PATIENT SAFETY CULTURE AMONG HEALTH CARE PROFESSIONALS AT THE KAKAMEGA COUNTY REFERRAL HOSPITAL, KENYA

ELIZABETH OSAGA MULUSA
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THIS RESEARCH THESIS IS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF A MASTER OF SCIENCE DEGREE IN CRITICAL CARE NURSING FROM THE KENYATTA UNIVERSITY SCHOOL OF HEALTH SCIENCE

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DECLARATION

Student Declaration

This thesis is my own creation and has not been submitted for the purpose of obtaining a degree to any other educational institution.

Signature: _____ Date: _____

Elizabeth Osaga Mulusa

R50/CE/25275/2018

SUPERVISORS' DECLARATION

This thesis has been submitted with our approval as University Supervisors.

Signature: _____ Date: _____

Dr. Sarah Bett

Department of Medical Surgical

Kenyatta University

Signature: _____ Date: _____

Mrs. Grace Gachuiri

Department of Medical Surgical

Kenyatta University

DEDICATION

To my family who encouraged and supported me throughput my studies, I extend my deepest gratitude. Your unwavering belief in me and constant encouragement made this journey possible. Above all, I am profoundly grateful to God for his enduring mercies and blessings, which sustained me every step of the way.

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ABBREVIATIONS AND ACRONYMS

AHRQ	Agency for Healthcare Research and Quality
AIDS	Acquired Immunodeficiency Syndrome
BSc	Bachelor of Science
CCU	Critical Care Units
DEV	Deviation
HIV	Human Immunodeficiency Virus
HSOPSC	Hospital Survey on Patient Safety Culture
ICU	Intensive Care Units
KCRH	Kakamega County Referral Hospital
KRCHN	Kenya Registered Community Health Nursing
MoH	Ministry of Health
PRN	Latin “Pro Re Nata” which means "as needed"
SDT	Self-Determination Theory
SPSS	Statistical Package for Social Sciences
STD	Standard
USD	United States Dollar
WHO	World Health Organizations

OPERATIONAL DEFINITION OF TERMS

Adverse events	An undesirable medical occurrence that can be caused by a drug or other treatment, such as surgery and not the underlying disease.
Critical care Unit	A hospital ward that provides specialized care for patients who are seriously ill or injured and require constant monitoring.
Demographic Characteristics	Characteristics of Crtitical Care Units workers. They include; the healthcare workers' age, gender, education level, and employment status.
Healthcare Professionals	People working in the hospital's critical care units to provide care and services to the sick and ailing.
Organizational Factors	These are the hospital characteristics that influence the perception of CCU healthcare workers. They include; hospital policies, leadership styles, communication styles and reporting styles.
Patient safety	This is the reduction to an acceptable minimum or complete absence of preventable harm associated with the healthcare process.
Safety Culture	These are attitudes, perceptions values, patterns, or competencies held by an individual or a group of individuals that influence their commitment and proficiency towards patient safety.

ABSTRACT

Patient safety is a crucial global measure of healthcare quality, as emphasized by the World Health Organization (WHO). A poor safety culture among healthcare professionals can lead to more adverse events, longer hospital stays, increased healthcare costs, and higher morbidity and mortality rates. A significant challenge in this area is the complex assessment of patient safety, with existing literature focusing mostly on managerial, staff, or policy perspectives. However, comprehensive studies examining the interplay between these elements are lacking. To address this gap, a study was conducted at Kakamega County Referral Hospital in Kenya, targeting the determinants affecting patient safety within critical care teams. Using an analytical cross-sectional design, the research included all healthcare providers in the Critical Care Units (CCUs). Data were collected via a self-administered questionnaire, which was analyzed using SPSS version 21. The questionnaire comprised eight sections, assessing healthcare professionals' perceptions of patient safety. The study summarized demographic variables such as age, gender, and years of experience, with descriptive statistics. Inferential analyses, including chi-square tests, evaluated perception variations between different professional groups, particularly nurses and doctors. Multivariate regression analyses explored the relationship between perceived safety factors and overall safety perceptions. Findings revealed a wide range of confidence levels among healthcare professionals regarding existing patient safety protocols. While some noted improvements, others pointed out substantial gaps. Demographic factors, particularly years of experience and education level, significantly influenced safety perceptions. Key issues affecting these perceptions included inadequate staffing, resource challenges, and the implementation of non-punitive error reporting systems. Identified barriers were communication failures, insufficient training on safety protocols, and systemic operational challenges within the hospital. The study highlighted the urgent need for improved training programs, enhanced communication strategies, and the cultivation of an organizational culture that promotes transparency around safety issues. A correlation was established between healthcare professionals' perceptions and measurable patient safety outcomes, such as incident reporting and adverse events. These insights can inform policy changes and practice improvements to enhance patient care. The recommendations stress the importance of healthcare systems prioritizing training on communication, teamwork, and error management; fostering a non-punitive culture for transparent error reporting; and optimizing resource allocation to resolve staffing issues. Strengthening interdepartmental communication through standardized protocols and regular evaluations, including staff feedback, is vital for ongoing improvement. Future research should focus on gender disparities in safety perceptions, organizational culture influence, training intervention effectiveness, long-term impacts of such interventions, comparative studies across various healthcare settings, and incorporating patient perspectives to drive significant safety enhancements.

CHAPTER ONE: INTRODUCTION

1.1 Introduction

This chapter provides the foundational context for the study, outlining the importance of patient safety as a critical component of healthcare quality. It begins by discussing the global and local significance of patient safety, particularly in low-resource settings like Kenya, where challenges such as inadequate infrastructure, staffing shortages, and limited resources exacerbate patient safety risks. The chapter then narrows its focus to Kakamega County Referral Hospital, a key healthcare facility in the region, and highlights the need to understand healthcare professionals' perceptions of patient safety in this context.

The chapter further presents the problem statement, emphasizing the rising incidence of adverse events due to unsafe care and the lack of focused research on patient safety perceptions in Critical Care Units (CCUs). The research questions and objectives are outlined, aiming to assess patient safety perceptions, identify influencing factors, and inform policy and practice. The significance of the study is discussed, highlighting its potential to improve patient safety outcomes and contribute to the broader body of knowledge. Finally, the chapter introduces the theoretical and conceptual frameworks guiding the study, rooted in the Self-Determination Theory, which emphasizes autonomy, competence, and relatedness as key drivers of healthcare workers' behavior and perceptions. This chapter sets the stage for the subsequent exploration of patient safety perceptions and their determinants at Kakamega County Referral Hospital.

1.2 Study Background

Patient safety is a critical component of healthcare quality, directly impacting the effectiveness of care provided in hospitals. The recognition of patient safety as a

paramount concern has led to the development of various strategies aimed at improving healthcare outcomes. In Kenya, specifically at the Kakamega County Referral Hospital, the perception of patient safety among healthcare professionals is essential for understanding the existing challenges and opportunities for enhancement.

1.2.1 The Influence of Demographic Factors on Patient Safety

The first section of this chapter focuses on how the demographic factors of a healthcare worker affect patient safety. It explores the relationship between healthcare workers' socio-demographic characteristics—such as age, gender, and work experience—and their perceptions of patient safety. The analysis reveals a divergence in findings, with some studies suggesting no significant correlation between demographic factors and patient safety perception, while others indicate that these factors can influence the quality of care delivered.

Research into the relationship between healthcare workers' perceptions and patient safety outcomes has yielded mixed results. Some studies, such as those by Mwachofi et al. (2011) and Khoshakhlagh et al. (2019), found no significant correlation between demographic factors and safety perceptions. However, other investigations within palliative care indicate that variables including age, gender, and professional experience do impact perceptions of care quality. Additionally, burnout—often exacerbated by facility policies related to extended working hours—emerges as a critical determinant of patient safety outcomes, irrespective of staff demographics.

Despite divergent findings, a consensus exists that a positive culture of patient safety is marked by open communication and effective teamwork, both essential for enhancing safety outcomes. Moreover, adopting a non-punitive approach to error

management has been recognized as a pivotal strategy for improving safety outcomes by fostering a culture conducive to self-assessment and learning.

1.2.2 The Influence of Organizational Factors on Patient Safety

The subsequent section reviews organizational factors and how they impact patient safety across hospital units. The section shifts the focus to organizational culture and its critical role in promoting patient safety. Highlighting the importance of a positive safety culture, this section identifies key elements—such as organizational learning, open communication, and teamwork—that contribute to an environment where patient safety is prioritized.

In the African context, patient safety challenges are significant due to constraints such as inadequate resources, substandard healthcare infrastructure, and a scarcity of trained professionals. These limitations substantially impact the perceptions and practices of healthcare providers. In response, initiatives to enhance patient safety have begun to take shape, exemplified by the establishment of the African Patient Safety Foundation (Muhammed & Fenta, 2024).

Kenya has identified patient safety as a crucial priority, leading to commitments from governmental agencies and healthcare providers to improve care quality. Key initiatives include the development of national patient safety guidelines and the integration of electronic health records, as outlined in the Kenya National Patient Safety Strategy 2018-2022.

Finally, the last section discusses how non-punitive responses to errors and the significance of institutional policies surrounding medical errors. It underscores the value of fostering a non-punitive response to errors, which allows for thorough self-

assessments and transparent reviews of care quality. This section illustrates how a constructive approach to error management is essential for enhancing patient safety and the overall effectiveness of healthcare services.

1.2.3 Health Worker Perceptions on Patient Safety

Patient safety is a critical component of healthcare quality, directly impacting the effectiveness of care provided in hospitals. The recognition of patient safety as a paramount concern has led to the development of various strategies aimed at improving healthcare outcomes. In Kenya, specifically at the Kakamega County Referral Hospital, the perception of patient safety among healthcare professionals is essential for understanding the existing challenges and opportunities for enhancement.

Healthcare professionals play a pivotal role in maintaining safety within clinical environments. Their attitudes, beliefs, and experiences significantly shape patient care practices. However, there is a growing body of evidence suggesting that healthcare workers' perceptions of patient safety can vary widely based on numerous factors, including organizational culture, policies, and the working environment. These perceptions can, in turn, influence the overall safety climate in healthcare settings.

The Kakamega County Referral Hospital serves a large population and is a crucial facility in the region, making the investigation of patient safety perceptions particularly relevant. Understanding how healthcare professionals perceive safety can highlight areas where interventions are needed and inform training and policy adjustments.

Despite the importance of these perceptions, studies focusing explicitly on patient safety within this context remain limited. This research aims to bridge that gap by

exploring the perceptions of healthcare professionals at Kakamega County Referral Hospital. By identifying key factors that impact these perceptions, the study seeks to contribute valuable insights that could enhance patient safety initiatives and improve healthcare outcomes in the region.

Generally, the exploration of patient safety perceptions among healthcare workers not only sheds light on current challenges but also provides a pathway for future improvements in healthcare delivery. This study recognizes the necessity of fostering a culture of safety and continuous improvement within the healthcare system, ensuring that patient safety remains at the forefront of professional practice.

The WHO defines patient safety as "the reduction to an acceptable minimum or complete absence of preventable harm associated with healthcare processes" (WHO, 2011). One of the global parameters in measuring healthcare quality is patient safety (Ammouri, et al., 2015). Patient safety is a multi-disciplinary assignment within healthcare facilities globally. Hence, the perception of healthcare workers' safety plays a pivotal role in maintaining and promoting patient safety. Provision of safe care has been posited to reduce patient morbidity, mortality, hospital stay, and costs (Abu-El-Noor, et al., 2019). Thus, health worker's perception of patient safety can be considered as the perceptions, attitudes, and competencies of an individual or group of individuals towards patient safety. Studies have opined that a weak patient safety culture among healthcare workers predisposes patients to adverse events that increase hospitalization costs and stay and might lead to further morbidity or mortality of the patient (Qoronbfleh, 2021).

Patient safety remains a critical concern globally, with estimates indicating that around 10% of patients suffer harm during healthcare delivery. The situation is even

more alarming in low- and middle-income countries, where studies suggest that up to 4% of patients may die due to unsafe medical practices (WHO Global Patient Safety Report 2024).

Several studies have confirmed that a strong patient safety culture can help in reducing adverse events in healthcare institutions. The WHO defines patient safety culture as "shared morals, attitudes, perceptions, beliefs and values" that foster safe, patient management conduct among healthcare workers (WHO, 2011). The promotion of patient safety has been posited as a tool that helps increase provider-patient satisfaction (Abuosi et al, 2019).

In Kenya, healthcare stakeholders and researchers have started promoting patient safety across the continuum of healthcare as an approach to lessen the likelihood of adverse consequences (MoH, 2019). The biggest challenge in understanding patient safety, however, is how to assess it. Different researchers have assessed and discussed patient safety differently. Patient assessment tools have been categorized as either taking a managerial or staff perspective, while some combine elements of both. Others still have used tools that focus on policies and practices. There is a paucity of studies that review the interaction of the three components to help understand the determinants of patient safety. Policy-driven studies review patient safety based on existing managerial perspectives on what the management sees occurring against what they need to see occurring in their health facilities. Others review policy based on the existence or absence of standard operating procedures in patient management. Staff perspective studies have employed tools measuring staff knowledge, perceptions, and attitudes. Instead of reviewing managerial or structural perspectives, these studies

focus on the perceptions of what occurs in the daily running of patient care and management.

This study was premised on studies conducted in Kenya, which have demonstrated that the Kenyan healthcare system has minimum patient safety standards (Kinuthia, 2018). Critical Care Units are the highest level of healthcare. Hence, it was imperative to establish what influences patient safety among healthcare workers working in the Critical Care Units in Kenya. Insights on this can help inform patient safety interventions and act as a baseline to help trigger further research that could inform policy change. To help substantiate this gap, this study sought to identify what influences patient safety among healthcare workers working in the critical care units (CCUs) at the Kakamega County Referral Hospital in Kenya.

1.3 Problem Statement

Patient safety remains a critical global healthcare challenge, with unsafe care contributing to approximately 2.4 million deaths annually, particularly in low- and middle-income countries like Kenya (WHO, 2024). Empirical evidence highlights that healthcare workers' perceptions of patient safety significantly influence safety practices and outcomes. Studies, such as those by Khoshakhlagh et al. (2019) and Abu-El-Noor et al. (2019), have demonstrated that factors such as organizational culture, staffing levels, and communication play a pivotal role in shaping these perceptions. However, in Kenya, and specifically at Kakamega County Referral Hospital, there is a notable lack of focused research on patient safety perceptions, particularly among healthcare professionals working in Critical Care Units (CCUs). This gap is concerning, as CCUs are high-risk environments where complex care and advanced technologies increase the likelihood of adverse events. Without addressing

this gap, healthcare disparities may persist, and patient safety initiatives may remain ineffective, leading to preventable harm, prolonged hospital stays, and increased healthcare costs.

The significance of this study lies in its potential to provide actionable insights into the factors influencing patient safety perceptions among healthcare workers in CCUs. By identifying key determinants such as demographic characteristics, organizational factors, and individual perceptions, the study aims to inform targeted interventions and policy adjustments. For instance, understanding how staffing levels, communication, and a non-punitive culture impact safety perception can guide the development of strategies to enhance patient safety. Furthermore, the study's findings could serve as a foundation for broader research and policy reforms, ultimately improving healthcare delivery and patient outcomes in Kakamega County and beyond.

The variables under study—demographic characteristics (e.g., age, gender, education), organizational factors (e.g., staffing, communication, leadership), and healthcare professionals' perceived factors (e.g., attitudes, training, workload)—are critical in fulfilling the study's aim. These variables provide a comprehensive framework for analyzing the multifaceted nature of patient safety perceptions. By examining how these factors interact and influence safety practices, the study seeks to uncover actionable insights that can drive improvements in patient safety culture, reduce adverse events, and enhance the overall quality of care in high-risk healthcare settings like CCUs.

1.4 Research Questions

1. What are the perceived levels of patient safety across hospital units that work closely with the CCU at the Kakamega County Referral Hospital?
2. How do the demographic characteristics of healthcare professionals influence their perceptions of patient safety across hospital units that work closely with the CCU at the Kakamega County Referral Hospital?
3. What organizational factors are perceived by healthcare professionals to influence patient safety across hospital units that work closely with the CCU at the Kakamega County Referral Hospital?
4. What factors, as perceived by healthcare professionals, impact patient safety across hospital units that work closely with the CCU at the Kakamega County Referral Hospital?

1.5 Research Objectives

1.5.1 Broad Objective

To assess the perception of patient safety among healthcare professionals working across the hospital units that work closely with the CCUs at the Kakamega County Referral Hospital

1.5.2 Specific Objective

1. To rate the perception of patient safety perception across the hospital units that work closely with the CCU at the Kakamega County Referral Hospital
2. To determine the healthcare professionals' demographic characteristics and how they influence their perception towards patient safety across hospital units that work closely with the CCU at the Kakamega County Referral Hospital.

3. To identify organizational factors that influence healthcare professionals' perception of patient safety across hospital units that work closely with the CCU at the Kakamega County Referral Hospital.
4. To identify healthcare professionals' perceived factors that impact patient safety across hospital units that work closely with the CCU at the Kakamega County Referral Hospital.

1.6 Significance of the Study

The findings of this study hold significant implications for improving patient safety practices and outcomes at Kakamega County Referral Hospital and similar healthcare settings. By identifying key factors influencing healthcare professionals' perceptions of patient safety, such as demographic characteristics, organizational culture, and individual attitudes, the study provides actionable insights for targeted interventions. For instance, the positive correlation between higher education levels and improved patient safety awareness underscores the need for ongoing training and education programs. Similarly, the study highlights the importance of fostering a non-punitive environment for error reporting, which can enhance transparency and learning from mistakes. These findings offer a roadmap for hospital administrators and policymakers to address critical gaps in resource allocation, staffing, and communication, ultimately fostering a stronger culture of patient safety and reducing preventable harm.

Moreover, the study's emphasis on the unique challenges faced by Critical Care Units (CCUs) sheds light on the need for context-specific strategies to improve patient safety in high-risk environments. The findings reveal that healthcare professionals in CCUs often work under significant stress due to high workloads and inadequate staffing, which negatively impacts their perceptions of patient safety. Addressing

these challenges through targeted interventions, such as optimizing staffing levels and improving interdepartmental communication, can lead to tangible improvements in patient care. By providing empirical evidence on the factors that shape patient safety perceptions, this study not only contributes to the body of knowledge but also serves as a foundation for future research and policy reforms aimed at enhancing healthcare quality and safety in resource-constrained settings.

1.7 Theoretical Framework

This study was guided by the Self-Determination Theory (SDT), a motivational framework developed by Deci and Ryan, which emphasizes three fundamental psychological needs—autonomy, competence, and relatedness—as key drivers of human behavior. These domains provide a robust lens for understanding how healthcare professionals' perceptions of patient safety are shaped and how these perceptions influence their practices. The theory's applicability to this study lies in its ability to explain the interplay between individual motivations, organizational culture, and patient safety outcomes, making it particularly relevant in the context of healthcare settings like Kakamega County Referral Hospital.

Autonomy, the need for individuals to feel in control of their actions and decisions, resonates strongly with the study's findings. The results indicate that healthcare workers who perceive greater autonomy in their roles—such as the ability to report errors without fear of punishment or to participate in safety policy development—demonstrate higher levels of patient safety awareness. This aligns with SDT's prediction that autonomy fosters intrinsic motivation and proactive behavior. For instance, the study found that a non-punitive environment for error reporting significantly improved safety perceptions, reflecting the importance of autonomy in

promoting transparency and learning. This finding is consistent with studies such as those by Basson et al. (2018), which highlighted that autonomy in error management enhances safety practices and reduces adverse events.

Competence, the need to feel capable and effective in one's role, is another critical domain of SDT that aligns with the study's findings. The results revealed that healthcare professionals with higher education levels and prior training in patient safety reported greater confidence in their ability to manage safety risks and implement safety protocols. This supports SDT's assertion that competence drives motivation and performance. For example, the study found that respondents who felt competent in identifying and addressing safety risks were more likely to engage in proactive safety practices. Similar findings were reported by Titlestad et al. (2018), who demonstrated that competence-building through training programs significantly improved patient safety outcomes in healthcare settings.

Relatedness, the need to feel connected to others and part of a supportive community, also plays a pivotal role in shaping patient safety perceptions. The study highlighted the importance of teamwork, open communication, and supportive leadership in fostering a positive safety culture. Healthcare workers who felt connected to their teams and supported by their supervisors were more likely to report errors and collaborate on safety improvements. This aligns with SDT's prediction that relatedness enhances motivation and collective action. For instance, the study found that units with strong teamwork and communication scored higher on patient safety metrics, reflecting the importance of relatedness in creating a cohesive safety culture. These findings are supported by studies such as those by Khoshakhlagh et al. (2019),

which emphasized the role of teamwork and supportive environments in improving safety outcomes.

The applicability of SDT in this context is further evidenced by its successful use in other healthcare studies. For example, research by Abu-El-Noor et al. (2019) applied SDT to explore the motivations of healthcare workers in reporting errors and found that autonomy and relatedness were critical in fostering a culture of safety. Similarly, Alsalem et al. (2018) used SDT to examine the impact of competence-building interventions on patient safety practices, demonstrating that enhancing competence led to significant improvements in safety outcomes. These studies, along with the findings of this research, underscore the theory's relevance in diverse healthcare contexts, particularly in resource-constrained settings where motivational factors play a crucial role in shaping safety practices.

In conclusion, the Self-Determination Theory provides a comprehensive framework for understanding the factors influencing patient safety perceptions among healthcare professionals. The study's findings resonate with the theory's predictions, demonstrating that autonomy, competence, and relatedness are critical drivers of safety practices. By aligning interventions with these psychological needs, healthcare organizations can foster a culture of safety, improve patient outcomes, and address the unique challenges faced in high-risk environments like CCUs. The theory's applicability across diverse contexts further highlights its value as a tool for enhancing patient safety in healthcare systems worldwide.

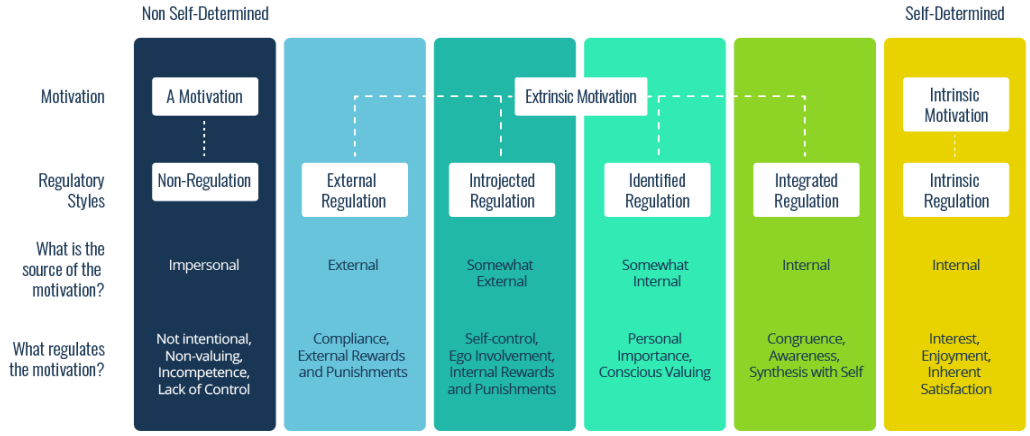

Figure 1.1: Self-Determination Theory Model (Cloke, 2022)

1.8 Conceptual Framework

The Self-Determination Theory (SDT) serves as the theoretical foundation for this study, emphasizing three core psychological needs—autonomy, competence, and relatedness—as key drivers of human behavior and motivation. These domains are operationalized in the Conceptual Framework, which maps the study variables to the theory's constructs, providing a clear pathway for understanding how these factors influence patient safety perceptions among healthcare professionals. The conceptual framework bridges the abstract principles of SDT with the specific variables under investigation, ensuring a structured approach to analyzing the study's findings.

Autonomy refers to the need for individuals to feel in control of their actions and decisions. In the conceptual framework, variables such as error reporting practices, involvement in safety policy development, and freedom to voice safety concerns fall under this domain. These variables reflect the extent to which healthcare professionals perceive they have the independence to make decisions and take actions that enhance patient safety. For example, the study found that a non-punitive environment for error

reporting (a key autonomy-related variable) significantly improved safety perceptions, aligning with SDT's prediction that autonomy fosters intrinsic motivation and proactive behavior.

Competence refers to the need to feel capable and effective in one's role. In the conceptual framework, variables such as education level, prior training in patient safety, confidence in identifying safety risks, and ability to implement safety protocols are linked to this domain. These variables measure the healthcare professionals' perceived ability to manage safety challenges effectively. The study's findings revealed that higher education levels and prior training (competence-related variables) were associated with greater patient safety awareness, supporting SDT's assertion that competence drives motivation and performance.

Relatedness refers to the need to feel connected to others and part of a supportive community. In the conceptual framework, variables such as teamwork, communication, leadership support, and organizational culture fall under this domain. These variables reflect the quality of relationships and collaboration among healthcare professionals and their supervisors. The study found that strong teamwork and supportive leadership (relatedness-related variables) were critical in fostering a positive safety culture, aligning with SDT's prediction that relatedness enhances motivation and collective action.

Mapping Variables to SDT Domains

The conceptual framework organizes the study variables into these three domains, as follows:

Autonomy: Error reporting practices, involvement in safety policy development, freedom to voice safety concerns.

Competence: Education level, prior training in patient safety, confidence in identifying safety risks, ability to implement safety protocols.

Relatedness: Teamwork, communication, leadership support, organizational culture.

How the Frameworks Align with Study Findings

The findings of the study resonate with the predictions of SDT, demonstrating that autonomy, competence, and relatedness are critical in shaping patient safety perceptions. For instance, healthcare professionals who reported higher levels of autonomy (e.g., freedom to report errors) and competence (e.g., confidence in managing safety risks) exhibited stronger patient safety awareness. Similarly, those who experienced high levels of relatedness (e.g., supportive teamwork and leadership) were more likely to engage in proactive safety practices. These results align with previous studies that have applied SDT in healthcare contexts, such as Abu-El-Noor et al. (2019), who found that autonomy and relatedness were critical in fostering a culture of safety, and Alsalem et al. (2018), who demonstrated that competence-building interventions improved safety outcomes.

Applicability of the Frameworks

The integration of SDT and the conceptual framework is applicable not only to this study but also to other healthcare contexts, particularly in resource-constrained settings. By identifying the specific variables that influence autonomy, competence, and relatedness, the frameworks provide a structured approach to designing targeted interventions to improve patient safety. For example, enhancing autonomy through non-punitive error reporting systems, building competence through training programs, and fostering relatedness through teamwork and leadership support can collectively create a culture of safety that transcends organizational and geographical boundaries. Generally, the theoretical and conceptual frameworks are intricately linked, with SDT providing the foundational principles and the conceptual framework operationalizing these principles into measurable variables. Together, they offer a comprehensive

understanding of the factors influencing patient safety perceptions and provide actionable insights for improving healthcare practices in diverse settings.

Conceptual Framework

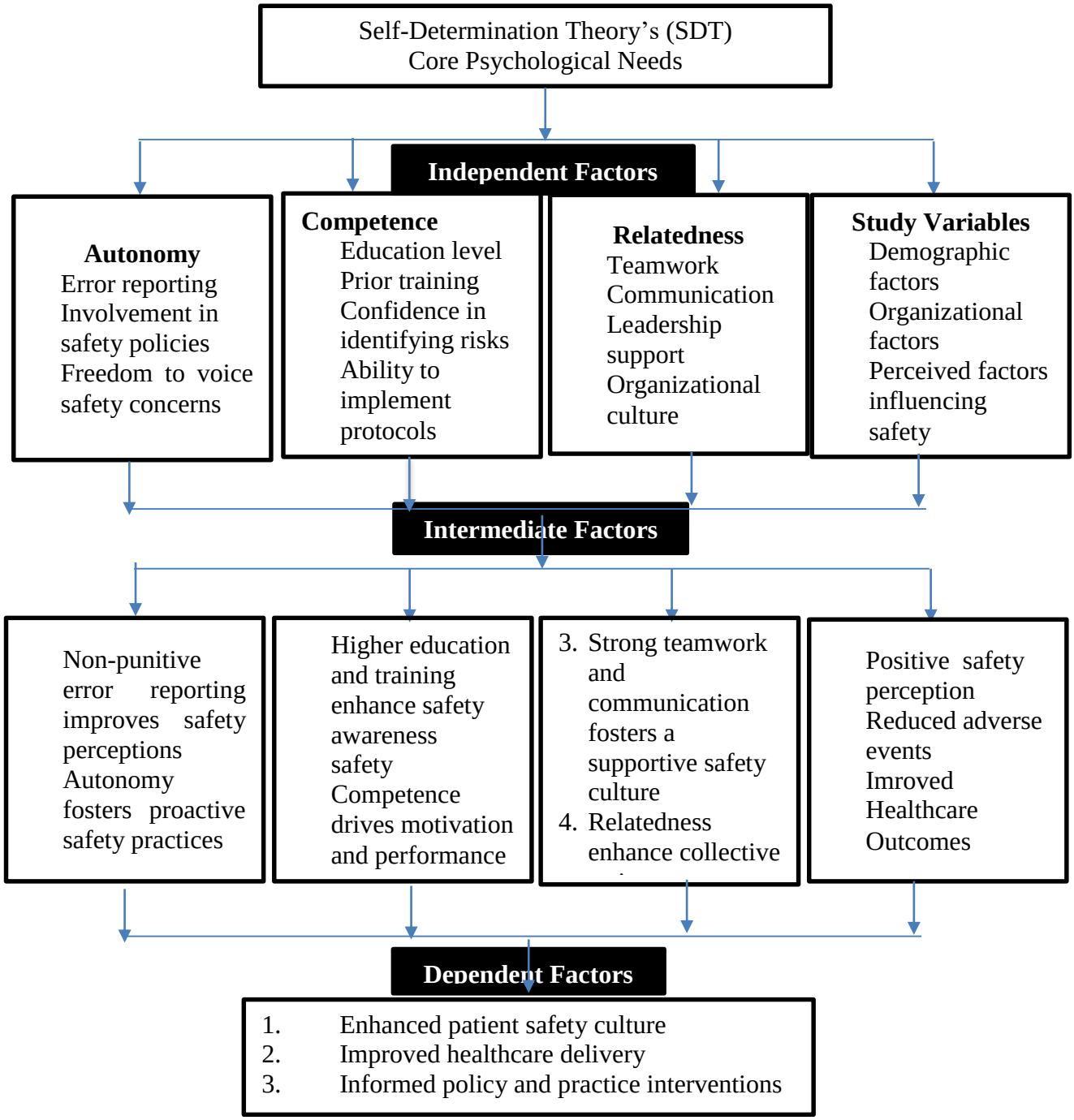

Figure 1.2: Conceptual Framework (Source: Author)

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter provides a comprehensive review of existing literature on patient safety, focusing on the multifaceted factors that influence healthcare professionals' perceptions and practices. It explores the interplay between demographic characteristics (e.g., age, gender, education), organizational factors (e.g., staffing, communication, leadership), and individual perceptions (e.g., attitudes, training, workload) in shaping patient safety outcomes. The chapter highlights the global significance of patient safety, particularly in low-resource settings like Kenya, where challenges such as inadequate infrastructure and staffing shortages exacerbate safety risks. By synthesizing findings from previous studies, this review establishes the theoretical and empirical foundation for the current research, identifying gaps in the literature and underscoring the need for context-specific investigations into patient safety perceptions in Critical Care Units (CCUs) and similar high-risk environments.

2.2 Demographic Factors Affecting Patient Safety

Numerous studies have explored the effects of healthcare workers' socio-demographic characteristics on their perceptions of patient safety, yielding a diverse range of outcomes. Hashemian et al. (2025) found no significant predictive relationship between socio-demographic factors and perceptions of patient safety. They suggested this might be due to the fluid nature of demographic attributes within organizations, influenced by staff turnover. In a similar vein, Nyberg et al. (2024) reported that variables such as age, work experience, gender, and station of deployment did not significantly impact perceptions of patient safety.

Contrarily, research within the realm of palliative care has indicated that socio-demographic factors do affect the quality of care provided by healthcare professionals (Fisher et al., 2021). Specifically, studies have shown that demographic elements, including age, gender, and experience, play a critical role in influencing care quality (Al Shayeb et al., 2024).

Moreover, evidence suggests that burnout resulting from extended working hours detrimentally affects patient safety (Zabin et al., 2023). Hashemian et al. (2025) reinforced this by demonstrating a positive correlation between burnout and compromised patient safety, independent of socio-demographic factors such as age, experience, gender, and workplace setting. This indicates that burnout is inherently linked to the challenges presented by the healthcare environment itself.

Furthermore, Nyberg et al. (2024) highlighted significant associations between hospital type, work shifts, and patient safety outcomes. They found that patient safety dimensions recorded lower scores during weekends compared to weekdays. Notably, while dimensions related to communication openness were rated more favorably, the non-punitive response to errors received poor assessments. Supporting this, Ayanaw et al., (2023) reported that private healthcare facilities exhibited lower patient safety scores than their public counterparts, with averages of 58.3% and 65.5%, respectively (Ayanaw et al., 2023).

2.3 Organizational Factors That Impact Patient Safety Across Hospital Units

A positive safety culture is critical as it shapes healthcare providers' behavior in such a way that patient safety becomes a priority within the organization. Studies have demonstrated that elements such as; organizational learning, open communication, teamwork, policies, non-punitive response to errors, timely feedback, and shared

cultural perceptions towards safety are critical in organizational safety and that organizations need to work towards fostering them into their culture (He et al., 2023).

2.3.1 Non-punitive Response to Errors

In the past decade, studies evaluating the impact of non-punitive responses to errors on patient safety have gained traction. A study by Rodziewicz et al. (2024) found that such responses enable healthcare institutions to conduct self-assessments of their safety practices and gain clarity on which aspects of patient safety require more attention. Moreover, further research has shown that non-punitive responses to medical errors facilitate more objective reviews of care gaps and improve the overall delivery of healthcare services.

Mistri et al. (2023) highlight that a positive patient safety environment allows healthcare providers to analyze their errors with the goal of enhancing patient safety. They suggest that to cultivate a positive safety culture, healthcare institutions must first evaluate their responses to nursing care errors. In conclusion, they recommend adopting a non-punitive approach to errors as a primary strategy for bolstering institutional capacity.

Similarly, Al Shayeb et al. (2024) emphasize that hospitals need to foster strong patient safety cultures before implementing structural interventions. They argue that having good infrastructure without a solid patient safety framework can lead to adverse patient outcomes. Their study concludes that a system where facilities can learn from medical mistakes is more sustainable than one focused solely on infrastructural development. They recommend establishing a robust patient safety culture based on non-punitive responses to errors, as this enables healthcare workers to learn from mistakes and improve patient outcomes.

Despite the highlighted benefits of non-punitive responses to errors, research continues to show low scores from healthcare workers regarding these practices. For instance, Hashemian et al. (2025) analyzed factors affecting patient safety in public and private hospitals in Iran and found that non-punitive responses received the lowest scores in both types of facilities. Similar findings were also reported by Abu-El-Noor et al. (2019).

2.3.2 Policy factors

The prevalence of medical errors is increasingly recognized by health policy-makers and stakeholders as a significant policy failure (Singh et al., 2024). Research indicates that the effectiveness of healthcare professionals can be severely compromised in environments lacking robust organizational frameworks. This deficiency impedes self-efficacy and competence, resulting in heterogeneous patient management strategies, dysfunctional workplace dynamics, occupational burnout, and psychological distress—all of which contribute to a compromised patient safety landscape (Izdebski et al., 2023).

Batanda (2024) illustrated that inadequate or poorly defined policy structures correlate with heightened levels of emotional exhaustion, depression, and diminished personal accomplishment, which can adversely affect patient outcomes. Their findings suggest that well-structured policies facilitate better planning and control, ultimately enhancing patient safety (Batanda, 2024). In a complementary analysis, Wisetborisut et al. (2020) highlighted the critical role of policy frameworks in delineating caregiver responsibilities and expectations, which in turn elevates standards of patient safety. Furthermore, the feedback loop created by these policies serves as a mechanism to assess the incidence of adverse patient outcomes (Wisetborisut et al., 2020).

In response to these concerns, Kenya has implemented the Kenya Health Policy 2014-2030 via the Directorate of Health Standards and Quality Assurance, aimed at ensuring safe and quality healthcare provision. However, the existing protocols, primarily a health facility inspection checklist, exhibit limited efficacy as they focus mainly on the maintenance of basic patient safety standards (MoH, 2019). Given the complex nature of patient safety, current national policies fail to comprehensively address the nuances of patient safety requirements (Loo et al., 2025). There is an urgent need for research aimed at identifying policy gaps and factors impacting patient safety, as well as the development of a comprehensive policy framework guiding healthcare providers on necessary actions to ensure patient safety. Assessment of patient safety outcomes, existing policy guidelines, and their implementation would be optimally conducted in County Level 5 hospitals, which are pivotal in managing a significant portion of national healthcare challenges.

2.3.3 Working environment

Kolmar (2021) conceptualizes the work environment as the actual space where work activities occur, encompassing physical infrastructure, facilities, working conditions, and organizational culture. A study by Banerjee et al. (2022) aimed to evaluate the correlation between work environment and patient safety, revealing that respondents in facilities characterized by suboptimal work environments reported diminished patient safety and higher rates of patient readmissions. They further identified that caregivers' perceptions of patient safety significantly impacted readmission likelihood.

Marsall et al. (2024) conducted a related study investigating the interplay between staffing levels and work environment on patient safety, specifically focusing on adult patients undergoing elective hip and knee replacements. Their findings indicated a positive association between poor patient safety outcomes and increased readmission rates, attributing this trend to inadequate staffing and substandard work environments. They advocated for a comprehensive approach among healthcare institutions to prioritize patient safety, considering the multifaceted factors that contribute to this culture and ultimately reduce postoperative readmission rates.

Adu and Zuma (2024) quantified the negative impact of patient safety on hospital stay duration, indicating that a 10% decline in patient safety corresponds with a 15% increase in length of stay. Similarly, Rodziewicz et al. (2024) presented evidence connecting positive clinical outcomes—such as reduced lengths of stay and fewer medication errors—with robust patient safety measures. This highlights an urgent need for further research to produce reliable data and effective tools for enhancing patient safety interpretation.

The World Health Organization (WHO, 2019) reports that millions suffer and die annually due to unsafe healthcare practices, identifying nine fundamental causes of death linked to poor patient safety: diagnostic errors, healthcare-associated infections, medication errors, radiation errors, sepsis, unsafe injection practices, risky surgical procedures, unsafe transfusion practices, and venous thromboembolism. While some studies like Shahian et al. (2017) found no significant link between patient safety and morbidity, others, such as Kumbi et al. (2020), demonstrated a strong positive correlation.

Shemsu et al. (2024) identified key factors negatively affecting patient safety scores, including work hours, staffing levels, teamwork, engagement in patient safety programs, and an environment conducive to reporting adverse patient outcomes. Conversely, Davenpor (2020) conducted an extensive study with 6,083 healthcare workers across 52 sites in the USA, concluding that factors such as working conditions, job satisfaction, teamwork, safety climate, and burnout did not show a significant correlation with morbidity and mortality.

Bayat et al. (2023) highlighted several administrative factors—such as cost-cutting measures, poor policies, inadequate standard operating procedures, rigidity, and a play-it-safe culture—as contributors to adverse patient outcomes. Prothero et al. (2024) stressed the critical role of leadership attitudes in the reporting and management of medical errors, advocating for the implementation of proper care pathways in the handling of medication errors to enhance the quality of patient care and safety (Chegini et al., 2019).

2.4 Healthcare Worker Perceptions of Patient Safety

Research on the perceptions of patient safety among different healthcare worker cadres reveals varied outcomes. Various studies have utilized diverse frameworks for evaluating these perceptions, incorporating both organizational and sociodemographic determinants (Titlestad et al., 2018). Within the context of healthcare worker roles, nurses stand out as the primary caregivers involved in medication administration and patient care, making their attitudes towards patient safety crucial for effective care delivery (Abu-El-Noor et al., 2019; Chegini et al., 2020). Evidence establishes a robust link between providers' perceptions of care and patient safety outcomes, indicating that healthcare workers with a favorable view of

patient safety are more inclined to achieve positive patient-related results (Janes et al., 2021).

Investigations into the interplay between healthcare providers' perceptions and their clinical competencies have significant implications for the overall quality of care. However, literature presents mixed conclusions regarding patient safety outcomes (Sharkiya, 2023). Mohammadi et al. (2024) assert that negative perceptions and limited familiarity with patient safety protocols impede effective safety practices. Their work delves into the correlations between nurses' perceptions and the overarching context of patient safety.

Khoshakhlagh et al. (2019) posit that healthcare workers who are reluctant to address occupational burnout face prolonged workplace stress, which adversely impacts their perceptions of care and consequently, patient safety. This notion is echoed by Rotenstein et al. (2018), who identify that occupational stress—arising from physical, emotional, or psychological challenges—often intensifies when healthcare professionals refrain from communication due to anxieties about punitive repercussions or personal inhibitions regarding disclosing fatigue to supervisors. Burnout is characterized by increased emotional exhaustion, diminished work efficacy, and an elevated propensity for negative perceptions (Edú-Valsania et al., 2022). Furthermore, a lack of autonomy among healthcare providers exacerbates these challenges, resulting in diminished control over safety practices and limited capacity to report safety concerns or partake in the development of safety policies.

The resultant lack of autonomy can lead healthcare workers to psychologically disengage from their work environment, adversely affecting their perceptions of the workplace and the quality of care delivered, ultimately undermining patient safety.

Multiple studies have explored the consequences of provider autonomy; for instance, Abuosi et al. (2019) correlate the absence of autonomy with increased burnout levels among medical staff, attributing this state to exposure to various stressors that detrimentally impact patient care. Key factors include excessive workloads, interpersonal conflicts, inadequate emergency decision-making stemming from poor communication, workplace threats, and punitive repercussions linked to medical errors.

Moreover, Hayashi et al. (2020) draw connections between healthcare providers' perceptions of patient safety and multiple factors such as working hours, frequency of absences, and night-shift assignments. Their findings indicate significant correlations among work schedules, shift patterns, and rest periods that affect employees' perceptions of service delivery and, subsequently, patient safety. Despite the extensive exploration of the influence of worker autonomy on patient safety, there remains a paucity of research in Kenya, particularly within health facilities in Kakamega.

2.5 Chapter Summary

This study focused on the factors influencing healthcare professionals' perceptions and practices. While the review synthesizes findings from various studies, it also reveals significant methodological, geographical, and thematic gaps that warrant further investigation. These gaps present opportunities for your study to contribute novel insights, particularly in the context of Critical Care Units (CCUs) and other high-risk healthcare environments.

2.5.1 Methodological Gaps

The relationship between demographic factors and patient safety perceptions has proven to be a complex and often inconsistent subject of research. Studies exploring variables such as age, gender, education, and work experience have yielded conflicting results. For instance, while researchers Hashemian et al. (2025) and Nyberg et al. (2024) found no significant connections between these demographic factors and perceptions of patient safety, others, like Fisher et al. (2021) and Al Shayeb et al. (2024), identified strong correlations, particularly within palliative care settings. This inconsistency highlights a pressing need for more robust and context-specific methodologies to further investigate how demographic variables shape patient safety outcomes.

Furthermore, the predominant reliance on quantitative methods in these studies has left a gap in understanding the nuanced interplay between organizational culture, individual perceptions, and patient safety. Few studies have adopted mixed-methods approaches that merge quantitative data with qualitative insights, which could provide a more holistic view of these dynamics.

Another challenge in this field is the variability in measurement. Researchers have employed a range of frameworks and tools to assess patient safety perceptions, making cross-study comparisons difficult. To address this, there is a call for standardized instruments and longitudinal studies that ensure consistency and reliability in measuring patient safety outcomes. Only through these concerted efforts can the complexities surrounding patient safety perceptions truly be unraveled.

2.5.2 Geographical Gaps

The underrepresentation of low-resource settings in the discourse on patient safety remains a significant issue, particularly as the majority of existing research is predominantly focused on high-income countries. This gap is especially pronounced in countries like Kenya, which grapple with a myriad of challenges that can compromise patient safety. These challenges include inadequate healthcare infrastructure, chronic staffing shortages, and limited access to essential training for healthcare professionals. Consequently, the need for focused research in critical care units (CCUs) within these settings becomes evident, as the risks associated with patient safety are often exacerbated in environments that lack the necessary resources and support systems.

Moreover, while Kenya has embarked on ambitious initiatives aimed at enhancing patient safety—most notably through the Kenya Health Policy 2014-2030—there remains a notable scarcity of empirical research evaluating the implementation and effectiveness of these policies at the county level. This is particularly true within Level 5 hospitals, which serve as key healthcare providers in the country. Investigating these policy gaps and their ramifications on patient safety outcomes in Kenyan healthcare facilities presents an essential avenue for research. Such studies could illuminate the specific challenges and opportunities within low-resource settings, ultimately contributing to the body of knowledge aimed at improving patient safety and care quality across diverse healthcare contexts.

2.5.3 Thematic Gaps

In contemporary healthcare settings, non-punitive responses to errors have emerged as critical components for improving patient safety. Despite numerous studies evidencing the advantages of such approaches (Rodziewicz et al., 2024; Mistri et al., 2023), a persistent challenge remains: healthcare facilities frequently exhibit low implementation scores in this area (Hashemian et al., 2025; Abu-El-Noor et al., 2019). These findings highlight a significant gap in understanding the barriers that hinder effective integration of non-punitive practices into organizational cultures, particularly in low-resource environments.

Further complicating this landscape is the current state of policy implementation and evaluation. In Kenya, for instance, the existing health facility inspection checklist prioritizes basic safety standards; however, it falls short of addressing the nuanced complexities inherent in high-risk settings such as Critical Care Units (CCUs). A rigorous evaluation of these policies is imperative to identify existing gaps and assess their effectiveness in fostering patient safety.

The work environment and staffing levels also play a fundamental role in shaping patient safety outcomes. Research conducted by Banerjee et al. (2022) and Marsall et al. (2024) underscores the negative impact of suboptimal environments and insufficient staffing on safety. Nevertheless, there remains a paucity of studies that dissect how these factors interplay specifically within CCUs. Investigating the unique challenges faced by CCU personnel could yield targeted interventions aimed at enhancing safety measures.

Moreover, the autonomy of healthcare workers and the prevalence of burnout are issues well-documented in the literature, highlighting their critical influence on patient

safety (Khoshakhlagh et al., 2019; Rotenstein et al., 2018). However, limited research exists concerning how these challenges manifest within the context of Kenyan healthcare, particularly in regions like Kakamega. Investigating these dimensions could provide essential insights that inform strategies to bolster patient safety in comparable settings.

Lastly, the role of cultural and organizational factors cannot be overlooked. While the necessity of cultivating a robust safety culture is widely acknowledged, empirical studies often reveal that healthcare professionals perceive a lack of institutional support for such an environment (He et al., 2023). Therefore, further research is needed to elucidate the barriers that obstruct the development of a positive safety culture and to formulate strategies that address these challenges. Collectively, these areas of inquiry represent significant opportunities for advancing patient safety and improving healthcare delivery in Kenya and similar contexts.

2.5.4 Opportunities for this Study

The investigation of patient safety within Critical Care Units (CCUs) presents an opportunity to address critical gaps in our understanding, particularly in low-resource settings such as Kakamega, Kenya. In these contexts, the systemic challenges that prevail often exacerbate risks to patient safety, underscoring the need for targeted research that can illuminate these specific issues. By focusing on CCUs in these under-resourced environments, scholars can contribute valuable insights that may drive improvements in healthcare delivery and patient outcomes.

Furthermore, an evaluation of existing policies governing patient safety in these settings is vital. Identifying gaps in policy implementation not only highlights

deficiencies in current frameworks but also informs the development of more robust, comprehensive patient safety protocols. Such policy and practice recommendations are essential for enhancing the overall quality of care in critically underserved regions.

In undertaking this research, employing interdisciplinary approaches will yield a richer understanding of the factors influencing patient safety. Insights drawn from organizational psychology, human factors, and healthcare management can provide a nuanced perspective that considers the complex interplay between healthcare systems and the human elements at play.

Moreover, it is crucial to focus on the perceptions and practices of healthcare workers in understudied populations, particularly in regions like Kakamega. Investigating these perspectives can uncover valuable data that informs strategies for improving patient safety not only locally but also in similar contexts worldwide. By prioritizing these lines of inquiry, researchers can contribute significantly to the field of patient safety, ultimately enhancing healthcare quality in vulnerable and resource-limited settings.

CHAPTER THREE: STUDY METHODOLOGY

3.1 Overview of the Chapter

This chapter discusses the methodology for this study. The chapter gives an overview of the study design, the targeted population, the sample size, the sampling procedure, instruments of data collection, validity and reliability of the study tools, and ethical considerations.

3.2 Research Design

This study sought to establish some of the issues that affect patient safety perception among critical care unit healthcare workers by combining the three determinants of; administrative, individual, and policy factors and how their interaction influences patient safety. The study was a staff-based assessment. Staff-based assessments are structured, self-reporting surveys meant to measure respondent perspectives on different healthcare delivery aspects. The study made use of a descriptive statement that could help the researcher measure the various domains of patient safety. This study type was adopted since it helps the researcher measure all three broad determinants of patient safety at a point in time using a single set of respondents and this was beneficial in establishing the trend of patient safety among critical care units' healthcare workers working within the Kakamega County Referral Hospital.

This study adopted an analytical cross-sectional study design. Cross-sectional studies are observational studies that help a researcher to collect and analyze one-time data from a defined population. They are effective in measuring the perceptions of phenomena at a point in time (Wang, et al., 2020). Since the study sought to understand the perception of patient safety among healthcare professionals, the study found this study design effective in answering the research questions. This cross-

sectional study targeted all clinical staff working in critical care units within the Kakamega Level 5 Hospital.

3.3 Study Population

The study was conducted at the Kakamega Level 5 Hospital. The study included all healthcare providers working closely with the Critical Care Units (CCUs). The study population included; Post-Graduate Nurses (2), BSc Nurses (20), Kenya Registered Community Health Nurses (KRCHN) (72), Clinical Officers (34), Medical Officer (14), Consultant/Physician (2), Clinical area in charge (2). Study respondents were all drawn from the following Critical Care Unts; accident and emergency units, theatre(s), and the acute rooms. The target population included 150 healthcare providers in Kakamega Level 5 Hospital.

3.4 Sample Size Determination

Due to the limited number of staff working in the Critical Care Units (CCUs), this study employed the census method for data collection. This approach allowed for the inclusion of all 100 healthcare workers operating in the acute ward rooms, alongside all 50 ICU clinical staff, resulting in a total of 150 participants (N=150). The distribution of healthcare workers included: 2 Post-Graduate Nurses, 20 BSc Nurses, 72 KRCHNs, 34 Clinical Officers, 14 Medical Officers, 2 Consultants/Physicians, and 2 Clinical Area Managers, bringing the total to 150 healthcare workers. As noted by Turner (2019), the census sampling method is the most efficient and effective strategy for estimating the characteristics of a population, particularly when the target population is too small to warrant sampling.

Using the duty rotter, the researcher approached each respondent, introduced the study, and administered the questionnaire. All consenting CCU respondents were included. The researcher collected data for one month to allow most respondents to participate in the study at their convenience.

3.5 Inclusion and Exclusion Criteria

3.5.1 Inclusion criteria

The following criteria were used to determine who was included in the study;

1. The respondent had to be a full-time healthcare worker employed/contracted by the Kakamega Level 5 Hospital and serving as either a nurse, a clinical officer, or a medical officer.
2. The respondents had to have worked within the department for more than two months and more than a year within the Kakamega County Referral Hospital.
3. The respondent must have worked or collaborated closely with the CCU or departments for the last two months
4. All eligible participants must have given consent to participate in the study

3.5.2 Exclusion criteria

The study proposes to exclude all;

1. All healthcare workers not directly involved in Critical Care Units within Kakamega Level 5 Hospital
2. Temporary or Locum staff working within the CCU
3. Healthcare workers working in the Critical care units who were on extended leave/sabbatical
4. All eligible respondents working as educators and managers within the health facility
5. All eligible respondents who didn’t consent to participate in the study.

3.6 Study Variables

Dependent variable: Patient safety. This can either be positive or negative. A positive patient safety is one in which patient safety ranks as the highest priority. Common measurements of a positive culture include; respondents sighting non-punitive feedback for errors, open communications, organizational learning, common traditional perceptions based on the importance of safety, and teamwork (Khoshakhlagh, et al., 2019). A positive patient safety fosters easy reporting and analysis of errors which in turn enhances the practice of patient safety.

Independent variables: These were categorized into eight broad categories as illustrated by the sections in the questionnaire. Section I – Demographic characteristics: This included the following variables; age, gender, education, marital status, staff position, and work area. Section II: Work Area Characteristics. This covered human resource availability and consistency. Section III: Supervisor, Manager, or Clinical Leader Characteristics. This section captured the leadership's support in enhancing patient safety. Section IV: Communication. This reviewed the free flow of information both vertically (across seniority levels) and horizontally (between peers). Section V: Reporting Patient Safety Events. This section reviewed the ease of communicating patient safety errors to the patient and the healthcare management team. Section VI: Patient Safety Rating. This section captured an individual's perception of the patient safety rating. Section VII: Your Hospital. This measured the devotion of the facility management and health practitioners in managing and communicating patient safety details within the facility. Section VIII: Background Questions. This section helped the study measure health workers' involvement with Critical Care Units' patients in time format.

Outcome Variable: The study outcome was patient safety. Patient safety was rated using the respondent's feedback to question 1 under Subsection E (Patient Safety Rating). However, the computed scores under organizational factors impacting patient safety and healthcare worker perceptions were also considered since they posit greater significance and give a deeper insight into the general scoring under sub-section E. The researcher calculated the frequency of responses for each survey item. The researcher combined the two lowest responses (Strongly disagree and disagree) and the two highest responses (Strongly agree and agree). The midpoint of the responses was reported as a separate category. Sections, where the respondents did not answer, were excluded from displaying percentages.

3.7 Research Instruments

This study employed a self-administered questionnaire to gather data from critical care clinical teams at the Kakamega County Referral Hospital regarding their perception of patient safety. The questionnaire was derived from the Surveys on Patient Safety Culture™ and specifically utilized the Hospital Survey on Patient Safety Culture (HSOPSC) version 2.0, released in 2019. Developed by the U.S. Agency for Healthcare Research and Quality (AHRQ), this tool has been adopted globally. The HSOPSC version 2.0 assesses staff perceptions related to patient safety issues, medical errors, and the reporting of safety events. It offers a structured framework for data collection and enables comparisons of findings on an international scale. The questionnaire served as the primary research instrument for this study. Utilizing questionnaires was deemed advantageous for data collection because it allows for quantitative comparisons between the study's independent variable responses and the outcomes. This approach was crucial for drawing inferences and identifying correlations between the variables.

Several studies have used the HSOPSC Version 2 and tested the tool's validity and reliability. Syazana et al., (2024) tested the tool's validity and reported excellent content validity (I-CVI = 0.80 ~ 1.0, SCVI-average = 0.96) and face validity (I-FVI = 0.80 ~ 1.0, SFVI-average = 0.98). Reliability testing was acceptable (Cronbach's α = 0.60 ~ 0.80) (Syazana et al., 2024).

3.7.1 Pre-test of the instrument

According to Casper and colleagues, pretesting is a critical step in research since it helps in identifying and reducing measurement errors that might damage statistical estimates at the population level making it difficult for researchers to report on comparisons in a multicultural survey. (Caspar, et al., 2016).

The study tool was pre-tested to ensure the researcher was familiar with the tool and that the tools measured well what the study sought to measure. Pre-testing a tool on a small group of respondents is important because it helps the researcher(s) identify and fix issues before sending out the survey to a larger group.

The pre-test was conducted on a similar study population (nurses, clinical officers, and medical officers) working at the Bungoma County Referral Hospital in Bungoma County. The study pretested the tool on ten (10) respondents who had met the inclusion criteria. Data from the pretest was analyzed to confirm if the tool fully answered the research questions.

3.8 Data Collection Procedure

This was a quantitative study, and data was collected using the Hospital Survey on Patient Safety Culture (HSOPSC) version 2.0 questionnaire. Before administering the questionnaire, the researcher obtained consent from the respondents by fully

informing them about the purpose of the survey, how their data would be used, and any potential risks or benefits associated with their participation.

This information was conveyed through clear consent forms or an introductory section in the questionnaire. Respondents were assured of the confidentiality and anonymity of their information, with guarantees that their data would be protected from unauthorized access and that their identities could not be linked to their responses. The researcher also communicated the survey's purpose, who was conducting it, and how the data would be used, fostering trust and allowing participants to make informed decisions.

Once consent was given, the questionnaire was administered for the respondents to fill out. The researcher was always present to oversee the data collection, address any challenges immediately, and ensure adherence to the protocol. Data was checked for consistency and completeness before it was considered for data entry, analysis, and reporting.

3.9 Data Management and Analysis

Computer software was utilized to transform the physical data collection tool into an electronic format using version 21 of the Statistical Package for Social Sciences (SPSS). The electronic data was subsequently analyzed. The eight sections of the questionnaire were initially analyzed descriptively, with results reported as numbers, percentages, means, and standard deviations. Inferential statistics were then applied to selected variables in order to address the research questions. Data interpretation was based on the various sections of the questionnaire.

3.9.1 Section I: Demographic Factors

This section captured the demographic variables of the respondents. Each variable was analyzed descriptively using numbers, means, percentages, standard deviations, and variances. The data were then analyzed inferentially using correlation analysis, regression analysis, and cross-tabulations. Chi-square tests, a type of bivariate analysis, were conducted to determine the levels of association with patient safety.

3.9.2 Section II: Organizational Factors

This section examined three critical organizational factors - teamwork, administrative support, and communication - that can influence a health facility's safety culture. Reporting on these factors was divided into three parts. The first part assessed the teamwork environment within the health facility using twelve questions on a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The items were measured as follows: Disagree (mean<3) and Agree (mean>3). Higher values indicated more agreement with the factors in question. Higher scores indicated a positive perception of patient safety, while lower scores represented a negative perception, with the minimum score being 12 and the maximum score 60. The second part (Administrative Factors) utilized three questions to evaluate staff perceptions of their administration. The third part (Communication) comprised seven questions designed to measure patient safety practices within the facility. Both the second and third parts employed a five-point Likert scale, where higher scores reflected a more positive view of patient safety and lower scores indicated reduced perceptions of safety.

3.9.3 Section III: Perception Factors

This final section of the data collection tool included six questions on a five-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The items were measured as follows: Disagree (mean<3) and Agree (mean>3). Higher values indicated more agreement with the condition in question. Respondents were also given the option to select a sixth measure, coded as 9, if a statement did not apply or if they did not know the answer. Two negatively worded items were reversed during analysis. Consequently, the minimum score in this section was 6, and the maximum score was 50.

3.10 Ethical Consideration

Upon successful defense of the research proposal, approvals for data collection was sought from the university's Ethics and Research Committee after which a research authorization letter was issued by the university. The researcher then presented a letter requesting the Kakamega Level 5 Hospital Chief Executive Officer to grant her permission to conduct her research in the selected section(s) of the hospital. The letter was annexed with the approved proposal and the data authorization letter.

Study respondents consenting to the study were given a full review of the study purpose and approximate time of involvement. Participation in the study was voluntary. The study respondents' data was kept with utmost confidentiality with respondents being identified by codes only known to the researcher.

3.11 Study Limitations

Since the study assumed a cross-sectional study design, it was a challenge for the study to establish causation mostly because, being a county referral hospital, healthcare workers are drawn from different socio-cultural, economic, and backgrounds. Also, being a survey, the research was subject to response bias because, whereas the questionnaire was randomly distributed, there are no mechanisms to ensure privacy and minimize influence. To curb some of the challenges, the researcher purposed to explicitly explain the study rationale to help the respondents understand that the study does not seek to measure the right standpoint and that it does not warrant victimization. The researcher also purposed to conduct the study within a short timeframe to manage the peer influence bias.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter presents the results of the study conducted to understand the perception of patient safety among healthcare professionals at the Kakamega County Referral Hospital (KCRH). Through a systematic analysis of the data collected from 150 participants, this study sheds light on both the demographic characteristics of healthcare professionals and the organizational factors that influence patient safety outcomes.

Key findings reveal that a significant majority of the participants were female (57.3%), with a predominant educational background of diploma holders (61.3%). The analysis also highlighted a diversity of roles within the hospital, with nurses representing the largest group (52.9%), followed by clinical officers and medical officers. Notably, nearly half of the participants (45.7%) had received training in patient safety, suggesting a foundational awareness of the issue among the staff.

In examining the organizational factors affecting patient safety, the study found a strong consensus on the positive aspects of teamwork and learning within the institution, with average means indicating high levels of agreement that teamwork is embraced (4.48) and that staff assist each other during busy times (4.31). However, the data also pointed to serious concerns regarding staffing levels and the working environment, with mean scores indicating a lack of sufficient personnel (2.34) to manage the workload effectively and instances of rushed workspaces (2.28).

Overall, this chapter not only highlights the demographic profile of the healthcare workers but also illustrates critical insights into the institutional culture at KCRH, revealing both strengths in teamwork and significant challenges that need addressing to enhance patient safety.

4.2 Demographic characteristics of the study participants

Out of 150 participants, 57.3% (86) were female, while 41.3% (62) were male. In terms of the highest level of education attained, 61.3% (92) held a diploma, whereas 38.7% (54) had obtained a degree. Regarding their work placements, 9.3% (14) were employed in the maternity department, 16% (24) in the medical unit, 40% (60) in the special unit, 17.3% (26) in the surgical unit, and 17.3% (26) in various other departments.

When it comes to the participants' specializations, 17.7% (12) were clinical officers, 11.8% (8) were consultants/physicians, 17.7% (12) were medical officers, and 52.9% (36) were nurses. Notably, 45.7% (64) reported having prior training in patient safety (refer to Table 4.1). The average years of experience among the participants was 8.36 years, with an average duration of 2.64 years spent at the facility and an average service period of 5.76 years in Kakamega.

In terms of designation, the majority (72 participants, or 49.3%) were KRCHNs, followed by clinical officers at 23.3% (34 participants). Post-graduate nurses, consultants/physicians, and clinical area in-charges each constituted a minority, each accounting for 1.4% (2 participants).

4.3 Organizational Factors affecting Patient safety

4.3.1 Institutional factors

There was generally a strong agreement that at the institution, teamwork was embraced (Mean 4.48±0.80), workers in this unit assist one another during busy times (Mean 4.31±0.93), this unit prioritizes learning rather than assigning blame to individuals when staff makes mistakes (Mean 3.99±1.08). On the other hand,

participants disagreed with the fact that disrespectful conduct by persons employed in this unit is a concern (Mean 2.10±1.00), the number of staff employed in their unit was enough to handle the workload (Mean 2.34±1.12) and there was rushed workspace (Mean 2.28±1.25). Therefore, in Kakamega County Referral Hospital, it stands out that teamwork is embraced, the staff focuses on learning, there were no instances of disrespectful behaviors among staff, there was not enough staff to handle the workload, and the workspace was not rushed. Both the individual and combined item means and standard deviations are presented in table 4.2.

Table 4.1: Institutional Factors Affecting Patient Safety

Institutional Factor	Mean	Std. Dev
Teamwork is embraced	4.48	0.80
Adequate staffing levels in the unit.	2.34	1.12
Excessive overtime negatively impacts patient care.	3.81	1.10
Regular procedure assessments to improve safety.	3.58	1.23
Overreliance on temporary staff.	3.04	1.43
Staff fear blame for errors.	2.59	1.20
Incident reports focus on reprimanding individuals rather than systemic issues.	2.64	1.32
Teamwork during peak times is strong.	4.31	0.93
Disrespectful behavior among staff is a concern.	2.10	1.00
Error responses prioritize learning over blame.	3.99	1.08
High workload compromises patient safety.	2.28	1.25
Evaluations of safety modifications are conducted.	3.58	1.32
Lack of support for staff after errors.	2.54	1.26
Recurring patient safety issues persist in this unit.	2.31	1.27

4.3.2 Administrative factors (immediate in-charge, manager, or unit in charges)

There was generally a strong agreement that the in-charges: took action to address patient safety concerns brought to their attention (Mean 4.07±1.03) and consideration is given by supervisor, manager, or clinical leader to staff proposals for enhancing patient safety. (Mean 3.92±1.02. On the other hand, participants disagreed with the

fact that the in-charges wanted them to work faster during busy times even if it meant taking shortcuts (Mean 1.85±0.95). Therefore, in Kakamega County Referral hospital, it stands out that in-charges readily take action to address patient safety concerns brought to their attention, take staffs' suggestions for improving patient safety seriously and don't advocate for shortcuts.

4.3.3 Communication factors (level of agreement or disagreement at unit/work area)

There was generally a strong agreement that: staff members in this unit articulate concerns that have the potential to adversely impact patient care (Mean 4.31±0.93), staff were diligent in preventing errors from recurring (Mean 4.05±1.07) and those in positions of higher authority in this facility are receptive to staff concerns regarding patient safety when they are expressed (Mean 4.01±1.03). On the other hand, the personnel exhibit a reluctance to inquire into anything that seems to be amiss. (Mean 2.29±1.23). Therefore, in Kakamega County Referral Hospital, it stands out that staff readily speak up whenever they see something that could negatively impact patient safety, staff are careful to prevent errors from recurring and those in more authority are open to patient safety concerns raised by their staffs. The mean and standard deviations of the individual items and the mean and standard deviation of the combined items are presented in Table 4.4 below.

Table 4.2: Communication Factors Affecting Patient Safety

Communication Factor	Mean	Std. Dev
We receive error notifications in this unit.	3.81	0.98
Errors prompt discussions to prevent recurrence.	4.05	1.07
The unit shares updates on changes from event reports.	3.84	0.97
Staff raise concerns that could affect patient care.	4.31	0.93
Staff speak up when leaders jeopardize safety	3.69	1.33
Leadership listens to staff safety concerns	4.01	1.03
Staff hesitate to question unsafe practices.	2.29	1.23

4.3.4 Reporting patient safety events (Reporting safety)

Participants agreed that reporting was only done sometimes whenever a mistake was caught and corrected before reaching the patient (Mean 3.24±1.33) and whenever a mistake reached the patient and could have harmed the patient but did not (Mean 3.31±1.30). Moreover, on average each staff had only reported one or two safety events (Mean 2.10±1.15) at the time of data collection. Therefore, in Kakamega County Referral hospital, it stands out that safety reporting needs to be improved.

4.4 Hospital perceived factors affecting Patient safety

4.4.1 Hospital perception factors associated with patient safety

Six items were used to evaluate the Hospital perception factors possibly associated with patient safety. There was relatively a strong agreement that: crucial information is often omitted during the process of transferring patients between units (Mean 3.91±1.00) and when transferring patients from one unit to another (Mean 3.77±1.11) there is a sufficient amount of time allocated to share all essential patient care information although during the change between shifts (Mean 3.75±1.12). However, participants neither agreed/disagreed as to whether hospital administration allocates sufficient resources in order to enhance patient safety (Mean 2.96±1.07) and whether hospital administration seems to prioritize patient safety only in the aftermath of an

unpleasant occurrence. (Mean 3.12±1.06). Therefore, in Kakamega County Referral Hospital, it stands out that although there was always sufficient time to exchange patient care information, some information was always omitted during shift changes and when transferring a patient from one unit to another.

4.4.2 Health worker attitude towards patient safety

Thirty items were used to score the attitude of the health worker with regard to patient safety. The participants generally agreed that they liked their job (Mean 4.53±0.58); that their training had equipped them with the knowledge and skills necessary to comprehend the underlying factors that contribute to medical mistakes (Mean 4.39±0.66); that their employers highly value personal opinions about patient care. (Mean 4.19±0.86); that better multidisciplinary teamwork (Mean 2.96±1.07), paying more attention at work (Mean 4.08±1.03), and teaching teamwork skills (Mean 4.13±0.90) would lead to fewer medical errors being committed. On the other hand, participants didn't agree that a genuine professional never commits errors or makes blunders. (Mean 1.86±0.95) and that acquiring knowledge regarding patient safety issues is considered less significant compared to acquiring other skill-based parts of becoming a doctor or a nurse (Mean 1.82±1.01). The mean and standard deviations of the individual items and the mean and standard deviation of the combined items are presented in Table 4.7.

Table 4.3: Attitude Toward Patient Safety and Its Impact on Patient Safety

Category	Statement (Shortened for Clarity)	Mean	Std. Dev
Training & Preparedness	My training covers causes of medical errors.	4.39	0.66
	Learning safety pre-qualification improves proficiency.	4.01	1.03
	Safety knowledge is undervalued vs. clinical skills.	1.82	1.01
Job Satisfaction	I like my job.	4.53	0.58
	Employer values staff opinions on patient care.	4.19	0.86
Error Reporting Culture	I would disclose my own errors, regardless of severity.	3.57	1.01
	I would report others' errors, regardless of severity.	3.36	1.12
	I can openly discuss errors with my supervisor.	3.82	0.92
	All errors should be officially documented.	3.79	1.14
	Reporting minor errors is unnecessary.	1.99	1.05
	Only harmful mistakes require patient disclosure.	2.52	1.32
Workload & Fatigue	Long shifts increase error risk.	3.51	1.38
	Shorter schedules reduce errors.	3.69	1.04
	Skipping breaks raises error risk.	3.68	1.19
Teamwork & Collaboration	Better collaboration decreases errors.	4.08	1.03
	Interprofessional lessons reduce errors.	4.13	0.90
Perceptions of Errors	Skilled clinicians can still make errors.	3.85	1.11
	Skilled nurses can still make errors.	3.92	1.07
	Errors reflect incompetence.	2.11	1.10
	Most errors are caused by negligent nurses.	2.07	1.06
	Many errors are caused by negligent doctors.	2.21	1.19
	True professionals never make errors.	1.86	0.95
Patient Role in Safety	Patients help prevent errors.	3.59	1.20
	Patient engagement reduces errors.	3.78	1.22
Safety Practices	Errors are correctly addressed here.	3.81	0.82
	Vigilance prevents errors.	4.03	0.85
	Safety is learned through experience, not just teaching.	2.35	1.35

4.5 Patient safety

4.5.1 Patient Safety Score

Patient safety was measured using seven items. Participants agreed that medical misdiagnosis (Mean 3.07±1.20), conflicting instructions by providers (Mean 3.29±1.19), and infections post-treatment/hospitalization (Mean 3.22±1.19) did occur within the facility. However, they disagreed that wrong instructions were issued on follow-up care (Mean 2.51±1.09), errors were made on medication dosage (Mean 2.59±1.07), unnecessary treatments were done (Mean 2.67±1.20), wrong medications were issued (Mean 2.51±1.24). Therefore, in Kakamega County Referral Hospital, it stands out that there is uncertainty as to whether medical misdiagnosis, instances of conflicting instructions by providers, and infections post-treatment/hospitalization occur.

4.5.2 Patient Safety Rating

Participants were asked how they would rate their unit/work area on patient safety on a five-point Likert scale (Poor, Fair, Good, Very Good, and Excellent). While 8 people indicated poor, 16 indicated fair, 120 indicated good, 6 indicated very good and none indicated excellent. Poor and Fair categories were combined into Poor while Good, Very Good, and Excellent were also combined into the Good category. Hence, to rate patient safety at Kakamega Referral Hospital, the categories were either poor or good. The result indicated that 84% (n=126) of respondents rated patient safety as good, while 16% (n=24) rated patient safety as poor (Table 4.9).

Table 4.4: Patient Safety Rating

	Frequency (n)	Percent (%)
Poor	24	16
Good	126	84
Total	**150**	**100**

4.6 Bivariate Analysis

4.6.1 Association between demographic characteristics and patient safety

A chi-square test of association was conducted to ascertain the presence of a correlation between demographic factors and patient safety. P-values <0.05 were deemed to be statistically significant. Findings indicated a statistically significant relationship between education level ($\chi2$= 6.632, p=0.036), age ($\chi2$= 6.494, p=0.024), training on patient safety ($\chi2$= 16.31, p=0.000), and patient safety. Results are exhibited in Table 4.10.

Table 4.5: Association between demographic properties and patient safety

	Patient Safety Rating			
Variable	**Poor**	**Good**	**$\chi2$ value**	**p value**
Gender				
Male	8	54	0.862	0.243
Female	16	70		
Education				
≤Diploma	10	82	6.632	0.036
≥Degree	14	38		
Age				
Below 30	16	60	6.494	0.024
31-40	8	32		
41-50	0	14		
Above 50	0	12		
Experience				
Below 10 years	18	86	3.6	0.165
10-20 years	6	20		
21 years and above	0	14		
Training on patient safety				
No	2	62	16.31	0.000
Yes	22	54		

4.6.2 Association between organizational factors and patient safety

A chi-square test of association was conducted to see whether there was a correlation between organizational characteristics and patient safety. Variables that had a p value <0.05 were deemed statistically significant. Findings showed a statistically significant relationship between administrative factors ($\chi 2$= 12.646, p=0.001), communication ($\chi 2$= 25.783, p=0.000), reporting safety ($\chi 2$= 8.278, p=0.004), and patient safety. Results are displayed in Table 4.11.

Table 4.6: Association between organizational factors and patient safety

	Patient Safety Rating			
Variable	**Poor**	**Good**	**$\chi 2$ value**	**p value**
Institutional factors				
Disagree	6	36	0.606	0.31
Agree	8	75		
Administrative factors				
Disagree	14	28	12.646	0.001
Agree	10	96		
Communication				
Disagree	10	8	25.783	0.000
Agree	12	114		
Reporting safety				
Disagree	16	50	8.278	0.004
Agree	6	76		

4.6.3 Association between hospital perceived factors and patient safety

A chi-square test of association was performed to establish whether there was a relationship between hospital-perceived factors and patient safety. All p-values below 0.05 were considered significant. Findings showed a statistically insignificant relationship between hospital perceptions (p >0.05), health worker attitude towards patient safety (p>0.05) and patient safety. Results are exhibited in Table 4.12.

Table 4.7: Association between hospital perceived factors and patient safety

	Patient Safety Rating			
Variable	**Poor**	**Good**	**χ2 value**	**p value**
Hospital perceptions				
Disagree	18	78	1.291	0.184
Agree	6	46		
Health worker attitude towards patient safety				
Disagree	4	20	0.084	0.497
Agree	12	72		

4.7 Multivariate Logistic Regression; Predictors of Patient Safety

This section describes the multivariate logistic regression analysis of the patient safety and the predictor variables. Patient safety was categorized into poor and good. Significance level was set at 0.05. Findings showed that healthcare providers who disagreed with items on administrative factors were less likely to ensure patient safety (OR =0.076; p = 0.000) compared to those who agreed with items on administrative factors. Results further showed that healthcare providers aged below 30 and 31-40 years respectively were more likely to ensure patient safety (OR =3.00E-10; 2.397E-10; p = 0.001) compared to those aged above 50 years.

Table 4.8: Multivariate logistic regression results: Predictors of patient safety

	Adj. OR	**95% CI**	**Sig.**
Education			
≤Diploma	0.694	0.156-3.076	0.630
≥Degree	ref		
Age			
Below 30	3.00E-10	[6.27E-11-1.44E-09]	**0.000**
31-40	2.397E-10	[2.4E-10-2.4E-10]	
41-50	0.467	[0.467-0.467]	
Above 50	ref		
Training on patient safety			
No	859241468.1	0.000	0.997
Yes	ref		
Administrative factors			
Disagree	0.076	[0.016-0.361]	**0.001**
Agree	ref		
Communication			
Disagree	0.336	[0.065-1.746]	0.195
Agree	ref		
Reporting safety			
Disagree	0.458	[0.093-2.253]	0.337
Agree	ref		

CHAPTER FIVE: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This study presents discussions, concussions, and recommendations based on the study objectives. The study sought to assess the perception of patient safety among healthcare professionals working across hospital units that closely interact with the Critical Care Unit (CCU) at the Kakamega County Referral Hospital. The study investigated the influence of various factors on patient safety perception, including healthcare professionals' demographic characteristics, organizational factors such as resource availability and staffing levels, and the professionals' own perceived contributors to patient safety risks. By exploring these factors, this research sought to understand the current state of patient safety within the hospital's critical care ecosystem and identify areas for improvement in patient care quality and safety.

5.2 Perceived Patient safety across the hospital units that work closely with the CCU at the Kakamega County Referral Hospital

The primary objective of the study was to evaluate patient safety across the hospital units closely affiliated with the Critical Care Unit (CCU) at Kakamega County Referral Hospital. The majority of respondents rated patient safety positively, suggesting that most healthcare providers were content with the level of patient safety at the facility. These findings contrast with those of Lasater et al. (2016), who demonstrated that private health facilities scored lower in patient safety compared to public facilities.

Overall, a significant body of research conducted in Africa and other developing countries indicates a pressing need to improve healthcare workers' perceptions of

patient safety. The variations in findings across these studies can largely be attributed to differences in methodology. For instance, Lasater and colleagues conducted a literature review focused on actual patient outcomes, whereas this study examined the perceptions of healthcare workers. Additionally, their research centered on private facilities, while this study concentrated on a public facility. Furthermore, their literature review synthesized results from multiple studies across various health facilities, while this research was limited to a single institution. Such methodological differences are likely to result in varied outcomes.

Nonetheless, both studies converge on the conclusion that inadequate staffing levels, which we quantified as workload in this study, are linked to poorer patient safety outcomes. Existing policies stipulate that the nurse-to-patient ratio in critical care units should be 1:2; however, feedback indicates that staffing at Kakamega County Referral Hospital is significantly below this standard. Their findings also support the notion that working conditions—including organizational teamwork, working hours, and staffing—can influence patient safety outcomes.

The study revealed that a significant majority of healthcare professionals working in hospital units associated with the Coronary Care Unit (CCU) held a favorable view of patient safety. This perception is notably more positive compared to findings from studies conducted in private healthcare facilities, where patient safety scores tend to be lower. Several factors, including variations in research methodologies and clinical environments, may account for these differences in perception. Nevertheless, these findings highlight the critical importance of ongoing evaluation and enhancement of patient safety measures across all healthcare environments, regardless of their affiliation. By prioritizing continuous improvement, healthcare organizations can

ensure that patient safety remains a top priority and that standards of care are consistently met.

Based on study findings, the researcher recommends that further research is conducted to investigate the factors contributing to the positive perception of patient safety within the hospital units affiliated with the CCU. This research should include objective data on patient safety outcomes, such as adverse event rates and near-miss incidents, to validate the perceptions of healthcare professionals.

5.3 Demographic characteristics of the study population

This study examined the influence of demographic characteristics on patient safety perceptions among healthcare professionals working in units closely associated with the CCU at the Kakamega County Referral Hospital. While the study found a fair representation of both male and female healthcare providers, it revealed a significant association between gender and patient safety perceptions, with males demonstrating better patient safety awareness compared to females. This finding, while unexpected, aligns with previous research by Alsalem et al. (2018) that highlighted the potential impact of gender on the quality of care delivery. Further investigation is warranted to explore the underlying factors contributing to this observed gender disparity.

The study also analyzed the impact of education level, finding that all participants had attained at least a diploma, with many holding higher degrees. This finding supports the established link between higher education and improved patient safety awareness, as observed in studies by Titlestad et al. (2018). Moreover, the study found variations in patient safety perceptions across different hospital units, with those working in the special unit exhibiting lower patient safety awareness compared to those in the maternity department. This finding underscores the importance of considering the

specific context and demands of different hospital units when assessing and addressing patient safety concerns.

Finally, the study analyzed the impact of experience on patient safety perceptions. The findings revealed that the majority of healthcare providers had significant experience working in healthcare settings, aligning with the work of Lasater et al. (2016) which emphasized the importance of experience in influencing the quality of care. This experience likely contributes to a deeper understanding of patient safety risks and effective mitigation strategies. Furthermore, the study found a strong association between prior training on patient safety and improved patient safety perceptions, emphasizing the critical role of ongoing education and training in enhancing patient safety awareness and skills among healthcare professionals.

The research study meticulously identified a range of demographic factors that play a significant role in shaping patient safety perceptions among individuals in a healthcare context. One noteworthy finding revealed that male respondents displayed a greater awareness of patient safety issues compared to their female counterparts. This observation aligns with a growing body of literature that documents gender disparities in healthcare perceptions and behavior. Additionally, the analysis indicated that individuals with higher levels of formal education tend to have a better grasp of patient safety concepts, reinforcing trends identified in previous studies that link education to enhanced awareness and understanding of health-related issues.

The study recommends the implementation of targeted training programs tailored to address the specific needs and knowledge gaps of healthcare professionals across various educational backgrounds and experience levels. Additionally, further research

is necessary to investigate the underlying factors contributing to the observed gender disparity in patient safety perceptions.

5.4 Organizational Factors that Impact Patient Safety

The study cited four critical organizational factors that impact patient safety. They included: the variation in patient safety perceptions across different hospital units, the potential impact of resource constraints and staffing levels on patient safety, the importance of a supportive and non-punitive environment for error reporting, the role of organizational culture and leadership in promoting patient safety, and the effectiveness of communication and information sharing within and between departments.

Study findings provided valuable insights into how organizational factors influence patient safety perceptions among healthcare professionals at the Kakamega County Referral Hospital. A key finding highlights significant variations in patient safety perceptions across different hospital units. This observation suggests that the specific demands, resources, and challenges faced by each unit significantly impact the overall patient safety environment. Units with higher patient volumes, limited resources, and inadequate staffing may experience increased workload and stress, potentially compromising patient safety.

Furthermore, the study indirectly underscores the critical role of resource allocation and availability. While not explicitly measured, it is reasonable to infer that disparities in resource distribution across units may contribute to variations in patient safety perceptions. Units with adequate staffing, modern equipment, and readily available supplies are likely to have a more positive patient safety environment compared to those with limited resources.

A crucial factor in fostering a strong patient safety culture is the creation of a supportive and non-punitive environment for error reporting. Healthcare professionals must feel comfortable reporting incidents without fear of reprisal. A culture that encourages open communication, learning from mistakes, and a just culture where errors are seen as opportunities for improvement is essential for enhancing patient safety.

In conclusion, the study findings emphasize the critical role of organizational factors in shaping patient safety perceptions and practices. Addressing these factors, such as optimizing resource allocation, improving interdepartmental communication, and fostering a strong patient safety culture, is essential for enhancing patient safety and improving the quality of care delivered within the hospital.

In examining organizational factors, the study highlighted several critical elements that influence perceptions of patient safety across various hospital units. It was noted that there are marked differences in safety perceptions among different areas within healthcare facilities. Resource constraints emerged as a significant barrier to fostering a culture of safety, suggesting that limited access to essential tools and support can detrimentally impact patient care. Moreover, the research underscored the vital role of a supportive and non-punitive environment for error reporting, indicating that when healthcare professionals feel safe to report mistakes without fear of retribution, the overall safety culture improves. These findings collectively emphasize the necessity for a comprehensive, multifaceted approach to enhance patient safety—one that addresses both the unique challenges faced within specific hospital units and broader systemic issues.

It is imperative to conduct a comprehensive study to assess resource allocation and staffing levels throughout all hospital units in order to identify and rectify any disparities. Strategies should also be implemented to cultivate a just culture that encourages open communication, learning from errors, and a focus on system-level improvements. Furthermore, the study highlights the importance of enhancing interdepartmental communication and collaboration to improve information flow and coordinate patient care across different units.

5.5 Perception factors that impact the patient safety

This study explored healthcare professionals' perceptions of factors impacting patient safety within the context of the Kakamega County Referral Hospital. Regarding information exchange, the findings revealed that while sufficient time was generally allocated for shift changes and patient transfers, critical information was occasionally omitted during these transitions. This finding aligns with the work of Abuosi et al. (2019), who emphasized the critical role of effective communication and information sharing in ensuring patient safety. Inadequate communication can lead to misdiagnoses, medication errors, and delays in treatment, ultimately compromising patient outcomes.

Furthermore, the study found that while healthcare providers were generally satisfied with their jobs and felt valued, they identified areas for improvement. These included enhancing multidisciplinary teamwork, fostering increased attentiveness at work, and providing training in teamwork skills. This finding underscores the importance of creating a supportive and collaborative work environment that promotes effective communication and teamwork.

The study also acknowledged that even experienced professionals are susceptible to making errors. This finding is consistent with the work of Shahian et al. (2017), which emphasized that patient safety is a complex issue that requires a multi-faceted approach. It highlights the need for continuous learning and improvement, even among experienced professionals. The study further emphasized the importance of acquiring knowledge about patient safety concerns, highlighting its significance alongside other clinical skills. This finding aligns with the growing body of literature that emphasizes the need for ongoing education and training programs to enhance patient safety awareness, knowledge, and skills among healthcare professionals.

The study also identified several key factors instrumental in shaping perceptions of patient safety, most notably the importance of effective communication among healthcare teams, collaborative teamwork, and a commitment to continuous learning. The findings suggest that the integration of robust communication strategies and teamwork practices is essential for promoting a safety-oriented culture within healthcare settings. Furthermore, the results highlight the urgent need for the implementation of ongoing education and training programs designed to enrich patient safety awareness and skills among all healthcare professionals, irrespective of their experience levels. By prioritizing these areas, the healthcare industry can work toward significant improvements in overall patient safety and care quality.

The facility would benefit greatly from establishing mandatory and ongoing training programs for all healthcare professionals on vital topics such as communication, teamwork, and patient safety principles. Promoting a culture of continuous learning and improvement by encouraging participation in professional development opportunities and facilitating peer-to-peer learning is essential. Lastly, the study

recommends that the facility regularly evaluate the effectiveness of these training programs and make necessary adjustments to ensure their ongoing relevance and impact.

Generally, this study provides several key insights into the perception of patient safety among healthcare professionals at the Kakamega County Referral Hospital in Kenya. Notably, the study observed varying levels of awareness and understanding of patient safety principles across different professional groups. Demographic factors, including age, years of experience, and educational background, were found to significantly influence these perceptions. Furthermore, the study identified critical challenges to patient safety, including resource constraints, staff shortages, and high patient-to-nurse ratios. Importantly, the results underscore the significance of a non-punitive environment for incident reporting. Healthcare professionals expressed greater willingness to report errors when they perceived a culture of support and learning from mistakes. Finally, the analysis suggests that ongoing training and education programs play a crucial role in enhancing patient safety perceptions and improving professional confidence in their ability to ensure safe patient care.

5.6 Implications of the Study on The Body of Knowledge and Practice

Adds to the existing body of research on patient safety perceptions: By investigating the perceptions of healthcare professionals at the Kakamega County Referral Hospital, the study provides valuable empirical data on this critical issue within a specific context. This data can be used to compare and contrast patient safety perceptions across different healthcare settings and populations.

Identifies key factors influencing patient safety perceptions: The study identified several key factors influencing patient safety perceptions, including demographic

characteristics, organizational factors, and individual perceptions. These findings contribute to a deeper understanding of the complex interplay of factors that shape patient safety awareness and behavior.

Highlights the importance of context-specific factors: The study demonstrates the importance of considering context-specific factors, such as the specific demands and challenges faced by different hospital units, when assessing and addressing patient safety concerns.

Provides valuable insights for policy and practice: The findings of the study can inform the development and implementation of targeted interventions to improve patient safety within the hospital and other similar settings. These interventions may include:

1. Improving resource allocation and staffing levels.
2. Fostering a strong patient safety culture.
3. Implementing effective communication and information sharing strategies.
4. Developing and implementing targeted training programs for healthcare professionals.

Stimulates further research: The study identifies several areas for future research, such as investigating the underlying factors contributing to gender disparities in patient safety perceptions and exploring the impact of different types of training programs on patient safety outcomes.

By contributing to our understanding of patient safety perceptions and identifying key factors influencing these perceptions, this study provides valuable insights for

healthcare professionals, policymakers, and researchers, ultimately contributing to the improvement of patient safety and healthcare quality.

5.7 Recommendations for Further Research

1. Deep Dive into Gender Disparity: The study recommends that future research investigates underlying factors by conducting qualitative research (interviews, focus groups) to explore the underlying reasons for the observed gender disparity in patient safety perceptions. it will be great to explore potential factors such as:

1. Gender-based differences in workload, responsibilities, and career progression.
2. Differences in access to training and professional development opportunities.
3. Gender-based differences in organizational culture and support.
4. Impact of gender stereotypes and biases on patient safety perceptions and behaviors.

2. Explore the Impact of Organizational Culture in Depth: Here, it will be important that future studies

1. Develop and validate a tool to measure the organizational culture of patient safety within the hospital.
2. Investigate the relationship between organizational culture and patient safety outcomes by analyzing the relationship between key aspects of the organizational culture (e.g., communication, teamwork, leadership, learning from errors) and actual patient safety outcomes (e.g., adverse event rates, near misses).

3. Evaluate the Effectiveness of Training Programs: The study recommends that future studies

1. Conduct a rigorous evaluation of existing patient safety training programs by assessing the effectiveness of current training programs in improving patient safety knowledge, skills, and behaviors.
2. Develop and implement innovative training programs that will explore the use of simulation, debriefing, and technology-enhanced learning to enhance the effectiveness of patient safety training.

4. Longitudinal Study: The study recommends that future studies conduct a longitudinal study to track changes in patient safety perceptions and behaviors over time. This would allow researchers to assess the long-term impact of interventions aimed at improving patient safety.

5. Comparative Studies: A comparative study investigating patient safety perceptions and practices in different healthcare settings would allow for a better understanding of the factors that contribute to variations in patient safety across different contexts.

6. Explore the Patient Perspective: It will be beneficial if researchers involve patients in the research process by conducting patient interviews or surveys to gather their perspectives on patient safety within the hospital. It would also be beneficial if more studies investigated the impact of patient engagement on patient safety outcomes.

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APPENDICES

Appendix I: Questionnaire

HOSPITAL SURVEY ON PATIENT SAFETY (VERSION 2.0)

Instructions

The questionnaire seeks your perspectives on matters including patient safety, medical mistakes, and the reporting of incidents within your hospital. It is estimated to need around 10-15 minutes of your time to do. If a question is not relevant to you, your hospital, or if you are unsure of the answer, please use the option "Does Not Apply or Don't Know".

- ***Patient safety** refers to the act of preventing and avoiding patient injuries or negative occurrences that may occur as a consequence of healthcare delivery systems.*.
- ***A "**patient safety event**" refers to any blunders, oversight, or incident that occurs in healthcare, irrespective of whether it causes damage to the patient or not.***

Section I: Demographic Factors

1. Respondent Gender
    a. Male
    b. Female
2. Respondent Age: _____
3. Respondent Level of Education **1.** Certificate **2.** Diploma **3** Higher Diploma, **4.** Bachelor degree **5.** PhD **6. Others (Specify)…….**
4. Years of experience in practice …….
5. Area of Specialization (Specify)
   _____
6. Period of service at the Kakamega……
7. Area of deployment…….
8. Period of service in the current department……..

Nursing

1 Post-Graduate
2 BsN Nurses
3 KRCHN
4 Certificate Nurses

Medical

5 Clinical Officers
6 Medical Officers
7 Consultants/Physicians

Supervisor Roles

Clinical area In-charge
Unit In-charges
Ward/Department In-charge

Your Unit/Work Area

2. Consider your "unit" as the specific location inside the hospital, such as a work area, department, or clinical area, where you mostly spend your working hours. What is the main unit or division where you work at this hospital?

Select ONE answer.

Multiple Units, No specific unit
- ☐1 Many different hospital units, No specific unit

Medical/Surgical Units
- ☐2 Combined Medical/Surgical Unit
- ☐3 Medical Unit (Non-Surgical)
- ☐4 Surgical Unit

Patient Care Units
- ☐6 Emergency Department, Observation, Short Stay
- ☐8 ICU (all adult types)
- ☐9 Labor & Delivery, Obstetrics & Gynecology
- ☐10 Oncology, Hematology
- ☐11 Pediatrics (including NICU, PICU)
- ☐12 Psychiatry, Behavioral Health
- ☐14 Rehabilitation, Physical Medicine

Surgical Services
- ☐16 Anesthesiology
- ☐18 Pre Op, Operating Room/Suite, PACU/Post Op, Peri Op

Clinical Services
- ☐19 Lab Services
- ☐20 Pharmacy
- ☐21 Radiology, Imaging

Administration/Management
- ☐24 Administration, Management
- ☐25 Financial Services, Billing
- ☐26 Human Resources, Training
- ☐27 Information Technology, Health Information Management, Clinical Informatics
- ☐28 Quality, Risk Management, Patient Safety

Support Services
- ☐29 Admitting/Registration
- ☐30 Food Services, Dietary
- ☐31 Housekeeping, Environmental Services, Facilities
- ☐32 Security Services
- ☐33 Transport

Other
- ☐34 Other, please specify:

9. What are the common patient safety outcomes within your facility?
   a. Patient readmission
   b. Increased length of Stay
   c. Patient mortality
   d. Others (Please explain)

   _____
   _____

10. Has the hospital ever conducted a training on patient safety 1. Yes 2. No

Section II: Factors impacting Patient safety

Your Unit/Work Area (Institutional factors)

In a scale of 1 to 6, Rate your level of agreement or disagreement with how much do you agree or disagree with the following statements about your unit/work area?

Think about your unit/work area:	**Strongly Disagree** ▼ 1	**Disagree** ▼ 2	**Neither Agree nor Disagree** ▼ **3**	**Agree** ▼ 4	**Strongly Agree** ▼ 5	**Does Not Apply or Don't Know** ▼ 6
1. Embrace teamwork						
2. The number of staff in this unit is sufficient to do the job.						
3. The staff in this unit work excessively long hours, which is detrimental to patient care.						
4. This unit conducts frequent assessments of work procedures to ascertain the need for modifications in order to enhance patient safety.						
5. This unit excessively depends on temporary, floating, or PRN personnel.						
6. Staff in this unit perceive that their errors are used against them.						
7. When an occurrence is documented within this unit, it appears as though the individual is being reprimanded rather than the issue at hand.						
8. When times are busy workers in this unit assist one another.						
9. Disrespectful conduct by persons employed in this unit is a concern.						
10. When staff members make mistakes, this unit prioritizes learning rather than assigning blame to individuals.						
11. The high intensity of work in this unit has a detrimental impact on patient safety.						
12. This unit assesses the effectiveness of modifications made to enhance patient safety.						
13. A deficiency in support exists within this unit for personnel implicated in patient safety errors.						
14. This unit continues to permit the same patient safety issues to occur.						

Your Supervisor, Manager, or Clinical Leader (Administrative Factors)

On a scale of 1 to 6, rate your level of agreement or disagreement with how much do you agree or disagree with the following statements about your immediate supervisor, manager, or clinical leader?

	Strongly Disagree ▼ 1	**Disagree** ▼ 2	**Neither Agree nor Disagree** ▼ **3**	**Agree** ▼ 4	**Strongly Agree** ▼ 4\5	**Does Not Apply or Don't Know** ▼ 6
1. Consideration is given by my supervisor, manager, or clinical leader to staff proposals for enhancing patient safety.						
2. My supervisor, manager, or clinical leader expects us to increase our rate of action at busy times, even if it necessitates using expedient methods.						
3. The supervisor, manager, or clinical leader promptly takes measures to resolve any patient safety issues that are reported to them.						

Communication

On a scale of 1 to 6, Rate your level of agreement or disagreement with how often the following things happen in your unit/work area?

Think about your unit/work area:	Never ▼ 1	Rarely ▼ 2	Some-times ▼ **3**	Most of the Time ▼ 4	Always ▼ 5	Does Not Apply or Don't Know ▼ 6
1. We get notifications of errors occurring in this unit.						
2. When errors occur in this unit, we engage in discussions to identify strategies for preventing their recurrence.						
3. This unit provides information on the implementation of changes that are derived from event reports.						
4. Staff members in this unit articulate concerns that have the potential to adversely impact patient care.						
5. When staff at this unit see a person with higher rank engaging in actions that jeopardize patient safety, they voice their concerns.						
6. Those in positions of higher authority in this unit are receptive to staff concerns regarding patient safety when they are expressed.						
7. In this unit, the personnel exhibit a reluctance to inquire into anything that seem to be amiss.						

Reporting Patient Safety Events (Reporting Safety)

Think about your unit/work area:	Never ▼ 1	Rarely ▼ 2	Some-times ▼ **3**	Most of the Time ▼ 4	Always ▼ 5	Does App Don't 6
1. What is the frequency of reporting when a mistake is identified and rectified before it reaches the patient?						
2. How frequently is it reported when an error that could have caused injury to the patient is found but is not?						

3.In the preceding twelve months, what was the total number of safety incidents that you reported

- ☐a. None
- ☐b. 1 to 2
- ☐c. 3 to 5
- ☐d. 6 to 10
- ☐e. 11 or more

In the preceding twelve months, what was the total number of safety incidents that you reported?

SECTION E: Patient Safety Rating

1. How would you rate your unit/work area on patient safety?

Poor	Fair	Good	Very Good	Excellent
▼	▼	▼	▼	▼
☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

Your hospital (perceptions)

On a scale of 1 to 6, rate your level of agreement or disagreement with how much you agree or disagree with the following statements about your hospital?

Think about your hospital:	**Strongly Disagree** ▼ 1	**Disagree** ▼ 2	**Neither Agree nor Disagree** ▼ **3**	**Agree** ▼ 4	**Strongly Agree** ▼ 5	**Does Not Apply or Don't Know** ▼ 6
1. The demeanor of hospital administration demonstrates that patient safety is paramount.						
2. Hospital administration allocates sufficient resources in order to enhance patient safety.						
3. The hospital administration seems to prioritize patient safety only in the aftermath of an unpleasant occurrence.						
4. During the process of transferring patients between units, crucial information is often omitted.						
5. Essential patient care information is often omitted during shift changes.						
6. During the change between shifts, there is a sufficient amount of time allocated to share all essential patient care information.						

PATIENT SAFETY SCORE

On a scale of 1 to 6, rate your level of agreement or disagreement with the level to which the following errors occur in this facility

Think about your hospital:	**Strongly Disagree** ▼	**Disagree** ▼	**Neither Agree nor Disagree** ▼	**Agree** ▼	**Strongly Agree** ▼	**Does Not Apply or Don't Know** ▼
1. Medical Misdiagnosis	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
2. Issued wrong instructions on follow-up care	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
3. Errors in medication dosage	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
4. Unnecessary treatment	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
5. Different instructions issued by different providers	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
6. Infection post-treatment/hospitalization	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6
7. Issuance of wrong medication	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5	☐ 6

Section III: Attitude of the Health Care Professionals towards patient safety

QUESTIONS	RESPONSES				
	SD	D	UD	A	SA
	Strongly Disagree ▼ 1	Disagree ▼ 2	Neither Agree Nor Disagree ▼ 3	Agree ▼ 4	Strongly Agree ▼ 5
1. My training has equipped me with the knowledge and skills necessary to comprehend the underlying factors that contribute to medical mistakes.					
2. I like my job					
3. My employer highly values personal opinions about patient care.					
4. Most of medical mishaps are caused by negligent nurses.					
5. In my job, medical mistakes are correctly addressed.					
6. I would not hesitate to disclose any errors I had made, regardless of how dire the patient's fate had been.					
7. I believe I do not commit any errors.					
8. I am certain I could report an error without fear of being held accountable.					
9. The duration of physicians' and nurses' work hours directly correlates with the probability of medical mistakes occurring.					
10. I will willingly disclose any errors committed by others, regardless of the severity of the consequences for the patient.					
11. I am certain I would be able to candidly discuss with my supervisor any error that could have caused actual or possible harm to a patient.					
12. A genuine professional never commits errors or makes blunders.					
13. With shorter schedules, medical errors will decrease.					
14. Failure to take frequent breaks throughout shifts puts physicians and nurses at a heightened risk of committing errors.					
15. Medical professionals are obligated to inform patients of mistakes only if they cause harm to the patient.					
16. Patient safety concerns are not easily taught but can only be acquired via clinical experience by skilled individuals.					
17. Even the most skilled and proficient clinical caregiver may make blunders.					
18. Enhanced cross-functional collaboration will decrease instances of medical blunders.					
19. Patients have a crucial role in the prevention of medical errors.					
20. Medical blunders are indicative of ineptitude.					
21. Acquiring knowledge regarding patient safety issues is considered less significant compared to acquiring					

other skill-based parts of becoming a doctor or a nurse.					
22. It is essential to report all instances of medical blunders.					
23. Lessons in collaboration will decrease medical errors.					
24. Health errors could be prevented if staff were more vigilant at work.					
25. Promoting patient engagement helps decrease the occurrence of medical errors.					
26. Reporting errors that do not lead to negative consequences for the patient is unnecessary.					
27. All healthcare workers have a duty to officially document any medical blunders that occur.					
28. A large number of medical errors arise from negligent doctors.					
29. Gaining knowledge about patient safety problems prior to my qualification would enhance my ability to be a more proficient healthcare professional.					
30. Even the most skilled and proficient nurses may make blunders.					

Your Comments

Please feel free to provide any comments about how things are done or could be done in your hospital that might affect patient safety.

Thank you for completing this survey.

Appendix II: County Government of Kakamega Approval

COUNTY GOVERNMENT OF KAKAMEGA

E-mail: wpgh15@yahoo.com
Telephone: Kakamega 0702930346
When replying, please quote:

REF: CGH/KAK/ERC/VOL.I/129

COUNTY GENERAL HOSPITAL
P.O. Box 15-G.P.O-50100
KAKAMEGA

DATE: 14TH MARCH, 2022

MINISTRY OF HEALTH SERVICES

ELIZABETH OSAGA MULUSA
LICENCE NO. NACOSTI/P/22/15485

RE: RESEARCH PROPOSAL APPROVAL – NO. ERC/146-03/2022

This is to inform you that **Kakamega County General Hospital Ethics Review Committee (KCGH ERC)** has approved your research proposal titled: ***"Patient safety culture among health professional at Kakamega County General Teaching and Referral Hospital, Kenya".*** The approval period is 14th March, 2022 – 20th March, 2023.

This approval is subject to compliance with the following requirements:

i. Only approved documents including informed consent, study instruments, MTA will be used.
ii. All changes including amendments, deviations and violations are submitted for review and approval by the **KCGH ERC.**
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to **KCGH ERC** within 24 hours of notification.
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety of welfare of the study participants and others or affect the integrity of the research must be reported to **KCGH ERC** within 24 hours.
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to **KCGH ERC**.

This approval should be attached to your research license from National Commission for Science, Technology and Innovation (NACOSTI) and also other necessary clearances.

KAKAMEGA COUNTY GEN. TEACHING & REFERRAL HOSPITAL
MEDICAL SUPERINTENDENT
14 MAR 2022
Sign.....
P. O. Box 15-50100, KAKAMEGA

for DR. AJEVI AUSTINE
CHAIRMAN
ETHICS AND RESEARCH COMMITTEE
CGH - KAKAMEGA

Appendix III: Kenyatta University Ethics Review Committee

KENYATTA UNIVERSITY
CENTRE FOR RESEARCH ETHICS AND SAFETY

Fax: 8711242/8711575 **P. O. Box 43844,**
Email: chairman.kuerc@ku.ac.ke
Nairobi, 00100

Tel: 8710901/12

Website: www.ku.ac.ke

Our Ref: **KU/ERC/APPROVAL/VOL.1** Date: 20th /01/2022

Elizabeth Osaga Mulusa
P.O BOX 43844-00100
Nairobi.

Dear Ms. Mulusa,

APPLICATION NUMBER: PKU/2429/I15562 - PATIENT SAFETY CULTURE AMONG HEALTH CARE PROFESSIONALS AT THE KAKAMEGA COUNTY REFERRAL HOSPITAL, KENYA.

This is to inform you that ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE*** has reviewed and approved your above research proposal. Your application approval number is **PKU/2429/I15562.** The approval period is **20th /01/2022 to 20th/01/2023.**

This approval is subject to compliance with the following requirements;

i. Only approved documents including (informed consents, study instruments, MTA) will be used
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE***
iii. Death and life threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE*** within 72 hours of notification
iv. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE*** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions.

vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to ***KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE***

Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-portal.nacosti.go.ke and also obtain other clearances needed.

To serve you better, researchers are kindly requested to access and complete a customer feedback form and sent it back online as you continue with research and upon completion of data collection found on the following website link; ;(https://docs.google.com/forms/d/1ytWefDwvyz5h1oz_VIn0xbxg3uGdlDzMXFWNDsMrRPQ/edit?usp=sharing

Yours sincerely

Prof. Judith Kimiywe

Director: Centre for Research Ethics and Safety

Appendix IV: Research Approval

KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 020-8704150

Our Ref: R50/CE/25275/2018

Date: 31st August, 2021

Mrs. Grace Gachuiri
C/o Medical Surgical Nursing & Pre-Clinical Science

REF: APPOINTMENT AS A SUPERVISOR FOR ELIZABETH OSAGA MULUSA REG. NO. R50/CE/25275/18 MASTERS THESIS

This is to inform you that following recommendations from the **Department of Medical Surgical Nursing & Pre-Clinical Science** and the **School of Nursing Sciences** and approval by the Graduate School Board, you are formally appointed as a Supervisor for **Elizabeth Osaga Mulusa's Masters Thesis.**

Your principal responsibilities as a supervisor will include, among others:-

(i) Directing, guiding and advising the student as he/she does the work.
(ii) Holding regular and effective contact meetings with the student at least once a month; and recording dates of such meetings in the student's Progress Report forms.
(iii) Responding to any written materials by the student within the shortest time possible.
(iv) Suggesting to the student the most relevant literature available and other sources of information for reference.
(v) Introducing and linking up the student to other researchers working in related fields.
(vi) Criticizing, appraising and evaluating the student's ideas and findings objectively so as to improve the quality of his/her work.
(vii) Advising the student on the form and structures of a quality thesis and the conventions of scholarly presentations.
(viii) Advising the student on the importance of submitting Progress Reports on time and participating in seminars for Postgraduate students.
(ix) Filling the supervision tracking tool every time a supervision meeting is held with the student.
(x) Screening for plagiarism and countersigning the Plagiarism Clearance Certificate and the Declaration for Originality Form to ensure that the work is within the acceptable similarity index before submitting the proposal and project to Graduate School for any processing.

Thank you.

HARRIET ISABOKE
FOR: DEAN, GRADUATE SCHOOL

CC: Chairman Medical Surgical Nursing & Pre-Clinical Science Department

Appendix V: NACOSTI Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

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Date of Issue: **15/February/2022**

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