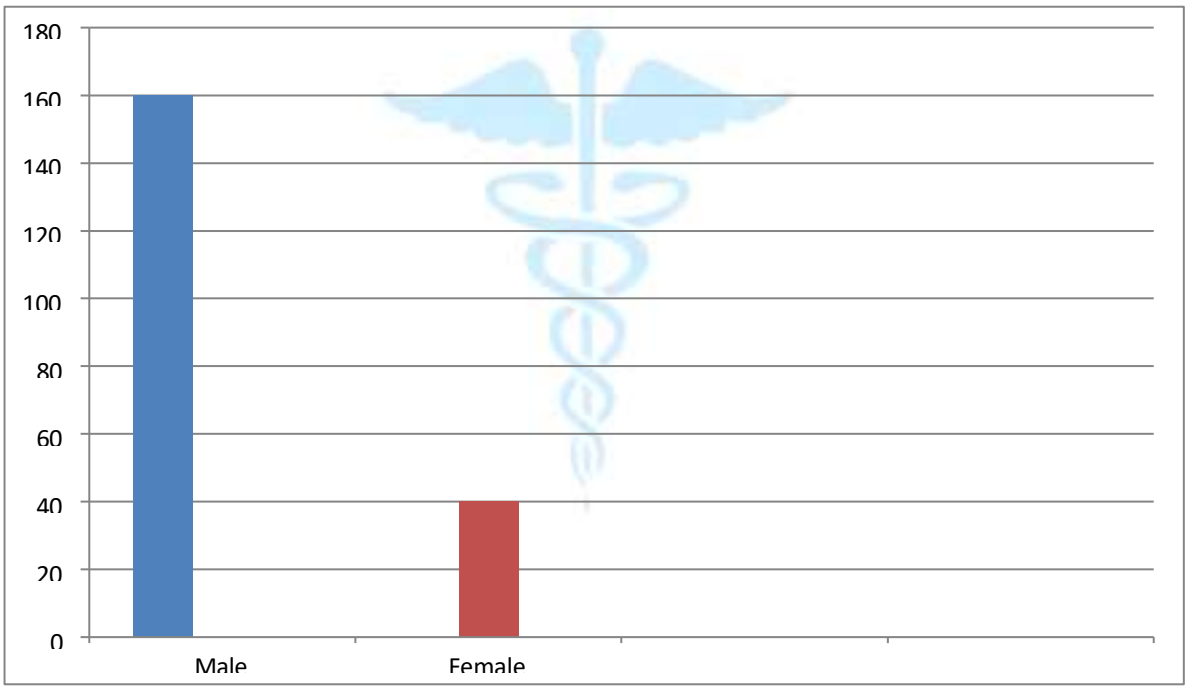


Table 4.2: Age of participants

In total 200 respondents 160 were under 22 years, 32 were in between 23 to 27 years, 8 were above 27 years as shown in the table.

Table 4.2: Age of participants

Table 4.2: Age of participants		
	Age in Years	Frequency
1	Under 22 years	160
2	23 to 27 years	32
3	More than 27 years	8
4	Total	200

Frontier in Medical & Health Research
ISSN: (e) 3007-1607 (p) 3007-1593

4.3 Year of Study of the Participants

Out of 200 participants 23 students were from 1st year, 30 were from 2nd year, 27 were from 3rd year and 120 were from 4th year as shown in the table.

Table 4.3 Year of Study of the Participants

Table 4.3 Year of Study of the Participants		
	Year of Study of the Participants	Frequency
1	1st year	23
2	2nd year	30
3	3rd year	27
4	4th year	120
5	Total	200

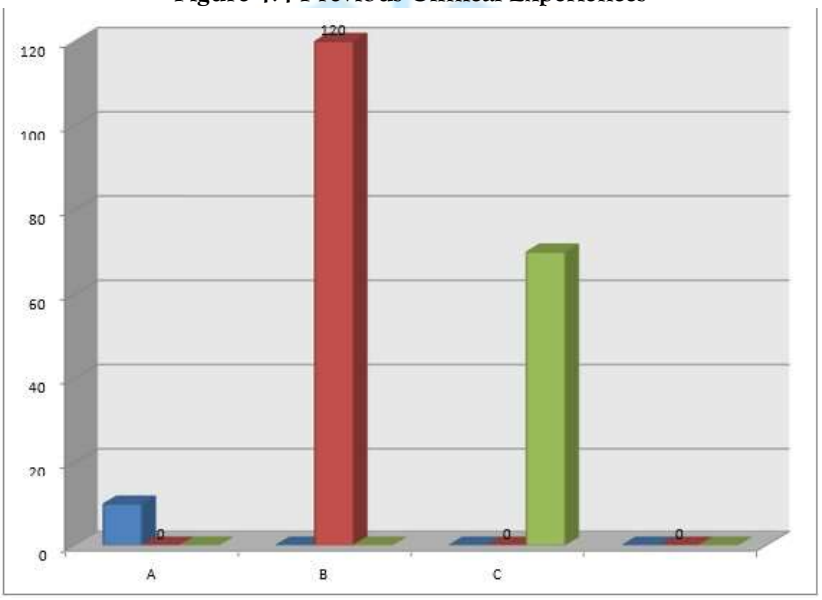
4.4 Previous Clinical Experiences

Out of the 200 students 10 were having previous clinical experience, 120 were not having experience and 70 were currently in clinical training as shown in the figure.

A: yes B: no

C: currently working or in training

Figure 4.4 Previous Clinical Experiences



Section 2: Awereness of Patients Safety

This section contains 4 closed ended questions and participants responses.

Understanding of Patients Safety

Out of 200 students 50 were very poorly awere of patients safety, 40 were poorly awere, 55 were average, 60 were good and 15 students were excellent as shown in the figure.

A; Very Poor B: Poor

C: Avarge D: Good

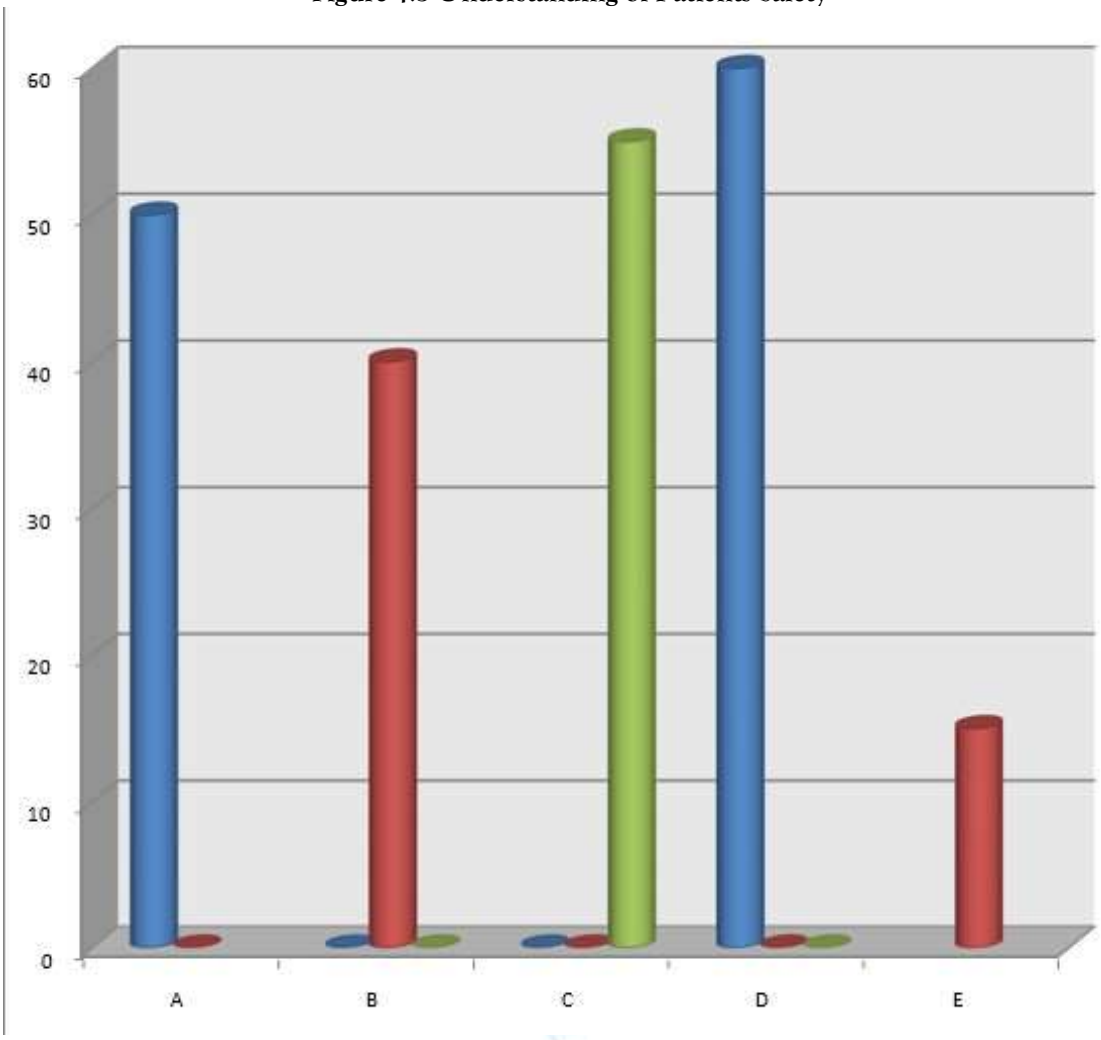
E: Excellent

Volume 3, Issue 5, 2025

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

Figure 4.5 Understanding of Patients Safety



4.5 Ever Received Formal Training On Patients Safety

Out of 200 students 27 received formal training while 173 were not trained about patient safety as shown in the table.

Table 4.6 Ever Received Formal Training On Patients Safety

Ever Received Formal Training On Patients Safety		
Question	Yes (Frequency)	No (Frequency)
Ever Received Formal Training On Patients Safety	27	173
Total	200	

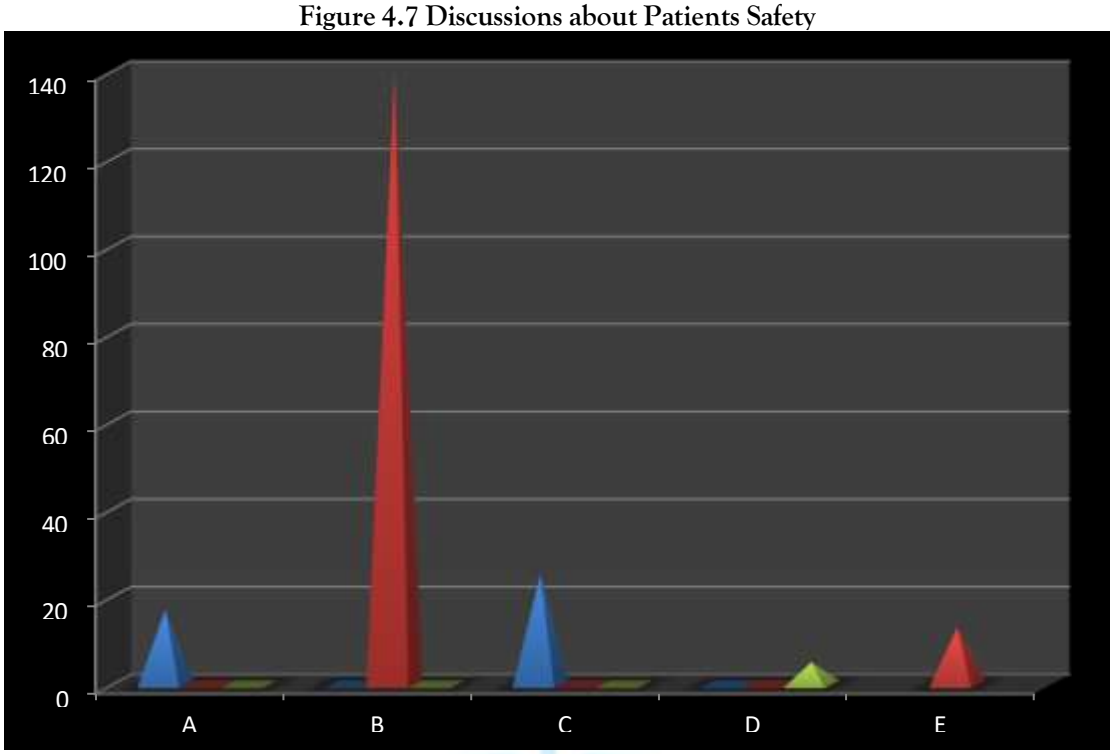
4.6 Discussions about Patients Safety

Out of 200 students 17 never discussed the patient safety , 140 rarely , 25 sometimes, 5 often, and 13 always discussed patient safety in clinical practice as shown in the figure.

A: Never B: Rarely
C: Somtimes D: Often
E: Always

Frontier in Medical & Health Research
ISSN: (e) 3007-1607 (p) 3007-1593

Figure 4.7 Discussions about Patients Safety



Section 3: Attitudes towards Patient Safety

4.7 Importance of Patient Safety

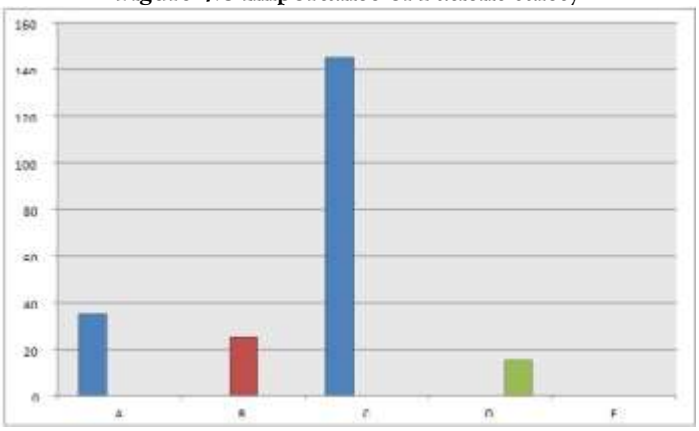
Out of 200 students 35 responded to slightly important, 25 to moderate, 145 to very important and 15 responded to extremely important as shown in the figure.

A: Slightly B; Moderate

C: Very Important D: Extremely

E: NOT

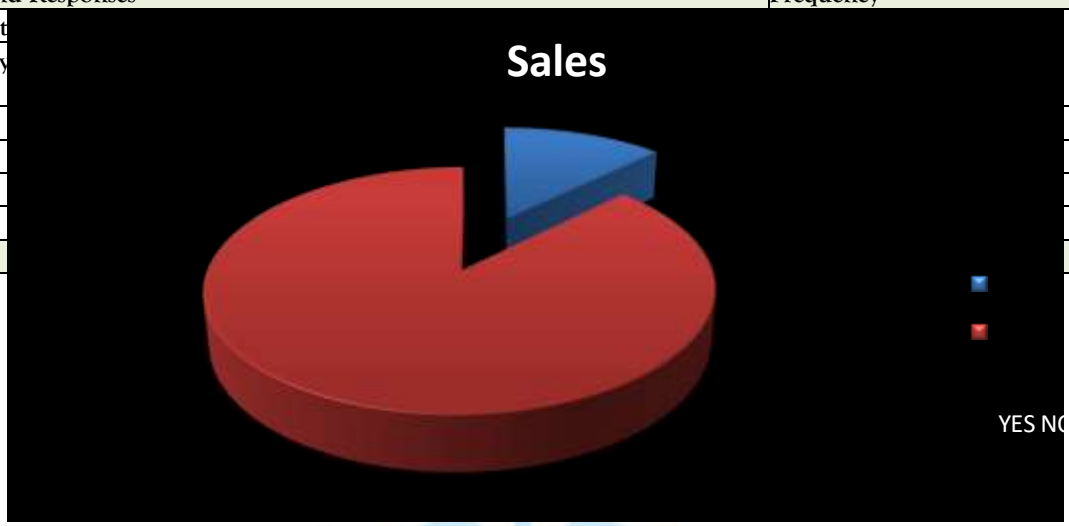
Figure 4.8 Importance of Patient Safety



Volume 3, Issue 5, 2025

ISSN: (e) 3007-1607 (p) 3007-1593

likely Report an Error in Clinical Settings	
Question And Responses	Frequency
likely Report	
Very unlikely	
Unlikely	
Neutral	
Likely	
Very likely	
Total	



4.8 Confident in Identifying Patient Safety Issues

Out of 200 students 10 not at all, 127 were slightly confident, 15 were moderately, 35 very confident and 13 were extremely confident as shown in the table.

Table 4.9 Confident in Identifying Patient Safety Issues

Confident in Identifying Patient Safety Issues	
Question And Responses	Frequency
Confident in Identifying Patient Safety Issues	
Not At All	10
Slightly Confident	127
Moderately Confident	15
Very Confident	35
Extremely Confident	13
Total	200

4.9 likely Report an Error in Clinical Settings

Out of 200 students 20 don't want to report, 35 unlikely, 45 ticked neutral, 80 want to report and 2o extremely or very likely to report an error as shown in the table.

Table 4.10 likely Report an Error in Clinical Settings

4.10 Observed a Patient Safety Incident

Out of 200 students only 25 observed while 175 not observed an incident during their clinical training or practice as shown in the figure.

Figure 4.11 Observed A Patient Safety Incident

4.11 Did you report?

Out of the 200 students only 7 reported an incident in their clinical practice

Frontier in Medical & Health Research

Volume 3, Issue 5, 2025

ISSN: (e) 3007-1607 (p) 3007-1593

Figure 4.12 Did you report

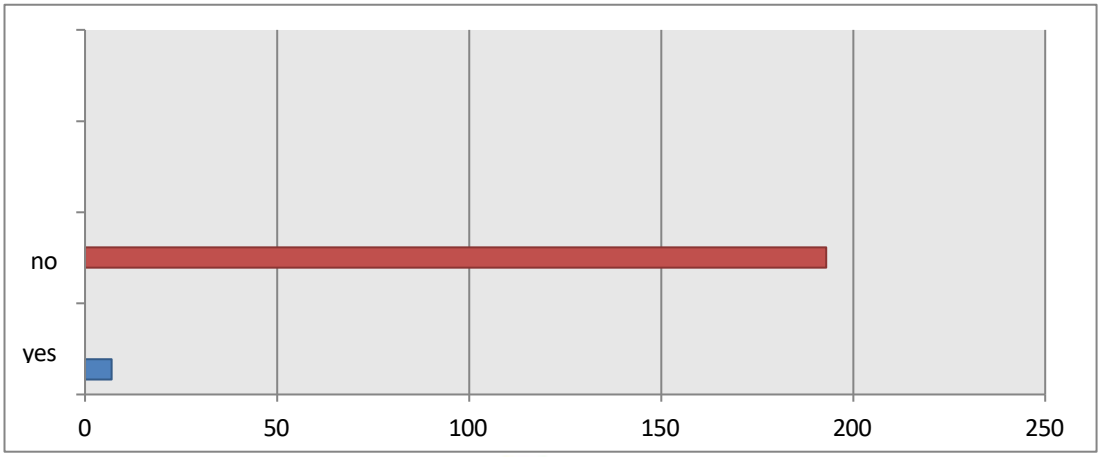


Table 4.13 Barriers in Reporting Incidents

4.12 Barriers in Reporting Incidents

Out of 200 students 105 did not report the incident due to lack of knowledge the rest is in the table.

4.13 Barriers in Reporting Incidents	
Question And Responses	Frequency
Barriers in Reporting Incidents	
Fear of retribution	25
Lack of knowledge	105
Time constrains	55
Reporting won't change any thing	15
Others	0
Total	200

4.14 Emphasis Placed On Patient Safety	
Question And Responses	Frequency
Emphasis Placed On Patient Safety	
1 Very poor	15
2 poor	25
3 average	140
4 Good	20
Total	200

4.13 Emphasis Placed On Patient Safety

On scale of 1 to 4, Out of 200 students 15 rated very poor, 25 poor, 140 average and 20 rated good emphasis placed on patient safety in your clinical education as shown in the table.

Frontier in Medical & Health Research

Volume 3, Issue 5, 2025

ISSN: (e) 3007-1607 (p) 3007-1593

DISCUSSION

According to our study findings there were 80 males and 20% female with 160 students under 22 years and 32 were in between 23 to 27 years , most were from 4th year and having no prior experience or training of patient safety. In 200 students only 55 were averagely aware of patient safety , on the other hand only 145 consider patient safety is very important , there were 35 who were very confident to identify patients safety issues , there attitude were to likely report these incidents and the average were 35 students. In 200 students only 25 observed an incidents and 175 ticked that they did not observe any observed incident and among these students only 7 students report these incidents to administration , and the most discussed barrier were lack of knowledge , and the 2nd most barrier were time constrains .

According to another study which shows that It is commonly reported that one out of every ten hospitalized patients suffer injury, at least half of which might have been avoided. For example, medical mistakes are the third leading cause of mortality in the United States. Unfortunately, a lot of students lack the self- confidence to report medical errors they or others have made. Yet, disclosing errors enhances the standard of treatment for new patients. The importance of reporting medical errors is to enhance awereness and prevent recurrence, it is important to learn from the reasons of past accidents and near-misses by attempting to understand why they have occurred in the first place and then figure out how to avoid them. Our study provides a base for future research and emphasizes the value of educating medical students in universities about patient safety. The positive overall attitudes displayed by medical students in our study towards patient safety concepts are encouraging. These findings

indicate that medical students are receptive to the principles and practices that promote patient safety. Among the different domains assessed, the most positive attitudes were observed in the domain of "Working hours as error cause. Furthermore, the positive attitudes towards the "Importance of patient safety in the curriculum" domain highlight that medical students acknowledge the need for patient safety education to be an integral part of their training. They recognize the importance of incorporating patient safety competencies into medical curricula is crucial for providing high-quality care and minimizing harm to patients. We investigated the association between patient safety attitudes and first-generation students' status as they bring unique perspectives and diverse backgrounds to medical education, shedding light on their potential roles in addressing health disparities and shaping the future of patient-centered care. First-generation medical students scored significantly lower score in "Professional incompetence as error cause" domain. This could be attributed to not having a good exposure to the medical profession and they may not fully understand the complexity and nuances of the healthcare system. In Jordan, the academic program is divided into two halves, the first three years are the pre-clinical stage where students are taught basic subjects on the university campus and are not involved in patient care, and the later three years are the clinical stage where students are directly involved in patient care. The clinical training is done in university hospitals and at local hospitals, affiliated with Jordan Ministry of Health or Royal Medical Services; thus students from different universities sometimes share the same training hospital and attending, The differences observed in attitudes towards patient safety domains between students in the clinical stage and those in the pre-clinical

stage provide valuable insights into the evolving perspectives of medical students as they progress through their education. In contrast, students in the pre-clinical stage scored significantly higher in the domains of "Patient Safety Training Received" and "Disclosure Responsibility." These findings suggest that pre-clinical students recognize the need for a solid foundation in patient safety concepts and skills to ensure safe and effective care delivery. A study that examined patients' and physicians' attitudes regarding the disclosure of medical errors found that physicians often avoid explicitly stating the occurrence of errors and struggle to provide emotional support [25].

A cross-sectional study in 2021 that aimed to determine the prevalence of burnout among resident physicians in

Frontier in Medical & Health Research

Volume 3, Issue 5, 2025

ISSN: (e) 3007-1607 (p) 3007-1593

Jordan showed that 77.5% were found to have burnout [37]. Medical students are constantly in contact with residents leading to increased awereness of working hours as a cause of medical errors. A recent systematic review and meta-analysis that aimed to study the relationship between long working hours and accidents and injuries, found that weekly working hours>55 h were associated with an increased risk of incidents [38]. To reduce burnout among healthcare providers we suggest that institutions prioritize their well-being, provide flexible schedules, encourage regular breaks, and promote (9).

Another study shows that that the mean score of knowledge was 9.51 out of 11 (SD=1.35), the mean score of attitudes was 57.66 out of 75 (SD=9.17), and the mean score of practices was 5.64 out of 8 (SD=1.72). Where 59% of participants reported good knowledge about patient safety. 61% of participants reported positive attitudes toward patient safety.

CONCLUSION

Undergraduate nursing students in Pakistan showed positive overall attitudes toward patient safety concepts. Neutral attitudes were reported only in the same domain, while no domain received a negative attitude score. Gender, first-generation student status and academic year differences had a significant association with patient safety domains. Our findings indicate a promising future for patient safety culture within the healthcare system with improved patient outcomes And most of the students were awere of patient safety. Nursing schools are recommended to continue to prioritize and enhance patient safety education throughout their curriculum; by integrating these concepts into lectures, case-based discussions, and clinical rotations. This study provides baseline data to improve current educational programs and enhance a patient safety culture among medical students. Further studies are warranted to investigate the real behaviors toward patients' safety and the impact of educational programs in developing this culture, as our study was based on self reported data.

Limitation OF the study

There were some of the limitation or weakness of this study which are the following

Sampling technique was convient so there may be errors and bias. It will not be as good as others sampling technique. The result were from only few institutions, this was because of the time constrains and budget management and only from nursing students and this was the cause of limitation and less generalizability. The study design was descriptive which is a snap shot of the study, this topic need an inclusive and experimental study.

Recommendations for Clinical Practice:

To enhance patient safety culture, healthcare institutions should prioritize ongoing education and training for nursing staff. This can include workshops, seminars, and online modules focusing on patient safety principles, error reporting, and near-miss analysis. Additionally, institutions should encourage a culture of transparency, open communication, and blame-free reporting to foster a safe and supportive work environment.

Recommendations for Institutes:

Nursing education institutions should integrate patient safety education throughout their curricula, emphasizing the importance of safety culture, error prevention, and quality improvement. Institutes can also collaborate with healthcare organizations to provide students with hands-on experience in patient safety practices. Furthermore, institutions should encourage interdisciplinary education and teamwork to promote a culture of safety and collaboration.

Recommendations for Future Research:

Future studies should investigate the impact of patient safety education on nursing students' attitudes and behaviors. Researchers can also explore the effectiveness of different educational strategies, such as simulation-based training and interprofessional education, in promoting patient safety culture. Additionally, studies can examine the relationship between patient safety culture and patient

Frontier in Medical & Health Research

ISSN: (e) 3007-1607 (p) 3007-1593

outcomes, including morbidity, mortality, and satisfaction.

Recommendations for Students:
Nursing students should prioritize patient safety education and training, recognizing its critical role in providing high-quality care. Students can seek out opportunities for hands-on experience in patient safety practices, such as participating in simulation-based training or quality improvement projects. Additionally, students should engage in ongoing self-reflection and professional development, staying up-to-date with the latest patient safety research and best practices.
Recommendations for policy makers: Based on this study there should arrange the workshops and seminars for students and their should be strict policy about patient policy and the student must know these policies and follow them firmly for the welfare of human being and patients.

REFERENCES

Mohammed T, Woldearegay E, Kedir S, Ahmed K, Getnet M, Gudina EK. Patient safety knowledge, attitude and practice among undergraduate health science students in South West Ethiopia. Frontiers in Public Health [Internet]. 2023 Jan 9;10. Available from: https://doi.org/10.3389/fpubh.2022.1064896

Lee SE, Lee MH, Peters AB, Gwon SH. Assessment of Patient Safety and Cultural Competencies among Senior Baccalaureate Nursing Students. International Journal of Environmental Research and Public Health [Internet]. 2020 Jun 13;17(12):4225. Available from: https://doi.org/10.3390/ijerph17124225

Nadarajan SP, Karuthan SR, Rajasingam J, Chinna K. Attitudes Toward Patient Safety among Medical Students in Malaysia. International Journal of Environmental Research and Public Health [Internet]. 2020 Oct 22;17(21):7721. Available from: https://doi.org/10.3390/ijerph17217721

Mira JJ, Navarro IM, Guilabert M, Poblete R, Franco AL, Jiménez P, et al. A Spanish-language patient safety questionnaire to measure medical and nursing students' attitudes and knowledge. Rev Panam Salud Publica. 2015;38(2):110–9.

Dimitriadou, M., Merkouris, A., Charalambous, A. *et al.* The knowledge about patient safety among undergraduate nurse students in Cyprus and Greece: a comparative study. *BMC Nurs* 20, 110 (2021). https://doi.org/10.1186/s12912-021-00610-6

Al-Sawalha, I., Jaloudi, N., Zaben, S. *et al.* Attitudes of undergraduate medical students toward patients' safety in Jordan: a multi-center cross-sectional study. *BMC Med Educ* 23, 695 (2023). https://doi.org/10.1186/s12909-023-04672-9

Ta'an WF, Suliman MM, Al-Hammouri MM, Ta'an A. Prevalence of medical errors and barriers to report among nurses and nursing students in Jordan: A cross-sectional study. Nurs Forum (Auckl). 2021;56(2):284–90.Available from: https://pubmed.ncbi.nlm.nih.gov/33336425/.

Mohsin SU, Ibrahim Y, Levine D. Teaching medical students to recognise and report errors. BMJ Open Qual. 2019;8(2). Available from: https://pubmed.ncbi.nlm.nih.gov/31276054/.

Nie Y, Li L, Duan Y, Chen P, Barraclough BH, Zhang M et al. Patient safety education for undergraduate medical students: a systematic review. BMC Med Educ. 2011;11(1).

Alper E, Rosenberg EI, O'Brien KE, Fischer M, Durning SJ. Patient safety education at U.S. and Canadian medical schools: results from the 2006 Clerkship Directors in Internal Medicine survey. Acad Med. 2009;84(12):1672–6 Available from: https://pubmed.ncbi.nlm.nih.gov/19940571/.

Patey R, Flin R, Cuthbertson BH, MacDonald L, Mearns K, Cleland J et al. Patient safety: helping medical students understand error in healthcare. Qual Saf Health Care. 2007;16(4):256–9. Available from: https://pubmed.ncbi.nlm.nih.gov/17693671/.

Kirkman MA, Sevdalis N, Arora S, Baker P, Vincent C, Ahmed M. The outcomes of recent patient safety education interventions for trainee physicians and medical students: a systematic review. BMJ Open. 2015;5(5). Available from: https://pubmed.ncbi.nlm.nih.gov/25995240/

Dimitriadou, M., Merkouris, A., Charalambous, A. *et al.* The knowledge about patient safety among undergraduate nurse students in Cyprus and Greece: a comparative study. *BMC Nurs* 20, 110 (2021). https://doi.org/10.1186/s12912-021-00610-6

Torkaman M, Sabzi A, Farokhzadian J. The Effect of Patient Safety Education on Undergraduate Nursing Students' Patient Safety Competencies. Community Health Equity Research & Policy. 2022;42(2):219-224. doi:10.1177/0272684X20974214

Mohammed T, Woldearegay E, Kedir S, Ahmed K, Getnet M, Gudina EK. Patient safety knowledge, attitude and practice among undergraduate health science students in South West Ethiopia. Frontiers in Public Health [Internet]. 2023 Jan 9;10. Available from: https://doi.org/10.3389/fpubh.2022.1064896

Saberi M, Jamshidi E, Rajabi F, Seydali E, Bairami F. Attitude of Nurses toward the Patient Safety Culture: A Cross-Sectional Study of the Hospitals in Tehran, Iran. Patient Saf Qual Improv. 2017; 5(3):554- 560.

Bianchi, M.; Bressan, V.; Cadorin, L.; Pagnucci, N.; Tolotti, A.; Valcarenghi, D.; Watson, R.; Bagnasco, A.; Sasso, L. Patient safety competencies in undergraduate nursing students: A rapid evidence assessment. J. Adv. Nurs. 2016, 72, 2966–2979. [CrossRef]

Lee, N.J.; An, J.Y.; Song, T.M.; Jang, H.; Park, S.Y. Psychometric evaluation of a patient safety competency self-evaluation tool for nursing students. J. Nurs. Educ. 2014, 53, 550–562. [CrossRef] [PubMed]

Massachusetts Department of Higher Education Nursing Initiative.

Massachusetts Nurse of the Future Nursing Core Competencies© Registered Nurse. 2016. Available online: http://www.mass.edu/nahi/documents/nofrncompetencies_updated_march2016.pdf (accessed on 1 June 2020).https://doi.org/10.3390/ijerph17124225

Bianchi M, Bressan V, Cadorin L, Pagnucci N, Tolotti A, Valcarenghi D, Watson R, Bagnasco A, Sasso L. Patient safety competencies in undergraduate nursing students: a rapid evidence assessment. Journal of Advanced Nursing. 2016 Dec;72(12):2966-79