KNOWLEDGE, PERCEPTION AND ATTITUDE TOWARDS PATIENT SAFETY AMONGST CLINICAL YEAR PHYSIOTHERAPY STUDENTS IN KWARA STATE, NIGERIA

BY

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CERTIFICATION

This project by SHUAIB, SIMBIAT AHUOIZA is accepted in its present form as satisfying the requirement for the award of Bachelor of Physiotherapy in (BPT)degree of the Department of Physiotherapy, Faculty of Basic Medical and Health Sciences, Thomas Adewumi University, Oko, Kwara state

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DEDICATION

To my late grandfather, Alhaji Shittu Ibrahim. whose strength defied tremors and whose smile remained steady even when the care did not. This work is for you—and for every missed opportunity where knowledge could have made all the difference.

ABSTRACT

Patient safety is an important component of quality healthcare and an increasing global priority, particularly in low and middle-income countries where systemic limitations often exacerbate risks. Despite physiotherapists playing an essential role in patient care and rehabilitation, limited research exists on how physiotherapy students in Nigeria perceive and understand patient safety. This study assessed the knowledge, perception, and attitude towards patient safety among clinical-year physiotherapy students in Kwara State, Nigeria.

A cross-sectional descriptive and inferential analytical study was conducted using a validated, self-administered questionnaire adapted from the WHO Patient Safety Curriculum Guide. A total of 195 students from Thomas Adewumi University and the University of Ilorin were selected through stratified random sampling. Respondents were drawn from clinical classes (300 to 500 level). Data were analyzed using descriptive statistics and Pearson's Chi-square tests with significance set at $p \leq 0.05$.

Findings revealed that 64.1% of respondents were female, with a mean age of 21.6 years Moderate knowledge levels were prevalent across most patient safety domains: 39% were neutral about types of human error, and 38.5% about error reporting. Only 14.4% reported high knowledge of error types, and 12.3% knew how to report errors. Regarding system safety, 42.1% gave neutral responses on the prevalence of physiotherapy errors, and only 7.7% believed Nigeria has a safe healthcare system. In contrast, 84% agreed that learning from mistakes can prevent incidents, and 85.9% emphasized the importance of learning to acknowledge errors during training. A significant association was found between level of study and both knowledge ($\chi^2 = 12.472$, $p = 0.002$) and attitude ($\chi^2 = 7.327$, $p = 0.026$), indicating that clinical exposure improves safety awareness.

In conclusion, while clinical-year physiotherapy students in Kwara State demonstrate commendable attitudes toward patient safety, their knowledge remains insufficient, and their perception of the healthcare system's safety is mixed. Integrating structured patient safety education early in physiotherapy curricula is essential to equip future professionals with the competence to ensure safer clinical practice and improve health outcomes.

Keywords: patient safety, physiotherapy students, knowledge, perception, attitude

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Patient safety has emerged as a global priority in healthcare, with the World Health Organization (WHO) identifying it as a fundamental component of quality care. It refers to the prevention of errors and adverse effects associated with healthcare delivery. Patient safety is a fundamental principle of health care derived from the Latin dictum *primum non nocere* (First do no harm) (Gonzalez-Caminal *et al.*, 2022). Unsafe practices can result in significant harm, disability, or even death, affecting patients' well-being and trust in healthcare systems.

The World Health Organization defines patient safety as ‘the absence of preventable harm to a patient during the process of healthcare and reduction of risk of unnecessary harm associated with healthcare to an acceptable minimum’ (World

Health Organization, 2018). Medical errors, unsafe practices, and adverse events are significant contributors to patient harm worldwide, leading to a substantial burden of morbidity and mortality (Makary & Daniel, 2016). In low- and middle-income countries like Nigeria, this challenge is particularly pronounced, where resources for healthcare delivery and safety protocols may be limited (Yusuf *et al*., 2019). Healthcare professionals, including physiotherapists, doctors, and nurses, play an important role in promoting and maintaining patient safety. Their level of knowledge, attitudes, and perceptions toward safety practices can have a direct impact on patient outcomes (World Health Organization, 2011). Studies have shown that the lack of proper safety knowledge and training among healthcare providers is a major factor contributing to adverse events and unsafe practices in hospitals (Kohn *et al*., 2000).

Research indicates that early exposure to patient safety education positively influences healthcare students' attitudes, which can shape their professional conduct (Patey *et al*., 2020).

In physiotherapy, patient safety is critically important, as the profession involves close contact with patients, use of equipment, and therapeutic techniques that could potentially result in harm if not administered correctly (Sullivan & O'Keeffe, 2020). The complexity of conditions treated by physiotherapists, such as musculoskeletal injuries, stroke rehabilitation, and chronic pain management, further underscores the need for patient safety practices (Dean, 2012). Risks include improper use of therapeutic equipment, manual handling of patients, and failure to adhere to contraindications in treatment, which could lead to patient injuries or complications (Dean & Söderlund, 2013).

Ginsburg *et al*., (2020) carried out a study that suggests that a strong understanding of patient safety concepts should be integrated into the education of healthcare students to prepare them for real-world challenges. However, limited studies have specifically examined physiotherapy students' knowledge and perceptions of patient safety, particularly in Nigeria (Akande *et al*., 2021).

1.2 Statement of the Problem

The World Health Organization (WHO) emphasizes that up to 134 million adverse events occur annually in low- and middle-income countries due to unsafe healthcare practices, contributing to approximately 2.6 million deaths (WHO, 2020). Given the critical role of physiotherapists in patient care and rehabilitation, the professionals must be adequately trained in patient safety. While patient safety education has been integrated into the curricula of many health sciences disciplines worldwide, significant gaps remain in low-resource settings such as Nigeria. Previous research conducted in other parts of the world, particularly in developed countries, has shown that structured education on patient safety principles among healthcare students leads to improved safety practices in clinical settings (Lee, An, & Song, 2021).

However, in Africa and Nigeria, similar studies are limited, and the level of knowledge, perception, and attitudes toward patient safety among physiotherapy students has not been adequately explored (Ameh *et al*., 2020). This is particularly concerning as the Nigerian healthcare system already faces significant challenges, including resource constraints, high patient volumes, and inadequate infrastructure, all of which can exacerbate patient safety risks. Previous studies in Nigeria have focused primarily on doctors and nurses, with limited attention given to physiotherapists, who also play a pivotal role in patient care (Ogunlusi, Okem, & Oginni, 2019). There is a clear gap in understanding how physiotherapy students perceive and apply patient safety knowledge in their training and future clinical practice. Current literature offers limited insights into the knowledge and attitude of physiotherapy students in Nigeria regarding patient safety.

This study aimed to address this gap by specifically examining the knowledge, perceptions, and attitudes of clinical year physiotherapy students in Kwara State towards patient safety. By identifying gaps in their understanding and assessing their preparedness for clinical practice, this study offered insights that can inform improvements in the educational curricula and clinical training programs. These findings also serve as a foundation for future research and policy development aimed at enhancing patient safety in Nigeria and other resource-limited settings.

1.3 Aim of the Study

The aim of the study was to determine the level of knowledge, perception, and attitude towards patient safety in clinical physiotherapy students in Kwara state.

1.4 Specific Objectives of the Study

The specific objectives of this study were to:

1. Assess the level of knowledge of patient safety among clinical physiotherapy students in Kwara state.

2. Assess the perception of patient safety among clinical physiotherapy students.

3. Assess the attitude of clinical physiotherapy students toward patient safety.

1.5 Research Questions

1. What is the level of knowledge of patient safety among clinical year physiotherapy students in Kwara state?

2. What is the level of physiotherapy error in the context of the safety of the healthcare system?

3. What is the personal influence of physiotherapy clinical students on safety?

4. What is the level of knowledge of safety at the workplace among clinical physiotherapy students?

5. Is there a significant association between the level of study and knowledge or attitudes toward patient safety among clinical physiotherapy students?

1.6 Significance of the Study

This study was embarked upon to assess how well clinical physiotherapy students, who are soon to become autonomous practitioners, understand and apply patient safety principles. As physiotherapists increasingly contribute to direct care, especially in developing health systems like Nigeria's, understanding their readiness is crucial. It is hoped that the findings from the study will help guide curriculum review, foster safer clinical environments, and contribute to policy discussions on patient safety training in allied health education. This study is also in line with Sustainable Development Goal(SDG) 3, To Promote Good Health And Well-Being. Patient safety is a crucial aspect of healthcare quality. By assessing and improving the knowledge, perceptions, and attitudes of future physiotherapists, this study promotes safer healthcare practices, reduces medical errors, and improves patient outcomes in Kwara State and Nigeria. This will help reduce preventable injuries caused by unsafe healthcare practices.

Finally, this study contributes to the limited body of knowledge on patient safety among Nigerian healthcare students, specifically within the context of the Kwara state. It can also serve as a foundation for further exploration of patient safety awareness in other places as well as factors influencing attitude towards patient safety in physiotherapy students, such as the role of clinical exposure, personal experiences and educational interventions.

1.7 Scope of the Study

This study was embarked upon to explore how well clinical-year physiotherapy students understand and internalize the principles of patient safety. Given the evolving role of physiotherapists in direct patient care, especially in Nigeria, identifying potential knowledge and attitude gaps is essential to inform curriculum development, patient safety policies, and continuous professional education. It is hoped that findings from this study will contribute to improving training approaches and help physiotherapy educators integrate more robust patient safety content into clinical education.

This study assessed the students' understanding of fundamental patient safety and how they perceive the importance and relevance of patient safety in their training and future clinical practice. This study was conducted among clinical physiotherapy students (300, 400, and 500 level) in two universities in Kwara State—Thomas Adewumi University and the University of Ilorin. A total of 199 students were selected using stratified sampling based on level of study. The age range of participants was between 18 and 27 years old, and both male and female students were included. A structured, self-administered questionnaire adapted from the WHO Patient Safety Curriculum Guide for Medical Schools was used to collect data. The study focused on assessing their knowledge, perception, and attitude toward patient safety.

1.8 Limitation Of The Study

This study encountered certain limitations that may have influenced the findings. The use of a self-administered questionnaire meant that some responses were prone to social desirability bias, as participants may have chosen answers they perceived as favorable rather than their true beliefs or knowledge levels. Additionally, the study was conducted across only two universities, which may limit the generalizability of the findings to physiotherapy students in other parts of the country. This study was carried out during academic session, when students were fully engrossed in academic activities and environmental factors such as time constraints during clinical postings and academic schedules may have affected students' ability to fully concentrate while responding to the questionnaire. Despite these challenges, efforts were made to ensure the reliability and validity of the data collected.

1.9 Operational Definition Of Terms

Attitude: An individual's feelings, beliefs, and predispositions toward a particular concept or practice, which influence how they behave or respond.

Clinical student: A student in his/her third year and beyond who is gaining practical experience in a clinical setting under the supervision of a physiotherapist.

Knowledge: Understanding of or information about a subject that you get by experience or study, either known by one person or by people generally (Merriam-Webster, n.d.).

Patient safety: The absence of preventable harm to a patient during the process of healthcare and the reduction of risk of unnecessary harm associated with healthcare to an acceptable minimum (World Health Organization, 2023).

Perception: A belief or opinion, often held by many people and based on how things seem (Merriam-Webster, n.d.)

Undergraduate: A student at a college or university who has not received a first and especially a bachelor's degree (Merriam-Webster, n.d.).

1.10 List Of Abbreviations/Acronyms

GPSAP: Global Patient Safety Action Plan

TAU: Thomas Adewumi University

UHC: Universal Health Care

UN: United Nations

UNILORIN: University of Ilorin

WHA 72.6: The seventy-second World Health Assembly

WHO: World Health Organization

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction to Patient Safety

Patient safety has emerged as a fundamental element in global healthcare systems and is increasingly recognized as a public health priority. Patient safety is a pressing issue in developing countries, with unique challenges and opportunities for improvement (Al-Worafi, 2023). The World Health Organization (WHO) has recognized patient safety as a key public health concern. Universal Health Coverage (UHC) aims not only to provide access to care but also to ensure safe, high-quality healthcare. In 2019, the WHO declared patient safety a priority through resolution WHA72.6, reinforcing that patient safety is essential for achieving UHC and building trust in healthcare systems (World Health Organization, 2020). Patient safety is a fundamental aspect of healthcare systems, aimed at reducing risks, errors, and harm to patients during the provision of health services. The concept has evolved from a narrow focus on error reporting to a broader understanding of systems-based safety, safety culture, clinical governance, and continuous quality improvement, all of which emphasises patient safety as critical to achieving Universal Health Coverage (UHC) (World Health Organization, 2020). Contemporary healthcare systems are increasingly focusing on embedding safety cultures, ensuring that healthcare professionals prioritise minimising risks in their daily practice. Patient safety involves minimizing avoidable risks and harm to patients during health service delivery. . In low- and middle-income countries (LMICs), where the burden of medical errors is disproportionately high, establishing safety systems is a prerequisite for public trust in healthcare delivery (Al-Worafi, 2023). The World Health Organization's (WHO) Global Patient Safety Action Plan (GPSAP) for 2021–2030 emphasises the importance of establishing national safety programmes across all health disciplines, including physiotherapy. It highlights that patient engagement and continuous professional development are key components of a sustainable safety culture (WHO, 2024). The physiotherapy profession must align with these global safety goals to meet the demands of Universal Health Coverage (UHC) and promote safe, effective care.

2.2 Patient Safety in Physiotherapy

Traditionally, physiotherapy was perceived as relatively low-risk. However, recent research highlights the importance of addressing patient safety systematically within this field (González-Caminal *et al*., 2022). Safety risks in physiotherapy can range from minor adverse events like muscle soreness to more severe issues such as falls or improper use of therapeutic devices. As physiotherapy care expands across clinical settings, the importance of safety protocols, patient education, and risk management becomes paramount (College of Physiotherapists of Ontario, 2024). As physiotherapists often work alongside other healthcare professionals, ensuring consistency in safety practices across disciplines is crucial. Effective communication between physiotherapists, doctors, and nurses can prevent errors and promote coordinated care, especially in complex rehabilitation settings (College of Physiotherapists of Ontario, 2024). Furthermore, improving patient education regarding home-based exercises and therapy regimens can reduce the risk of adverse events outside clinical settings. Knowledge about the adverse events and the system involved in patient safety, communication, managing and acting at the moment, information technology to reduce risks, being a life-long learner, collaboration are the major domains of patient safety practices (Physiopedia, 2024)

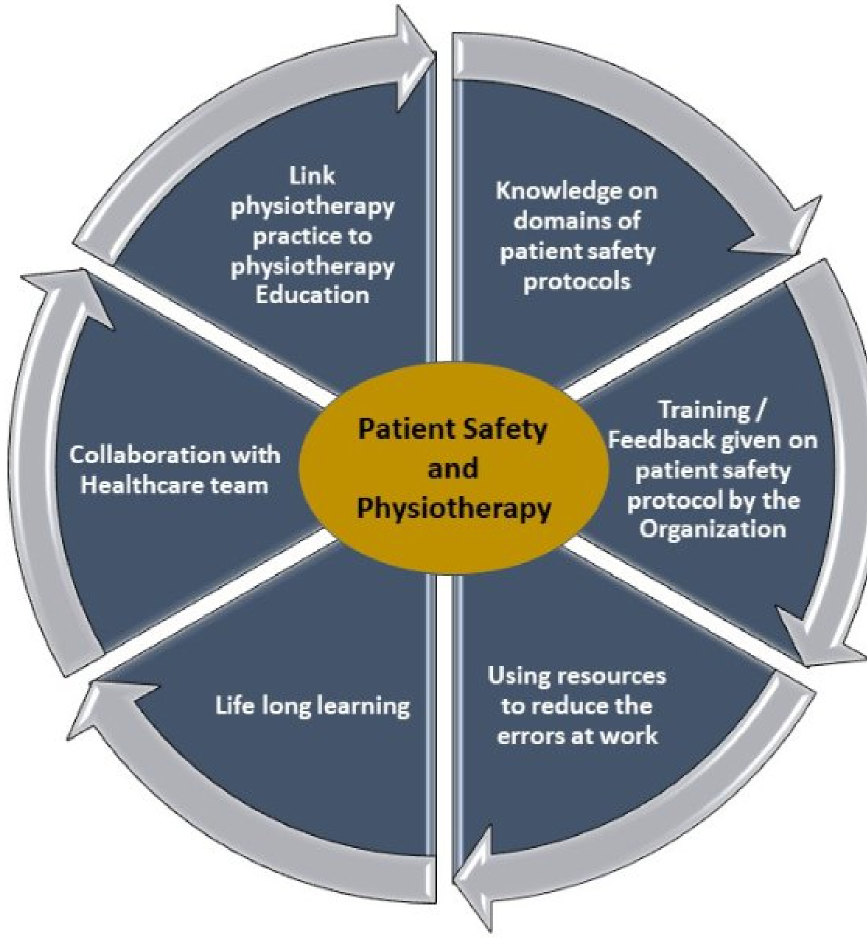

Figure 1: Patient Safety and Physiotherapy (Physiopedia, 2024)

2.2.1 Awareness of Patient Safety and Challenges in Physiotherapy

Physiotherapy is a relatively new profession compared to nursing and medicine. Despite gaining acceptance, there is limited awareness among the public and other healthcare providers about the role of physiotherapy in patient care (Gonzalez-Caminal *et al*., 2022). Despite the growing awareness of safety protocols, several challenges impede effective implementation within physiotherapy settings. There is a lack of research focusing specifically on safety incidents involving physiotherapists, which limits the development of targeted interventions (González-Caminal *et al*., 2022). Furthermore, unlike nursing and medical professions, physiotherapy has fewer established frameworks for reporting safety incidents, making it harder to build a culture of transparency and accountability (WHO, 2024). The lack of data on patient safety incidents within physiotherapy limits the development of a culture of safety. Unlike other healthcare fields, physiotherapists are less inclined to report errors or incidents, which hinders the implementation of preventive safety strategies (Gonzalez-Caminal *et al*., 2022).

2.3 Patient Safety Education in Healthcare Programs

2.3.1 Curriculum Gaps in Physiotherapy Education

Patient safety must not be left as part of the hidden curriculum in physiotherapy education. However, limited evidence exists to show the effective implementation of patient safety topics in physiotherapy programs. This lack of research raises concerns about whether physiotherapists receive sufficient training on patient safety (Acharya *et al*., 2023). Although placements offer practical insights, structured safety education is essential to improve awareness and encourage proactive management of risks. Additionally, simulated environments and case-based learning have shown promise in preparing students for real-world safety challenges, though adoption remains limited (Acharya *et al*., 2023). A study carried out by Aguilar-Rodríguez *et al*. (2021) revealed that ethical principles were frequently violated in physiotherapy. Experiences of physiotherapy students must be examined to tailor educational interventions prior to their initiation into practice.

Ethics education is needed in workplaces and should be increased in basic education

2.3.2 Safety Culture and Institutional Challenges

Safety culture refers to the shared attitudes, values, and norms within a healthcare organisation that influence the behaviours of individuals and teams concerning safety performance. A positive safety culture is linked to reduced error rates and better patient outcomes (BMC Health Services Research, 2023). Four critical areas of patient safety required improvement in a study carried out by Kaware *et al*. (2022) therefore, intervention is recommended to minimize unnecessary patient harm and medical expenses. Recent studies show that a robust safety culture is associated with better patient outcomes and higher staff engagement. However, many healthcare institutions still struggle with fostering a reporting culture, where staff feel encouraged to report incidents without fear of retribution (BMC Health Services Research, 2023; ECRI, 2024).

2.3.3 Integration of Patient Safety in Curricula

Despite global efforts, Nigeria lacks dedicated undergraduate programs in patient safety across medical and allied health disciplines. Instead, safety concepts are often diffused across courses like pharmacology, public health, and ethics (Al-Worafi, 2024). A cross-sectional study by Acharya *et al*. (2023) emphasized that while Nigerian universities acknowledge the importance of patient safety, the integration into physiotherapy curricula remains inconsistent and limited. This curricular deficiency is critical, as physiotherapy increasingly involves high-risk interventions such as mobility training, neurological rehabilitation, and musculoskeletal manipulation—all of which carry safety risks if improperly handled. The Global Patient Safety Action Plan 2021–2030 by WHO recommends that all healthcare training programs systematically incorporate safety competencies, simulation training, and clinical risk management (WHO, 2024). The inclusion of patient safety topics in healthcare curricula is still limited. Expanding these topics is vital to promote safer healthcare practices and better prepare future healthcare professionals (Al-Worafi, 2024).

Training healthcare professionals, including physiotherapists, to understand and prioritise safety remains a significant challenge. Integrating patient safety education into health science curricula is essential to equip students with the necessary competencies (Acharya *et al*., 2023). Simulation-based learning and clinical placements are valuable tools for bridging the gap between theory and practice (ECRI, 2024). This hands-on exposure helps students develop confidence and competence in managing patient safety risks during their transition into practice. Patient safety competencies for physiotherapists extend beyond basic injury prevention to include the psychosocial factors that influence rehabilitation outcomes. In a study conducted in South-West Nigeria, Dada & Akingbesote, (2023) examined the link between fear of falling, meaningful activity participation, and community reintegration among stroke survivors. The findings revealed that increased fear of falling negatively impacted both participation in daily activities and reintegration into the community, while meaningful activity engagement was the strongest predictor of successful reintegration.

These outcomes emphasize the critical need for physiotherapy students to be trained not just in technical safety skills but also in psychosocial risk management, including fear assessment, fall history evaluation, and the design of patient-specific interventions. Unfortunately, such nuanced safety training is often missing from Nigerian physiotherapy curricula, reinforcing the need for reform that includes fall prevention education, patient-centered goal setting, and community reintegration strategies.

2.3.4 Simulation-Based Learning and Practical Training for Patient Safety

Simulation-based learning is a validated strategy for improving healthcare students' safety competencies. Through standardized patients and clinical scenarios, simulation allows learners to develop communication, risk recognition, and crisis response skills in a low-risk setting (Phillips *et al*., 2017). Simulation-based learning is one approach to improving patient safety education. A simulated environment with standardised patients exposes students to real-world scenarios in a low-risk setting, helping them gain confidence before handling actual patients (Acharya *et al*., 2023.). This method enables students to develop practical skills and safety awareness, better preparing them for professional practice. University-based teaching and learning strategies aim to develop the foundational abilities of knowledge, skills, attitudes, values and judgements for competent physiotherapy practice. Classroom-based learning includes practice of assessment and techniques with student peers in role-play scenarios. Supervised clinical placements then provide experiential learning where students gain concrete experience, and have opportunities for observation and reflection, formation of abstract concepts and practising new skills. (Phillips et *al*., 2017). In Nigeria, limited access to simulation labs, resource constraints, and undertrained faculty restrict the widespread implementation of this pedagogy. However, where used, simulation has shown promise in bridging the theory–practice gap in physiotherapy safety training, particularly in cardiopulmonary, neurological, and orthopedic care modules (Acharya *et al*., 2023).

2.3.5 Research in Patient Safety Education

Although limited studies have evaluated physiotherapy-specific safety training in Nigeria, research by Mbada *et al*. (2015) found that licensed physiotherapists expressed doubts about the adequacy of their professional education in preparing them for independent clinical decision-making. These findings suggest that education around safety and autonomy may be insufficiently emphasized even beyond undergraduate training.

The limited research on patient safety education in medical and health sciences schools makes it difficult to understand the current practices and challenges. Conducting research will help identify gaps and suggest interventions to improve patient safety education and clinical practice (Al-Worafi, 2024).

2.4 Brief history of Thomas Adewumi University

Thomas Adewumi University is situated in Oko-Irese, about 6 km from Omu Aran, the headquarters of Irepodun Local Government Area and 90 km from Ilorin, the capital city of Kwara state. Oko is accessible by air to the Ilorin International Airport and is about 450 km from Abuja by road (DECROWN WEST AFRICA COMPANY, 2021). The ethos of the Thomas Adewumi University is excellence, and the institution aims to become a major key player in the delivery of university education of the highest quality in Nigeria, as well as to produce graduates who would benefit themselves and be the human capital for the rapid and much needed socio-economic development of the country. The attainment of this goal is a major challenge and a serious commitment, which the Thomas Adewumi University expects to achieve through careful planning and adequate deployment of human and material resources.

The proprietor of the Thomas Adewumi University approached the National Universities Commission in 2008 to commence procedures for obtaining a licence for the University. The proprietor obtained the application form for the establishment of a private university in Nigeria from the NUC in 2010. The Directors of Decrown West Africa Company Limited also constituted a Planning and Implementation Committee to midwife the process of obtaining the licence, so that the University could commence academic activities.

The Federal Government of Nigeria licensed TAU as a Private University on 8th April 2021. Thomas Adewumi University currently has 17 faculties and 28 departments. (Thomas Adewumi University, 2024).

2.5 Brief History of the University of Ilorin

The University of Ilorin is located in the ancient city of Ilorin, about 500 kilometres from Abuja, the Federal capital. Ilorin, the Capital of Kwara State, is strategically located at the geographical and cultural confluence of the North and South. University of Ilorin was one of the seven institutions of higher learning established by a decree of the Federal Military Government in August 1975. This step, taken to implement one of the educational directives of the country's Third National Development Plan, was aimed at providing more opportunities for Nigerians aspiring to acquire university education and to generate high-level man-power, so vital for the rapidly expanding economy. The University of Ilorin currently has 16 faculties and 130 departments. (University of Ilorin, 2025)

2.6 Conclusion

The literature highlights significant gaps in patient safety education across healthcare programs, particularly in physiotherapy. While professions like medicine and nursing have embedded patient safety into their practice, physiotherapy is still developing this focus. To address these challenges, expanded curricula, more research, and awareness campaigns are essential. Simulation-based learning and preventive systems based on Reason's theory offer potential solutions to improving safety in healthcare.

Table 1: Summary of Analysis of Core Literature on Knowledge, Perception, and Attitude Towards Patient Safety Among Clinical Year Physiotherapy Students in Kwara State, Nigeria.

S/N	AUTHORS	STUDY DESIGN	METHODS	LOCATION	RESULTS	DEDUCTION FROM FINDING
1.	Atakora et al. (2021)	Cross-sectional descriptive	Questionnaire on knowledge, perception, attitudes towards patient safety	Ghana	Moderate knowledge and positive attitude; curriculum gaps noted	Early clinical exposure supports good safety attitudes, but formal teaching still lags
2.	Dada & Akingbesote (2023)	Cross-sectional study	Structured questionnaires on falls and activity	South-West Nigeria	Fear of falling reduced community reintegration	Emphasizes need for safety-centric rehab planning to prevent social withdrawal
3.	Jose et al.	Longitudinal observational study	Patient safety knowledge/attit	Spain	Significant improvement in	Longitudinal learning

	(2022)		ude scale at 2 time points		safety awareness over time with curriculum exposure	reinforces patient safety, proving curricular integration works
4.	Makary & Daniel (2016)	Commentary with literature synthesis	Review of existing U.S. mortality data	United States	Estimated medical errors as 3rd leading cause of death	Elevates global urgency for systemic safety reforms and accurate error reporting
5.	Mbada et al. (2015)	Cross-sectional survey	Questionnaire on perception of direct access/self-referral	Nigeria	Over half were unaware or unsure about direct access implications	Reveals knowledge gaps in professional autonomy, affecting safe independent decisions
	Odole et al.	Cross-sectional	Survey of students and	South-west Nigeria	Mixed perceptions:	Training involving

	(2024)	descrfiptive	lecturers on simulated patients in exams		students found simulated patients helpful, lecturers were cautious about standardization	simulated patients improves realism but needs policy support for broad acceptance

CHAPTER THREE

MATERIALS AND METHODOLOGY

3.1 Participants

The participants in this study comprised clinical physiotherapy students in their 300, 400, and 500 levels from Thomas Adewumi University and University of Ilorin. The age range of the respondents was between 18 and 27 years, covering both male and female students who were actively undergoing clinical training during the time of data collection. The participants were selected using a stratified random sampling technique to ensure fair representation across the three levels of clinical training.

3.2 Participant Selection

3.2.1 Inclusion Criteria

The following participants were included in the study:

1. Participants who were studying physiotherapy at Thomas Adewumi University.

2. Participants who were studying physiotherapy at the University of Ilorin.

3. Participants who were in clinical years of their respective programmes .

4. Participants who voluntarily agree to participate in the study and provide informed consent.

5. Participants who have spent at least a semester in clinical rotations.

3.2.2 Exclusion Criteria

The following participants were excluded from the study:

1. Participants who do not provide informed consent.

2. Clinical students who have not yet participated in any clinical postings at the time of data collection

3. Participants who are currently on suspension from either institution

3.3 Materials/Instruments

3.3.1 Instrument

The instrument that was used for this study is the World Health Organization Medical School Curricular Guide for Patient Safety questionnaire (WHO, 2009).

3.3.2 DESCRIPTION OF INSTRUMENT

A self-administered questionnaire refers to a questionnaire that has been designed specifically to be completed by a respondent without the intervention of the researcher. The questionnaire utilized for this study is the World Health Organization Medical School Curricular Guide for Patient Safety questionnaire

(WHO, 2009). The guide has been pre-tested and validated in similar settings, including a study by Leung *et al*., (2010), which assessed its use among undergraduate medical students. A study conducted by Atakora *et al*., (2021) in Ghana, which used the same WHO instrument by adapting it for physiotherapy students, reported a Cronbach's alpha of 0.74, indicating acceptable internal consistency and reliability. Based on this, the instrument was deemed sufficiently validated and appropriate for use in this study population. As such, no further pre-testing was conducted.

The questionnaire comprises five sections, namely 'error and patient safety' which consists of seven items; 'safety of the healthcare system' which has six items; 'personal influence over safety' which has seven items as well as 'personal attitudes to patient safety' which consists of four items. The fifth section has nine items which deal with 'safety at the workplace'. The questionnaire is scored on a five-point Likert scale, which commences from one, indicating 'strongly disagree', to 5 for 'strongly agree' for the items. Scores were classified as low, moderate, and high levels with designated corresponding ranges

3.4 Methods

3.4.1 Sampling technique

The participants were selected using a stratified random sampling technique, and only those who met the inclusion criteria were included in the study. The participants were stratified by institution and level before random sampling. This helped to ensure adequate representation from both schools, all concerned levels, and eliminate bias.

3.4.2 Sample Size Determination

Taro Yamane's formula was used to calculate the sample size from the total population. A sample size of 179 was calculated using Taro Yamane's formula, *n* = N/1 + N (e2) (Yamane 1967).

$$\boldsymbol{n = N\sqrt{1} + N(e)^2}$$

Where:

n = required sample size

N = total population size

e = margin of error

Given:

- N=325
- e=0.05

Substituting into the formula:

$$\boldsymbol{n = N\sqrt{(1 + N(e)^2)}}$$

$n=325\sqrt{1}+325(0.05)^2$

$n=325\sqrt{1}+325(0.025)$

$n=325\sqrt{1}+0.8125$

$n=325\sqrt{1}.8125$

n=179

Attrition rate of 10% was considered

ns = nf/0.9

$ns = 179/0.9$

$ns = 198.88$

$ns \approx 199$

3.4.3 Research Design

This study had a cross-sectional descriptive and inferential analytical design.

3.4.4 Ethical Consideration

Ethical approval was sought and obtained from the Health Research Ethics Committee (UITH/CAT/189/VOL.21/828) of the University of Ilorin Teaching Hospital, Kwara State, on 26/11/2024 (Appendix Three).

3.4.5 Procedure for Data Collection

Before the commencement of the study, a copy of the ethical approval letter was obtained from the health research committee of the University of Ilorin Teaching Hospital on 26th November, 2024. Participants were recruited based on inclusion criteria, and informed consent was obtained after providing clear information about the study's purpose and procedures before administering a physical copy of the questionnaire. Participants were required to sign the consent form attached to the questionnaire. Participants were approached during break sessions at the hospital, and the questionnaires were handed out to be filled out and returned immediately after. The questionnaires took less than 10 minutes to be completed. Data collection took place between 17th December 2024 to 16th February 2024.

3.5 Data Analysis

Data generated from the study was analysed using the IBM Statistical Package for Social Sciences (SPSS) version 27 and summarised using descriptive statistics of bar chart, pie chart, percentage mean, and standard deviation. A Pearson Chi-square test was used to test for associations between the sociodemographic factors of respondents, their knowledge of patient safety, and their attitude towards patient safety. The level of significance was set at $P \leq 0.05$.

CHAPTER 4

RESULTS

This chapter presents the study findings of the statistical analysis of the data from this research work. Details of the work obtained are presented in tables and charts, which are shown as generated from the analysis.

4.1 Socio-Demographic Characteristics of Respondents

A total of 195 respondents participated in the study, and Table 2 presents the overall sociodemographic information. The data from Figure 2 shows the gender distribution, where 70(35.9%) were male and 125(64.1%) were female. The majority of respondents 118(60.5%) were between the ages of 21- 23, as shown in Figure 3, followed by 27.7% aged below 20 years, and 11.8% aged above 24 years. The mean age was 21.6 ±1.70, with a range from 18 to 27 years. Though all respondents were clinical students, 69(35.4%) were in 300 level, 66(33.8%) in 400 level, and 60(30.8%) in 500 level. Most participants 168(86.2%) were from the University of Ilorin, while 27(13.8%) were from Thomas Adewumi University.

Table 2: Sociodemographic characteristics of respondents

Variable	Frequency	Percentage %
Sex		
Male	70	35.9
Female	124	64.1
Age Group		
<20 years	54	27.7
21-23	118	60.5
>24	23	11.8
Level of Study		

300 level	69	35.4
400 level	66	33.8
500 level	60	30.8
Institution		
Thomas Adewumi University	27	13.8
University of Ilorin	168	86.2

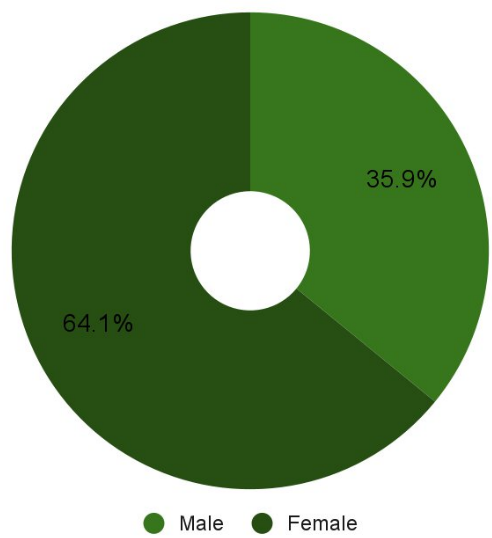

Figure 2: Distribution of Respondents by Sex

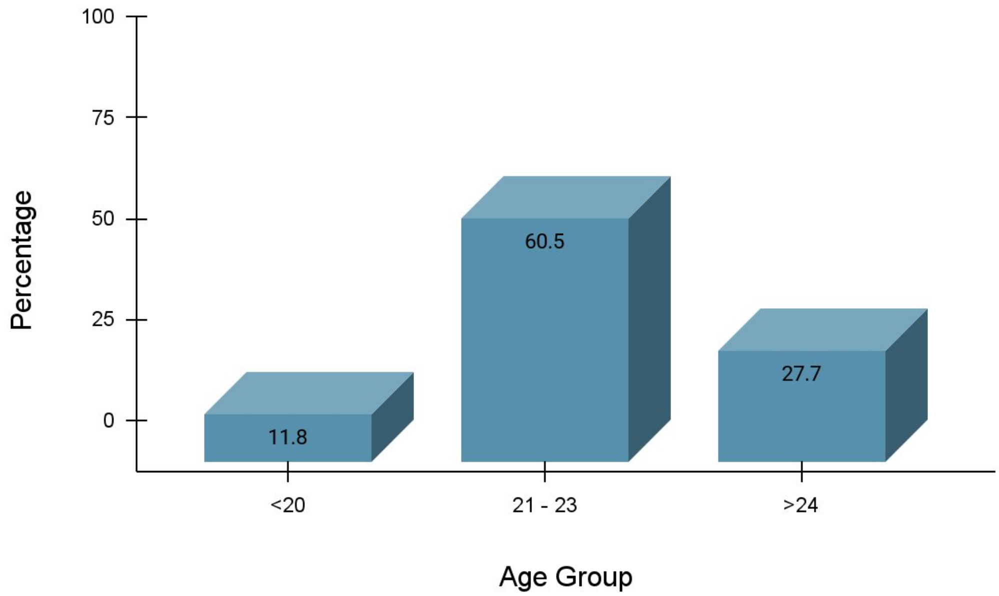

Figure 3: Distribution of Respondents by Age Group

4.2 Level of Knowledge on Patient Safety

Assessment of knowledge levels indicated that a majority of respondents had moderate knowledge across most aspects of patient safety. From Table 3, the results show that 76(39%) respondents have moderate knowledge of the different types of human error, 28(14.4%) have a high level of knowledge, and 5(2.6%) have a very high level of knowledge. 61(31%) respondents have a low level of knowledge, while 25(12.8%) have a very low level of knowledge. On factors contributing to human error, 20(10.3%) had very low level of knowledge, 73(37.4%) have moderate level of knowledge and 8(4.%) had very high level of knowledge. For the factors influencing patient safety, 11(5.6%) have very low level of knowledge, 80(41.0%) have moderate level of knowledge, while 12(6.2%) have very high knowledge. 27(13.8%) respondents have very low knowledge on ways to speak up about errors, 74(37.9%) have moderate knowledge, while 6(3.1%) have very high knowledge. On what should happen if an error is made, 16(8.2%) have very low level of knowledge about what to do, 59(30.3%) have moderate knowledge, while 14(7.2%) have very high knowledge.

After a chi-square analysis, a significant association was shown between the level of study and knowledge of patient safety, as shown on Table 4 ($\chi^2 = 12.472$, $p = 0.002$). No significant association was found between knowledge and sex, age group, or institution.

Table 3: Knowledge of Patient Safety Among Respondents

Knowledge Aspect	Very Low n(%)	Low n(%)	Neutral n(%)	High n(%)	Very High (%)
Different types of human error	25(12.8)	61(31.3)	76(39.0)	28(14.4)	5(2.6)
Factors contributing to human error	20(10.3)	51(26.2)	73(37.4)	43(22.1)	8(4.1)
Factors influencing patient safety	11(5.6)	34(17.4)	80(41.0)	58(29.7)	12(6.2)
Ways of speaking up about errors	27(13.8)	54(27.7)	74(37.9)	34(17.4)	6(3.1)
What should happen if an error is made	16(8.2)	59(30.3)	59(30.3)	47(24.1)	14(7.2)
How to report an error	26(13.3)	61(31.3)	75(38.5)	24(12.3)	9(4.6)
Role of health organisations	35(17.9)	63(32.3)	44(22.6)	39(20.0)	14(7.2)

Table 4: Association Between Knowledge and Socio-Demographic Factors

Variable	χ^2 Value	p-value
Sex	1.313	0.252
Age group	4.584	0.101
Level of study	12.472	0.002
Institution	3.573	0.059

4.3 Perception of the Safety of the Healthcare System

The perceptions of respondents regarding the safety of the healthcare system varied, with a significant proportion maintaining neutral responses across many indicators. Table 5 shows that 86(44%) of the respondents were neutral about whether most health workers make errors. 23(11.8%) respondents strongly disagreed that physiotherapy error is very common, 82(42.1%) are neutral while 4(2.1%) strongly agreed. 8(4.1%) strongly disagreed that it is very unusual for patients to be given the wrong therapy, 13(6.7%) strongly agree, while 74(37.9%) were neutral. Figure 3 shows respondents' perception on whether there was a safe system of healthcare for patients in the country, 82(42.1%) of the respondents disagreed, 35(17.9) strongly disagreed, 63(32.3) were neutral, 15(7.7%) agreed, while no one strongly agreed.

4.4 Safety at the Workplace

Participants generally perceived the workplace to be moderately supportive of patient safety, though neutrality was also prevalent. From table 6, results show that 78(40%) respondents agree that the physiotherapy assistants will be committed to identifying and addressing patient safety risks, while 8(4.1%) agree. Only 1(0.5%) respondent strongly disagreed that physiotherapists will be committed to identifying and addressing patient safety risks, while 92(47.2%) respondents agree. On whether being open and honest about the mistakes I make will be acceptable at my place of work, 7(3.6%) respondents strongly disagree while 79(40.5%) were neutral and 25(12.8%) agreed that it will be acceptable.

Table 5: Safety of the Healthcare System

Variables	Strongly disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)
Most health workers make errors	9 (4.6)	43 (22.1)	86 (44.1)	47 (24.1)	10 (5.1)
In my country there is a safe system of health care for patients	35 (17.9)	82 (42.1)	63 (32.3)	15 (7.7)	0 (0.0)
Physiotherapy error is very common	23 (11.8)	63 (32.3)	82 (42.1)	23 (11.8)	4 (2.1)

It is very unusual for patients to be given the wrong therapy	8 (4.1)	51 (26.2)	74 (37.9)	49 (25.1)	13 (6.7)
Healthcare staff receive training in patient safety	13 (6.7)	29 (14.9)	61 (31.3)	58 (29.7)	34 (17.4)
About one in ten hospital patients across the world will experience some kind of adverse event	9 (4.6)	26 (13.3)	66 (33.8)	65 (33.3)	29 (14.9)

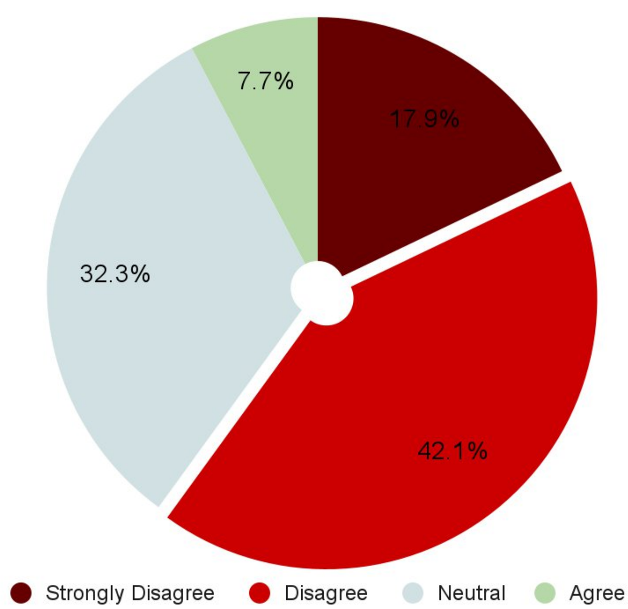

Figure 4: Pie Chart for Perception of Healthcare System Safety

Table 6: Respondents' Perception of Safety at the Workplace

Variables	Strongly disagree	Disagree (%)	Neutral (%)	Agree (%)	Strongly agree (%)

	(%)				
The physiotherapy assistants will be committed to identifying and addressing patient safety risks	8 (4.1)	17 (8.7)	64 (32.8)	78 (40.0)	28 (14.4)
The physiotherapy assistants will not criticize me for making mistakes	17 (8.7)	59 (30.3)	72 (36.9)	37 (19.0)	10 (5.1)
The physiotherapists will be committed to identifying and addressing patient safety risk	1 (0.5)	8 (4.1)	48 (24.6)	92 (47.2)	46 (23.6)
The physiotherapists will not criticize me for making mistakes	25 (12.8)	54 (27.7)	68 (34.9)	37 (19.0)	11 (5.6)
Managers in the healthcare system will make it easy to report errors	14 (7.2)	34 (17.4)	79 (40.5)	54 (27.7)	14 (7.2)
Managers in the healthcare system will be more interested in meeting performance targets than in patient safety	28 (14.4)	55 (28.2)	63 (32.3)	40 (20.5)	9 (4.6)

Managers in the healthcare system will expect us to focus on patient safety	6 (3.1)	17 (8.7)	52 (26.7)	74 (37.9)	46 (23.6)
Being open and honest about the mistakes I make will be acceptable at my place of work	7 (3.6)	17 (8.7)	79 (40.5)	67 (34.4)	25 (12.8)
Admitting an error I had made would lead to just and fair treatment by management	6 (3.1)	26 (13.3)	73 (37.4)	65 (33.3)	25 (12.8)

4.5 Respondents'Attitude to Patient Safety

Respondents demonstrated moderate confidence regarding their ability to influence patient safety, with substantial neutrality observed in some indicators. As seen on Table 7, 60(30.8%) respondents disagree that telling others about the errors they made would be easy, while only 5(2.6%) strongly agree that it would be easy. The majority of the respondents, 70(35.9%), agree that they are confident about speaking to someone who is showing a lack of concern for patient safety. The majority of the respondents, 86(44.1%), also agree that filling in report forms will help improve patient safety. 85(43.6%) agree that they are able to talk about their own errors, while 7(3.6%) strongly disagree. Findings indicated on Table 8 show that the majority of respondent exhibited positive attitudes toward acknowledging and learning from errors to promote patient safety. Most respondents, 86(44.1%), agree that concentrating on the cause of the incident can contribute to patient safety.

78(40%) each agree and strongly agree, respectively, that if they keep learning from mistakes, they can prevent incidents. The majority of respondents 90(46.2%), strongly agree that it is important for them to have learnt how to deal with errors by the end of their training. Figure 4 illustrates that 79(40.5%) respondents strongly agree that acknowledging and dealing with errors will be an important part of their job, 76(39.0%) agree, 30(15.4%) were neutral, 5(2.6%) and 5(2.6%) each disagree and strongly disagree.

Table 7: Personal Influence over Safety

Variables	**Strongly disagree (%)**	**Disagree (%)**	**Neutral (%)**	**Agree (%)**	**Strongly agree (%)**
Telling others about the errors that I made would be easy	20 (10.3)	60 (30.8)	59 (30.2)	51 (26.2)	5 (2.6)
It is easier to find someone to blame rather than focus on the causes of error	29 (14.9)	49 (25.1)	45 (23.1)	45 (23.1)	27 (13.8)
I am confident about speaking to someone who is showing lack of concern	10 (5.1)	32 (16.4)	58 (29.7)	70 (35.9)	25 (12.8)

for a patient safety					
I know how to talk to people who have made an error	8 (4.1)	43 (22.1)	80 (41.0)	59 (30.3)	5 (2.6)
I am always able to ensure patient safety is not compromised	3 (1.5)	28 (14.4)	68 (34.9)	78 (40.0)	18 (9.2)
I believe that filling in reporting forms will help to improve patient safety	5 (2.6)	19 (9.7)	47 (24.1)	86 (44.1)	38 (19.5)
I am able to talk about my own errors	7 (3.6)	30 (15.4)	57 (29.2)	85 (43.6)	16 (8.2)

Table 8: Respondents' Personal Attitudes to Patient Safety

Variables	**Strongly disagree (%)**	**Disagree (%)**	**Neutral (%)**	**Agree (%)**	**Strongly agree (%)**

By concentrating on the cause of incidents can contribute to patient safety	7 (3.6)	5 (2.6)	56 (28.7)	86 (44.1)	41 (21.0)
If I keep learning from mistakes I can prevent incidents	4 (2.1)	6 (3.1)	29 (14.9)	78 (40.0)	78 (40.0)
Acknowledging and dealing with my errors will be an important part of my job	5 (2.6)	5 (2.6)	30 (15.4)	76 (39.0)	79 (40.5)
It is important for me to learn how best to acknowledge and deal with errors by the end of my training	4 (2.1)	6 (3.1)	24 (12.3)	71 (36.4)	90 (46.2)

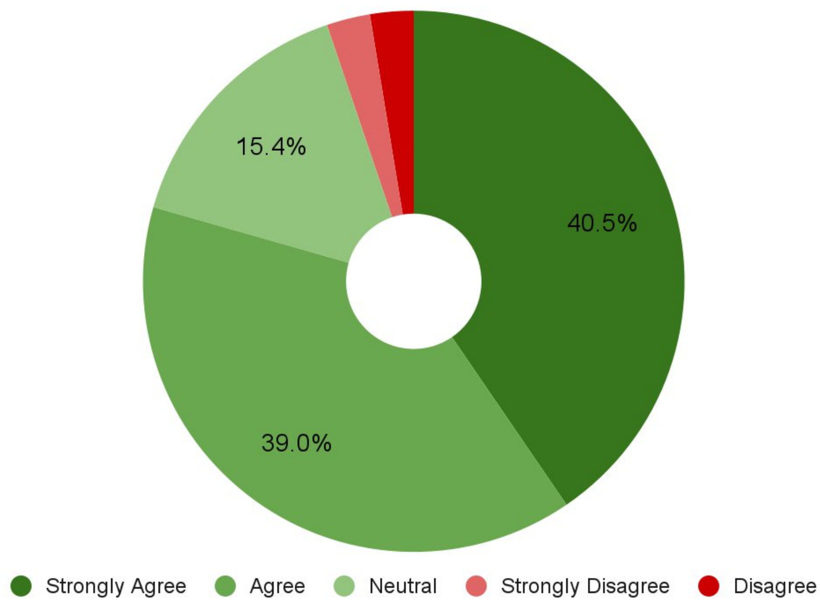

Figure 5: Pie Chart Showing Agreement with Acknowledging Errors is Important

4.6 Association Between Attitudes Toward Patient Safety and Socio-Demographic Characteristics

Table 5 presents the result of the chi-square analysis done to test for the association between attitude towards patient safety and sociodemographic characteristics. There was a significant association between the level of study and attitudes toward patient safety ($\chi^2 = 7.327$, $p = 0.026$). The higher the clinical class, the better the attitude towards patient safety. No significant association was found with sex, age group, or institution.

Table 5: Association Between Attitude and Socio-Demographic Factors

Variable	χ^2 Value	p-value
Sex	0.608	0.436
Age group	3.678	0.159
Level of study	7.327	0.026
Institution	0.254	0.614

CHAPTER 5

DISCUSSION, CONCLUSION, AND RECOMMENDATION

5.1 Discussion

Patient safety is the prevention of errors and adverse effects associated with healthcare delivery. This study was conducted to assess the level of knowledge, attitude, and perception towards patient safety amongst clinical year physiotherapy students in Kwara state. The focus on this demographic is because they are already exposed to patient care through clinical rotation, and they need to understand patient safety, as physiotherapy is fast becoming a first-contact practice in this climate.

The study revealed a predominance of moderate to low level of knowledge, which suggests gaps in formal patient safety instruction within the physiotherapy curriculum. This finding aligns with a study conducted by Atakora *et al*.,(2021) among clinical-year physiotherapy students in Ghana, where they demonstrated a moderate level of knowledge. Despite increasing global emphasis on patient safety, its integration into allied health education remains absent in many parts of Africa. The moderate to low knowledge in areas such as human error types, error reporting, and the role of health organizations indicates that students may lack exposure to core patient safety principles during training.

This is comparable to findings in similar Nigerian and sub-Saharan studies, where patient safety knowledge among health professional students was either underdeveloped or informal. This gap may hinder physiotherapists from confidently participating in multidisciplinary safety protocols during clinical practice.

Respondents' perceptions were characterized by neutrality and uncertainty, particularly around whether hospitals have safe systems in place. This may reflect the realities students encounter during clinical postings, where healthcare delivery may be hindered by inadequate staffing, lack of standard protocols, and poor resource allocation. As a result, students may recognize the efforts of individual professionals, yet remain unconvinced about the safety of the system itself.

This aligns with what the WHO has observed, that many developing countries face difficulties in building a culture of safety and accountability, which affects trust in health systems among both patients and future professionals (World Health Organization, 2018).

Despite only a few respondents having a high level of knowledge, and most respondents having a moderate level of knowledge, most respondents demonstrated positive attitudes toward patient safety, particularly in acknowledging the importance of learning from errors. This mirrors the findings from a study by Odole *et al*., (2024) where the majority of students had positive perceptions of simulated patient involvement, indicating a willingness to engage with patient safety initiatives. Such attitudes are noteworthy and suggest that with appropriate education and training, students can become strong advocates for patient safety. Tamuno-Opubo *et al*., (2024) report that Nigerian healthcare professionals, including students, generally understand the importance of patient safety but are often constrained by systemic limitations such as resource shortages, weak institutional frameworks, and lack of coordinated patient safety education. This supports the study's observation that although students understand safety principles, they often feel unprepared to implement them due to gaps in clinical supervision, institutional culture, or interdisciplinary collaboration.

Despite the moderate knowledge and mixed perceptions, the majority of respondents demonstrated positive attitudes by strongly agreeing that they acknowledge the importance of error reporting and learning from mistakes. This is noteworthy and suggests that the values needed to build a safety culture exist, even if formal systems and education do not fully support them yet. The study by Showande & Ibirongbe (2023) indicates broad support for Interprofessional education (IPE) and collaborative practice, which are essential components of patient safety.

Such attitudes are important as they form the foundation for professional behavior. However, it is also notable that not all respondents strongly agreed with these safety principles, highlighting the importance of targeted attitude-shaping strategies during training.

The study also revealed that the level of study significantly influenced both knowledge ($p = 0.002$) and attitude ($p = 0.026$), indicating that greater exposure through academic progression leads to increased awareness. Interestingly, this contradicts Atakora *et al*., (2021), who found no statistically significant association between the year of study and knowledge of patient safety ($p = 0.712$). This contrast might be explained by differing teaching methods or variations in clinical training experiences across institutions. The lack of association with age, sex, or institution suggests that knowledge and attitude are shaped more by experience and exposure than by personal or institutional variables. The significant association between level of study and both knowledge and attitude implies that increased clinical exposure enhances safety awareness and reflection. This further supports the study by Ferrández-Antón *et al*., (2022), which surveyed international healthcare students, highlighting how students' understanding of patient safety improves significantly when integrated into academic curricula and clinical placements.

5.2 Conclusion

This study found that while clinical year physiotherapy students in Kwara State have positive attitudes toward patient safety, their knowledge is moderate, and their perception of the healthcare system's safety remains uncertain. Clinical exposure appears to influence these outcomes, as those in higher academic levels demonstrated better knowledge and attitudes. This highlights a critical need to strengthen formal patient safety education within physiotherapy training programs and ensure students are adequately prepared to contribute to safer healthcare systems upon graduation.

5.3 Recommendations

Based on the findings of this study, the following recommendations are suggested;

1. Patient safety training should be incorporated into physiotherapy curricula, beginning in preclinical years.
2. Continuous professional development (CPD) modules should be established on patient safety for practicing physiotherapists.
3. Students should be encouraged to involve in quality improvement projects and safety audits during clinical rotations.
4. Longitudinal and multi-center studies should be conducted to better understand how patient safety knowledge evolves and how it influences real-world practice.

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APPENDIX I

INFORMED CONSENT FORM

Dear respondent,

My name is SHUAIB, SIMBIAT AHUOIZA, a final year student of the Physiotherapy department, Faculty of Basic Medical and Health Sciences, Thomas Adewumi University, Oko. I am conducting research titled "KNOWLEDGE, PERCEPTION AND ATTITUDE TOWARDS PATIENT SAFETY AMONGST CLINICAL YEAR PHYSIOTHERAPY STUDENTS IN KWARA STATE, NIGERIA". I will provide a Questionnaire that would require you to fill in some of your bio data and other research-appropriate data.

The data supplied in this questionnaire will only be utilised for the research purpose. Kindly read the instructions carefully and answer each question as honestly and accurately as you can. It is your right to either accept or refuse to participate in this study. You may ask questions or seek clarifications if you have any worries about this research; we would be ready to answer them.

I____

hereby testify that I have been fully informed about the research and what it entails. I therefore consent to be part of this research as a participant and promise to cooperate and be committed up to the end of the research.

_______________________ _______________________

Researcher’s Signature Respondent’s Signature

APPENDIX II

ETHICAL APPROVAL

UNIVERSITY OF ILORIN TEACHING HOSPITAL

Chairman:

Chief Medical Director:
PROF. YUSSUF ABDULLAH D.
(MB; BS., FMC Psych., Cert. Health Plan. & Mgt., Cert. Health Inform. Mgt., MCH, FIIA, FAPA, FCAI)

Ag Chairman Medical Advisory Committee:
PROF. BILIAMINU S.A.
MB; BS., (Ilorin), FMCPath; Cert. in Clin. Embryology (Chennai)

Director of Administration:
MR. A.F. AGBANA
B.Sc, M.Sc, FCAI, MACHE, MIHM, AHAN.

Old Jebba Road, Oke-Ose,
P.M.B. 1459, Ilorin,
Kwara State, Nigeria.

Website: www.uithilorin.org.ng
Email: info@uithilorin.org.ng

Telephone:
08055763942

Our Ref: UITH/CAT/189/VOL.21/828

Date: 26/11/2024

Shuaib Simbiat Ahuoiza
Dept. of Physiotherapy,
Faculty of Health Sciences,
Thomas Adewumi University
Oko
Kwara State.

APPROVAL TO COLLECT DATA FROM THE HOSPITAL

Please refer to your application on the above subject matter.

I am directed to convey Management's approval of your request to collect data from the Hospital. You are please requested to use the data strictly for the purpose stated in your application.

Dr. S.G. Akinwale is to give close supervision to this study.

Thank you.

Mr. R. T. Lawal
Secretary, HREC

APPENDIX III

QUESTIONNAIRE FOR ASSESSMENT OF LEVEL OF KNOWLEDGE, PERCEPTION, AND ATTITUDE TOWARDS PATIENT SAFETY AMONGST CLINICAL PHYSIOTHERAPY STUDENTS IN KWARA STATE, NIGERIA.

Dear Participant,

Thank you for participating in this research study. Your insights are valuable in furthering our understanding of this important factor in patient care. Kindly assist by providing honest answers by ticking (√) in the space provided. Please be assured that all responses will be kept strictly confidential and anonymous.

We are investigating the level of knowledge, perception, and attitude towards patient safety amongst clinical physiotherapy students in Kwara state, Nigeria.

Yours sincerely,

Shuaib S. A.

World Health Organization Patient Safety Curriculum Guide for Medical Schools

BACKGROUND INFORMATION

Sex……………………

Age………….

Year/Level of study……………….

Institution: Thomas Adewumi University / University of Ilorin (please underline)

Section 1: Error and Patient Safety

Please circle the number that best describes your level of knowledge for each item.

What is your level of knowledge regarding:	Low				High
1. Different types of human error?	1	2	3	4	5
2. Factors contributing to human error?	1	2	3	4	5
3. Factors influencing patient safety?	1	2	3	4	5
4. Ways of speaking up about errors?	1	2	3	4	5
5. What should happen if an error is made?	1	2	3	4	5
6. How to report an error?	1	2	3	4	5
7. The role of healthcare organisations (e.g., hospitals, general practitioners) in error reporting?	1	2	3	4	5

Section 2: Safety of the Healthcare System

Please tick the number that best describes your level of agreement for each statement.

1 = Strongly disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly agree

8. Most healthcare workers make errors. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

9. In my country there is a safe system of healthcare for patients. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

10. Physiotherapy error is very common. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

11. It is very unusual for patients to be given the wrong therapy. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

12. Healthcare staff receive training in patient safety. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

13. About one in 10 hospital patients across the world will experience some kind of adverse event. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

Section 3: Personal Influence over Safety

Thinking about your ability to influence patient safety, please tick the number that best describes your personal view for each statement.

1 = Strongly disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly agree

14. Telling others about an error I made would be easy. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

15. It is easier to find someone to blame rather than focus on the causes of error 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

16. I am confident about speaking to someone who is showing a lack of concern for a patient's safety 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

17. I know how to talk to people who have made an error. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

18. I am always able to ensure that patient safety is not compromised. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

19. I believe that filling in reporting forms will help to improve patient safety. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

20. I am able to talk about my own errors. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

Section 4: Personal Attitudes to Patient Safety

Thinking about your personal attitudes with regard to patient safety, please tick the number that best describes your own attitude for each statement.

1 = Strongly disagree   2 = Disagree   3 = Neutral   4 = Agree   5 = Strongly agree

21. By concentrating on the causes of incidents I can contribute to patient safety 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

22. If I keep learning from my mistakes, I can prevent incidents. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

23. Acknowledging and dealing with my errors will be an important part of my job. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

24. It is important for me to learn how best to acknowledge and deal with my errors by the end of my training. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

Section 5: Safety at the Workplace

Thinking about your expectations about patient care when you begin working, please tick the number that best describes your expectations for each statement.

1 = Strongly disagree 2 = Disagree 3 = Neutral 4 = Agree 5 = Strongly agree

25. The physiotherapy assistants will be committed to identifying and addressing patient safety risks. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

26. The physiotherapy assistants will not criticise me for making mistakes. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

27. The physiotherapists will be committed to identifying and addressing patient safety risks. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

28. The physiotherapists will not criticise me for making mistakes. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

29. Managers in the healthcare system will make it easy to report errors. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

30. Managers in the healthcare system will be more interested in meeting performance targets than in patient safety. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

31. Managers in the healthcare system will expect us to focus on patient safety. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

32. Being open and honest about the mistakes I make will be acceptable at my place of work. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

33. Admitting an error I had made would lead to just and fair treatment by management. 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ]

Thank you for taking the time to complete this questionnaire

APPENDIX IV
RAW DATA

SEX

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	70	35.9	35.9	35.9
	FEMALE	125	64.1	64.1	100.0
	Total	195	100.0	100.0	

AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18.00	2	1.0	1.0	1.0
	19.00	20	10.3	10.3	11.3
	20.00	32	16.4	16.4	27.7
	21.00	31	15.9	15.9	43.6
	22.00	61	31.3	31.3	74.9
	23.00	26	13.3	13.3	88.2
	24.00	13	6.7	6.7	94.9
	25.00	4	2.1	2.1	96.9
	26.00	5	2.6	2.6	99.5
	27.00	1	.5	.5	100.0
	Total	195	100.0	100.0	

LEVEL OF STUDY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	300	69	35.4	35.4	35.4
	400	66	33.8	33.8	69.2
	500	60	30.8	30.8	100.0
	Total	195	100.0	100.0	

INSTITUTION

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	THOMAS ADEWUMI UNIVERSITY	27	13.8	13.8	13.8
	UNIVERSITY OF ILORIN	168	86.2	86.2	100.0
	Total	195	100.0	100.0	

WHAT IS YOUR LEVEL OF KNOWLEDE REGARDING DIFFERENT TYPE OF HUMAN ERROR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	VERY LOW	25	12.8	12.8	12.8
	LOW	61	31.3	31.3	44.1
	NEUTRAL	76	39.0	39.0	83.1
	HIGH	28	14.4	14.4	97.4

	VERY HIGH	5	2.6	2.6	100.0
	Total	195	100.0	100.0	

WHAT IS YOUR LEVEL OF KNOWLEDGE REGARDING FACTORS CONTRIBUTING TO HUMAN ERROR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	VERY LOW	20	10.3	10.3	10.3
	LOW	51	26.2	26.2	36.4
	NEUTRAL	73	37.4	37.4	73.8
	HIGH	43	22.1	22.1	95.9
	VERY HIGH	8	4.1	4.1	100.0
	Total	195	100.0	100.0	

WHAT IS YOUR LEVEL OF KNOWLEDE REGARDINGFACTOR INFLUENCING PATIENT SAFETY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	VERY LOW	11	5.6	5.6	5.6
	LOW	34	17.4	17.4	23.1
	NEUTRAL	80	41.0	41.0	64.1
	HIGH	58	29.7	29.7	93.8
	VERY HIGH	12	6.2	6.2	100.0
	Total	195	100.0	100.0	

WHAT IS YOUR LEVEL OF KNOWLEDGE REGARDING WAYS OF SPEAKING UP ABOUT ERRORS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	VERY LOW	27	13.8	13.8	13.8
	LOW	54	27.7	27.7	41.5
	NEUTRAL	74	37.9	37.9	79.5
	HIGH	34	17.4	17.4	96.9
	VERY HIGH	6	3.1	3.1	100.0
	Total	195	100.0	100.0	

WHAT IS YOUR LEVEL OF KNOWLEDGE REGARDING WHAT SHOULD HAPPEN IF AN ERROR IS MADE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	VERY LOW	16	8.2	8.2	8.2
	LOW	59	30.3	30.3	38.5
	NEUTRAL	59	30.3	30.3	68.7
	HIGH	47	24.1	24.1	92.8
	VERY HIGH	14	7.2	7.2	100.0
	Total	195	100.0	100.0	

WHAT IS YOUR LEVEL OF KNOWLEDE REGARDING HOW TO REPORT

AN ERROR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	VERY LOW	26	13.3	13.3	13.3
	LOW	61	31.3	31.3	44.6
	NEUTRAL	75	38.5	38.5	83.1
	HIGH	24	12.3	12.3	95.4
	VERY HIGH	9	4.6	4.6	100.0
	Total	195	100.0	100.0	

WHAT IS YOUR LEVEL OF KNOWLEDGE REGARDING THE ROLE OF HEALTH CARE ORGANISATIONS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	VERY LOW	35	17.9	17.9	17.9
	LOW	63	32.3	32.3	50.3
	NEUTRAL	44	22.6	22.6	72.8
	HIGH	39	20.0	20.0	92.8
	VERY HIGH	14	7.2	7.2	100.0
	Total	195	100.0	100.0	

MOST HEALTH WORKERS MAKE ERRORS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	9	4.6	4.6	4.6

	DISAGREE	43	22.1	22.1	26.7
	NEUTRAL	86	44.1	44.1	70.8
	AGREE	47	24.1	24.1	94.9
	STRONGLY AGREE	10	5.1	5.1	100.0
	Total	195	100.0	100.0	

IN MY COUNTRY THERE IS A SAFE SYSTEM OF HEALTH CARE FOR PATIENTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	35	17.9	17.9	17.9
	DISAGREE	82	42.1	42.1	60.0
	NEUTRAL	63	32.3	32.3	92.3
	AGREE	15	7.7	7.7	100.0
	Total	195	100.0	100.0	

PHYSIOTHERAPY ERROR IS VERY COMMON

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	23	11.8	11.8	11.8
	DISAGREE	63	32.3	32.3	44.1
	NEUTRAL	82	42.1	42.1	86.2
	AGREE	23	11.8	11.8	97.9
	STRONGLY AGREE	4	2.1	2.1	100.0
	Total	195	100.0	100.0	

IT IS VERY UNUSUAL FOR PATIENTS TO BE GIVEN THE WRONG THERAPY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.5	.5	.5
	STRONGLY DISAGREE	8	4.1	4.1	4.6
	DISAGREE	51	26.2	26.2	30.8
	NEUTRAL	73	37.4	37.4	68.2
	AGREE	49	25.1	25.1	93.3
	STRONGLY AGREE	13	6.7	6.7	100.0
	Total	195	100.0	100.0	

HEALTHCARE STAFF RECEIVE TRAINING IN PATIENT SAFETY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	13	6.7	6.7	6.7
	DISAGREE	29	14.9	14.9	21.5
	NEUTRAL	61	31.3	31.3	52.8
	AGREE	58	29.7	29.7	82.6
	STRONGLY AGREE	34	17.4	17.4	100.0
	Total	195	100.0	100.0	

ABOUT ONE IN TEN HOSPITAL PATIENT ACROSS THE WORLD WILL KIND OF ADVERSE EVENT

		Frequency	Percent	Valid Percent	Cumulative

					Percent
Valid		1	.5	.5	.5
	STRONGLY DISAGREE	9	4.6	4.6	5.1
	DISAGREE	26	13.3	13.3	18.5
	NEUTRAL	65	33.3	33.3	51.8
	AGREE	65	33.3	33.3	85.1
	STRONGLY AGREE	29	14.9	14.9	100.0
	Total	195	100.0	100.0	

TELLING OTHERS ABOUT THE ERROR IMADE WOULD BE EASY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.5	.5	.5
	STRONGLY DISAGREE	20	10.3	10.3	10.8
	DISAGREE	60	30.8	30.8	41.5
	NEUTRAL	58	29.7	29.7	71.3
	AGREE	51	26.2	26.2	97.4
	STRONGLY AGREE	5	2.6	2.6	100.0
	Total	195	100.0	100.0	

IT IS EASIER TO FIND SOMEONE TO BLAME RATHER THAN FOCUS ON THE CAUSES OF ERROR

		Frequency	Percent	Valid Percent	Cumulative Percent

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	29	14.9	14.9	14.9
	DISAGREE	49	25.1	25.1	40.0
	NEUTRAL	45	23.1	23.1	63.1
	AGREE	45	23.1	23.1	86.2
	STRONGLY AGREE	27	13.8	13.8	100.0
	Total	195	100.0	100.0	

I AM CONFIDENT ABOUT SPEAKING TO SOMEONE WHO IS SHOWING A LACK OF CONCERN FOR A PATIENT SAFETY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	10	5.1	5.1	5.1
	DISAGREE	32	16.4	16.4	21.5
	NEUTRAL	58	29.7	29.7	51.3
	AGREE	70	35.9	35.9	87.2
	STRONGLY AGREE	25	12.8	12.8	100.0
	Total	195	100.0	100.0	

I KNOW HOW TO TALK TO PEOPLE WHO HAVE MADE AN ERROR

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	8	4.1	4.1	4.1
	DISAGREE	43	22.1	22.1	26.2
	NEUTRAL	80	41.0	41.0	67.2

		Frequency	Percent	Valid Percent	Cumulative Percent
	AGREE	59	30.3	30.3	97.4
	STRONGLY AGREE	5	2.6	2.6	100.0
	Total	195	100.0	100.0	

I AM ALWAYS ABLE TO ENSURE PATIENT SAFETY IS NOT COMPROMISED

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.5	.5	.5
	STRONGLY DISAGREE	3	1.5	1.5	2.1
	DISAGREE	28	14.4	14.4	16.4
	NEUTRAL	67	34.4	34.4	50.8
	AGREE	78	40.0	40.0	90.8
	STRONGLY AGREE	18	9.2	9.2	100.0
	Total	195	100.0	100.0	

I BELIEVE THAT FILLING IN REPORTING FORMS WILL HELP TO IMPROVE PATIENT SAFETY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	5	2.6	2.6	2.6
	DISAGREE	19	9.7	9.7	12.3
	NEUTRAL	47	24.1	24.1	36.4
	AGREE	86	44.1	44.1	80.5
	STRONGLY AGREE	38	19.5	19.5	100.0

	Total	195	100.0	100.0	

I AM ABLE TO TALK ABOUT MY OWN ERRORS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	7	3.6	3.6	3.6
	DISAGREE	30	15.4	15.4	19.0
	NEUTRAL	57	29.2	29.2	48.2
	AGREE	85	43.6	43.6	91.8
	STRONGLY AGREE	16	8.2	8.2	100.0
	Total	195	100.0	100.0	

BY CONCENTRATING ON THE CAUSES OF INCIDENTS I CAN CONTRIBUTE TO PATIENT SAFETY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	7	3.6	3.6	3.6
	DISAGREE	5	2.6	2.6	6.2
	NEUTRAL	56	28.7	28.7	34.9
	AGREE	86	44.1	44.1	79.0
	STRONGLY AGREE	41	21.0	21.0	100.0
	Total	195	100.0	100.0	

IF I KEEP LEARNING FROM MY MISTAKES I CAN PREVENT INCIDENTS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	4	2.1	2.1	2.1
	DISAGREE	6	3.1	3.1	5.1
	NEUTRAL	29	14.9	14.9	20.0
	AGREE	78	40.0	40.0	60.0
	STRONGLY AGREE	78	40.0	40.0	100.0
	Total	195	100.0	100.0	

ACKNOWLEDGING AND DEALING WITH MY ERRORS WILL BE AN IMPORTANT PART OF MY JOB

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	5	2.6	2.6	2.6
	DISAGREE	5	2.6	2.6	5.1
	NEUTRAL	30	15.4	15.4	20.5
	AGREE	76	39.0	39.0	59.5
	STRONGLY AGREE	79	40.5	40.5	100.0
	Total	195	100.0	100.0	

IT IS IMPORTANT FOR ME TO LEARN HOW BEST TO ACKNOWLEDGE AND DEAL WITH MY ERRORS BY THE END OF MY TRAINING

		Frequency	Percent	Valid Percent	Cumulative

					Percent
Valid	STRONGLY DISAGREE	4	2.1	2.1	2.1
	DISAGREE	6	3.1	3.1	5.1
	NEUTRAL	24	12.3	12.3	17.4
	AGREE	71	36.4	36.4	53.8
	STRONGLY AGREE	90	46.2	46.2	100.0
	Total	195	100.0	100.0	

THE PHYSIOTHERAPY ASSISTANTS WILL BE COMMITTED TO IDENTIFYING AND ADDRESSING PATIENT SAFETY RISKS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	8	4.1	4.1	4.1
	DISAGREE	17	8.7	8.7	12.8
	NEUTRAL	64	32.8	32.8	45.6
	AGREE	78	40.0	40.0	85.6
	STRONGLY AGREE	28	14.4	14.4	100.0
	Total	195	100.0	100.0	

THE PHYSIOTHERAPY ASSISTANTS WILL NOT CRITICISE ME FOR MAKING MISTAKES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	17	8.7	8.7	8.7
	DISAGREE	59	30.3	30.3	39.0

	NEUTRAL	72	36.9	36.9	75.9
	AGREE	37	19.0	19.0	94.9
	STRONGLY AGREE	10	5.1	5.1	100.0
	Total	195	100.0	100.0	

THE PHYSIOTHERAPISTS WILL BE COMMITTED TO IDENTIFYING AND ADDRESSING PATIENT SAFETY RISK

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	1	.5	.5	.5
	DISAGREE	8	4.1	4.1	4.6
	NEUTRAL	48	24.6	24.6	29.2
	AGREE	92	47.2	47.2	76.4
	STRONGLY AGREE	46	23.6	23.6	100.0
	Total	195	100.0	100.0	

THE PHYSIOTHERAPISTS WILL NOT CRITICISE ME FOR MAKING MISTAKES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	25	12.8	12.8	12.8
	DISAGREE	54	27.7	27.7	40.5
	NEUTRAL	68	34.9	34.9	75.4
	AGREE	37	19.0	19.0	94.4
	STRONGLY AGREE	11	5.6	5.6	100.0
	Total	195	100.0	100.0	

MANAGERS IN THE HEALTHCARE SYSTEM WILL MAKE IT EASY TO REPORT ERRORS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.5	.5	.5
	STRONGLY DISAGREE	14	7.2	7.2	7.7
	DISAGREE	34	17.4	17.4	25.1
	NEUTRAL	78	40.0	40.0	65.1
	AGREE	54	27.7	27.7	92.8
	STRONGLY AGREE	14	7.2	7.2	100.0
	Total	195	100.0	100.0	

MANAGERS IN THE HEALTH CARE SYSTEM WILL BE MORE INTRESTED IN MEETING PERFORMANCE TARGETS THAN IN PATIENT SAFETY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.5	.5	.5
	STRONGLY DISAGREE	28	14.4	14.4	14.9
	DISAGREE	55	28.2	28.2	43.1
	NEUTRAL	62	31.8	31.8	74.9
	AGREE	40	20.5	20.5	95.4
	STRONGLY AGREE	9	4.6	4.6	100.0
	Total	195	100.0	100.0	

MANAGERS IN THE HEALTHCARE SYSTEM WILL EXPECT US TO FOCUS ON PATIENT SAFETY

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		1	.5	.5	.5
	STRONGLY DISAGREE	6	3.1	3.1	3.6
	DISAGREE	17	8.7	8.7	12.3
	NEUTRAL	51	26.2	26.2	38.5
	AGREE	74	37.9	37.9	76.4
	STRONGLY AGREE	46	23.6	23.6	100.0
	Total	195	100.0	100.0	

BEING OPEN AND HONEST ABOUT THE MISTAKES I MAKE WILL BE ACCEPTABLE AT MY PLACE OF WORK

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	7	3.6	3.6	3.6
	DISAGREE	17	8.7	8.7	12.3
	NEUTRAL	79	40.5	40.5	52.8
	AGREE	67	34.4	34.4	87.2
	STRONGLY AGREE	25	12.8	12.8	100.0
	Total	195	100.0	100.0	

ADMITTING AN ERROR I HAD MADE WOULD LEAD TO JUST AND FAIR TREATMENT BY MANAGEMENT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	STRONGLY DISAGREE	6	3.1	3.1	3.1
	DISAGREE	26	13.3	13.3	16.4
	NEUTRAL	73	37.4	37.4	53.8
	AGREE	65	33.3	33.3	87.2
	STRONGLY AGREE	25	12.8	12.8	100.0
	Total	195	100.0	100.0	

AGEGRP

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<=20	54	27.7	27.7	27.7
	21-23	118	60.5	60.5	88.2
	24-27	23	11.8	11.8	100.0
	Total	195	100.0	100.0	

KNOWLEDGECORE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	7.00	4	2.1	2.1	2.1
	8.00	3	1.5	1.5	3.6

	10.00	2	1.0	1.0	4.6
	11.00	6	3.1	3.1	7.7
	12.00	4	2.1	2.1	9.7
	13.00	10	5.1	5.1	14.9
	14.00	7	3.6	3.6	18.5
	15.00	9	4.6	4.6	23.1
	16.00	16	8.2	8.2	31.3
	17.00	6	3.1	3.1	34.4
	18.00	14	7.2	7.2	41.5
	19.00	16	8.2	8.2	49.7
	20.00	15	7.7	7.7	57.4
	21.00	15	7.7	7.7	65.1
	22.00	6	3.1	3.1	68.2
	23.00	15	7.7	7.7	75.9
	24.00	6	3.1	3.1	79.0
	25.00	10	5.1	5.1	84.1
	26.00	10	5.1	5.1	89.2
	27.00	8	4.1	4.1	93.3
	28.00	8	4.1	4.1	97.4
	29.00	3	1.5	1.5	99.0
	31.00	1	.5	.5	99.5
	34.00	1	.5	.5	100.0
	Total	195	100.0	100.0	

KnowledgeGrp

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor (7-20)	112	57.4	57.4	57.4
	Good (21-35)	83	42.6	42.6	100.0
	Total	195	100.0	100.0	

Attitudescore

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	8	4.1	4.1	4.1
	1.00	7	3.6	3.6	7.7
	2.00	9	4.6	4.6	12.3
	3.00	11	5.6	5.6	17.9
	4.00	15	7.7	7.7	25.6
	5.00	21	10.8	10.8	36.4
	6.00	24	12.3	12.3	48.7
	7.00	34	17.4	17.4	66.2
	8.00	21	10.8	10.8	76.9
	9.00	19	9.7	9.7	86.7
	10.00	23	11.8	11.8	98.5
	11.00	3	1.5	1.5	100.0
	Total	195	100.0	100.0	

AttitudeGrp

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Poor <=5	71	36.4	36.4	36.4
	Good 6-11)	124	63.6	63.6	100.0
	Total	195	100.0	100.0	