UTILIZATION OF REFLECTIVE PRACTICE BY NURSES WORKING IN THE CRITICAL CARE UNITS AT KENYATTA NATIONAL HOSPITAL, NAIROBI CITY COUNTY, KENYA.

LILLIAN NYANDUKO SAMOITA

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DECLARATION

I affirm that this work is entirely my own creation, and I am confident that it has not been submitted for the attainment of any other academic degree at any other educational institution.

Signature:..... **Date:** 22/10/2025

Lilian N. Samoita

R50/ 27003/ 2019

SUPERVISORS APPROVAL

We confirm that the work reported in this thesis was carried out by the student under our supervision.

Signature:..... **Date:** 22/10/2025

Dr Sarah Bett PHD, MScN (Pediatrics), RN

Department of Medical Surgical Nursing and Pre-Clinical Sciences

School of Health Sciences

DEDICATION

I would like to offer this research as a tribute to my beloved and affectionate parents, Mr and Mrs Elijah Samoita, as well as my dear spouse Vincent, and my children Angela, Mitchell and Victor. Their constant support, inspiration and prayers have been a driving force that motivated me to persevere in this endeavour.

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To my colleagues and classmates Kenyatta University class of 2019 thank you for making the journey bearable.

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DEFINITION OF TERMS

Critical Care Nurse	These are individuals who have completed specialized nursing training focused on providing care to critically ill patients.
Critical Care Nursing	Is a specialized training program pursued by nurses with a focus on providing care to critically ill patients.
Critical care unit	Is a specialized section in a hospital that houses sophisticated machinery, monitoring devices, and equipment for the provision of care to patients with potential or life-threatening alterations
Critically ill patient	These are patients with potential or life-threatening alterations that require to be managed in a critical care unit.
Critical thinking	Can be considered synonymous with reflection or engaging in reflective practice
Facility Related Factors	These are components in the critical care unit like: hospital policies, management support and workload or staffing that influence utilization of reflective practice by nurses.
Nurses' Characteristics	These are nurses' attributes like: social demographic factors; gender, age, marital status, level of education, years of practice, job designation, and training on reflective practice and Knowledge of reflective practice that influence utilization of reflective practice by nurses.
Primary/ bedside nurse	Is a staff nurse who provides direct patient care to critically ill patients in CCU, a significant portion of their duties involves tending to patients at their bedsides.

Reflective practice	Involves the act of contemplating, examining, and analyzing one's actions whether past, future or in the present moment during provision of nursing care to critically ill patients.
Team leader	This is a highly specialized and experienced CCN, who is responsible for overseeing the care of critically ill patients, ensuring the well-being of the patients, and effective functioning of the nursing team in CCU.
Utilization	Application of reflection practice in the provision of care to critically ill patients.

ABREVIATIONS AND ACRONYMS

CCN	Critical Care Nurses
CCU	Critical Care Unit
KNH	Kenyatta National Hospital
KNH ERC	Kenyatta National Hospital Ethics and Research Committee
KU	Kenyatta University
KUERC	Kenyatta University Ethics and Research Committee
NACOSTI	National Commission of Science, Technology and Innovation
NICU	Neonatal Critical Care Unit
PICU	Paediatric Critical Care Unit
UK	United Kingdom
UoN ERC	University of Nairobi Ethics and Research Committee
WHO	World Health Organization

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ABSTRACT

This study investigated the utilization of reflective practice among Critical Care Nurses (CCNs) at Kenyatta National Hospital (KNH) to address its inconsistent implementation despite its recognized benefits. Using a quantitative cross-sectional design in March 2021, data were collected from 154 CCNs via a structured questionnaire. The study aimed to determine the level of reflective practice utilization, nurses' perceptions, and the influence of nurse characteristics and facility-related factors. Data analysis, performed using SPSS version 25.0, involved logistic regression and Chi-square tests. Key findings revealed that 51.3% of respondents held a higher diploma in CCN, and 68.2% lacked formal reflective practice training; however, formal training significantly increased utilization (92.6% of trained nurses vs. 47% of untrained). While nurses aged 50 and above had a lower utilization rate (42.9%), age showed no statistically significant relationship with reflective practice utilization. Most respondents (64.5%) were familiar with at least one reflective model, with Gibbs' model being the most common (67.2%). Higher qualifications (BScN/MScN) and a perception of improved nursing practice due to reflection (68.2%) correlated with greater utilization. Identified barriers included a lack of designated reflection spaces (88.2%), unsupportive institutional policies (76.3%), insufficient training opportunities (80.8%), and workload-related obstacles (68.7%). Logistic regression indicated that nurses who perceived practice improvement due to reflection were 2.123 times more likely to utilize it ($p=0.062$). The presence of a designated reflection space was strongly associated with utilization (OR = 6.487), although this was not statistically significant ($p=0.95$). Additionally, a perception of being free from victimization or negative institutional influence was associated with higher odds of utilization (OR = 1.968, $p=0.072$), suggesting that a psychologically safe environment encourages reflective behaviours. The study concludes that reflective practice is vital for professional nursing, emphasizing the critical importance of formal training, supportive institutional policies, and dedicated reflection spaces to enhance utilization among KNH CCNs. Recommendations include implementing tailored training programs in reflective practice models and allocating protected time for reflection during shifts, integrating it into routine clinical schedules.

CHAPTER ONE: INTRODUCTION

1.1 Introduction

The foundational concept of reflection in nursing and nursing education is frequently attributed to Dewey (1933), who proposed that individuals acquire knowledge through past experience (Dhollande et al 2025.). Building on these earlier theories, Schön expanded the focus beyond the experience itself to how learning and new knowledge are developed from it. His perspective emphasized the crucial role of the reflective process in transforming experiences into valuable insights. Schön further differentiated between reflection-in-action, which involves reflecting during an experience, and reflection-on-action, the process of reflecting after an experience, recognizing both as key learning methods (Dhollande et al., 2025).

Reflective practice is a deliberate and mindful process that integrates emotions and thinking to deepen understanding of experiences and improve behaviour and performance. Reflective practice, involves nurses critically examining perplexing events or phenomena with external support, applying critical thinking to reflective activities, connecting current issues with prior knowledge or experience, and maintaining an accommodating and open attitude (Xu et al., 2024). It involves mental processes like explaining, critically assessing, appraising, and strategizing, to apply insights in future analogous circumstances (Zarrin et al., 2023).

Research indicates that reflective practice favorably impacts the professionalism of critical care nurses, leading to increased incorporation into nurse training programs and becoming a mandatory professional obligation for qualified nurses in many countries (Marshall et al., 2022). Khoshgoftar & Barkhordari-Sharifabad (2023) consider

reflection a crucial educational tool in university settings, fostering problem-solving and critical thinking in health professions students beyond clinical skills.

Shin et al. (2023) suggest critical thinking can be honed through critical reflection, a dynamic method where nurses consider their actions to enhance understanding and steer future practices toward favorable outcomes. Nurses work in sensitive, challenging, and intricate settings involving advanced technology and more knowledgeable patients. In critical care units, nurses are central to providing care to severely ill, non-verbal patients. They rely on reflective practice to understand and respond to unique patient challenges, requiring expertise, abilities, and mindset to assess patient information and make timely decisions.

Yang et al. (2019) reported that nurses who dedicated sufficient time to reflective practice provided high-quality nursing care and demonstrated a deeper comprehension of their actions. According to Kim et al. (2018), reflective practice empowers nurses to gain understanding and control over uncertainties in their professional environment. By engaging in reflective practice, nurses are encouraged to analyze and contemplate their actions and behaviors, and it enables them to stay updated with evidence-based approaches, delivering high-quality nursing care to diverse populations. Reflective practice is crucial in mitigating "reality shock" for recent nursing graduates transitioning from university to clinical practice, leading to a growing emphasis on integrating critical reflection into training initiatives for new graduate nurses, including nursing residency programs (Shin et al., 2023).

Reflective practice can be nurtured through a variety of approaches, encompassing both verbal and written methods. The verbal avenues involve engaging in workshops, participating in discussions, or gaining insights through clinical experiences. On the

other hand, written methods entail employing techniques such as reflective writing, maintaining portfolios, professional memoirs, practice narratives, and reflexivity booklets and keeping journals (Timizar-Le Pen et al., 2020). Furthermore, (El Atmani, 2025) promotes concept mapping as a visual aid to help students spatially organize knowledge, which in turn boosts their ability to reflect, organize information, optimize learning, and foster creativity. Ingham-Broomfield (2021) suggests that possible sources of contemplation encompass everyday occurrences, uplifting and discouraging moments, unexpected events, customary activities, significant occurrences, and encounters like mishaps involving incorrect medication administration.

1.2 Background

Reflective practice significantly benefits the professionalism of critical care nurses, leading to its increased integration into nurse training and becoming a mandatory professional obligation in many countries (Marshall et al., 2022). Khoshgoftar & Barkhordari-Sharifabad (2023) view reflection as a vital educational tool in universities, enhancing problem-solving and critical thinking skills in health professions students. Reflective practice has gained global recognition in clinical settings, with nations like the UK, US, and Australia using e-portfolios for student nurses to document their reflections (Ticha & Fakude, 2015). In South Africa, it was introduced into undergraduate nursing education in the 1980s, and the South African Nursing Council now mandates critical reflection for bachelor's degree graduates, leading some institutions to require it in fourth-year courses (Matshaka, 2021). For example, a South African university in the Western Cape requires undergraduate nursing students to submit portfolios of their clinical experiences for assessment (Ticha & Fakude, 2015). Similarly, Babcock University in Nigeria successfully integrated reflective journaling into its nursing curriculum for direct entry students in their second

and third years (Toyin, 2017). However, the adoption of reflective writing in nursing education is not as widespread in Sub-Saharan Africa (Sera et al., 2021). Despite its consistent global practice in clinical nursing education, reflective journaling has seen limited adoption in Kenya (Serah et al., 2020). Gathu (2022) at Aga Khan University, Kenya, reported that reflective practice is not fully utilized, with only a limited number of physicians regularly participating.

Several studies in nursing have drawn upon or further developed the theory of reflective practice. Galutira (2018) proposed a meso-level nursing theory asserting that nurses must engage in reflection-before-action, reflection-in-action, reflection-on-action, and reflection-beyond-action to advance nursing practice, emphasizing the crucial role of the environment in learning from experiences. Bijani et al. (2021) explicitly grounded their work on developing a clinical practice reflection questionnaire for nursing students in Dewey's (1933) theory, recognizing learning as a combination of experience and reflection. Similarly, Edwards (2017) provided a theoretical framework for reflection in nursing, synthesizing Dewey's and Schön's ideas to outline comprehensive reflection types (reflection-before-action, reflection-in-action, reflection-on-action, and reflection-beyond-action), which subsequently serves as a theoretical lens for other researchers. Reflection, by delving into past experiences, enhances learning and performance. It is a skill that requires intentional cultivation and active effort rather than spontaneous development (Gustafsson et al., 2021). Atmani (2023) emphasizes that acquiring reflective practice necessitates deliberate guidance during both initial and ongoing training. Reflective practice should be a habitual part of one's work, not a passive routine. Nursing, being a dynamic profession, demands active engagement and continuous reflection for effective patient care and quality improvement. It is a hands-

on approach where nurses learn from experiences through purposeful self-evaluation (Jorwekar, 2017).

Research on nurses' utilization of reflective practice yielded varied findings. A Japanese multicenter study by Sera et al. (2021) reported an average reflection score among participating nurses, noting score variations across different hospital units. The study also identified a positive and significant link between reflection and both work engagement and self-efficacy. Similarly, Zarrin et al. (2023) found generally high levels of reflection among nurses, averaging 86.5%, which correlated with increased confidence and job commitment, though this also varied by unit. In contrast, research from Egypt by Mohamed & Taie (2024) indicated infrequent use of reflective practice by nurses. This was largely attributed to a lack of understanding of its meaning and benefits. Mohamed & Taie (2024) reported that 80.5% of nurses had unsatisfactory knowledge, and Amir et al. (2023) noted that many nurses lacked effective application skills despite recognizing its importance. Studies on the utilization of reflective practice models offer a complex view. While research by Ardian et al. (2019) indicated that Gibbs' Reflective Cycle enhanced nurses' critical thinking and reflection proficiency, challenges like resource access and initial skill deficits persisted despite training. Dhollande et al. (2025) found mixed responses to Gibbs' Cycle among undergraduate nursing students; some found it helpful, but others noted significant drawbacks such as time commitment and stage confusion, suggesting the model's complexity could impede its effective use. Amidst these findings, Ingham-Broomfield (2021) examined four reflective practice models—Gibbs' Reflective Cycle, Kolb's Reflective Cycle, Atkins and Murphy's Model of Reflection, and Borton's Framework for Reflection—concluding that regulatory bodies expect nurses to be reflective practitioners, and familiarity with these models significantly aids nurses in integrating reflection into

daily practice to enhance their knowledge and ongoing education. Furthermore, a study by Cheng et al. (2020) in China, involving 3,228 nurses, found that demographic factors such as age, years of experience, educational attainment, and job position significantly influenced nurses' engagement in reflection. Nurses with more patient care experience, those in higher responsibility positions (e.g., nurse managers), and those with higher educational qualifications showed a greater commitment to incorporating reflective practice.

Despite its recognized benefits, applying reflective practice in healthcare faced challenges. Unsuccessful application had been linked to adverse events, such as the deterioration of care at the Mid Staffordshire Hospital in the UK. A significant research gap existed concerning the precise resources essential for successful reflective practice in healthcare settings. While resource scarcity could worsen problems and lead to substandard care, there was a need for in-depth investigation into specific resources like time, training, and support systems required for nurses to engage effectively in reflective practice. Addressing this gap could provide insights into how healthcare organizations could better support staff and enhance care quality (Vries & Timmins, 2016). Shin et al. (2023) reported that many healthcare institutions struggled to provide educational support for reflective practice due to constraints in resources, finances, and time, but their study did not explore potential strategies to address these challenges. Jorwekar (2017) highlighted that reflective practice presented challenges and disadvantages, including the potential for individuals to experience uncomfortable and distressing emotions. This process could also lead to confusion among nurses regarding which situations warranted reflection. Uncertainty could arise from a lack of comprehensive guidance on managing unpleasant emotions during reflection. This underscored the importance of developing structured frameworks and support systems

to help individuals effectively manage and benefit from their reflective practice. In South Africa, despite identified challenges associated with reflective practice in nursing, there was a significant gap in understanding specific barriers and facilitators of engagement among critical care staff (Mahlanze & Sibiya, 2017). Further investigation was needed to explore the root causes of declining professional growth, increased misconduct, and negative attitudes among nursing staff, focusing on factors that hindered or promoted reflective practice adoption. This underscored the need for a comprehensive study examining the unique socio-cultural, organizational, and individual factors influencing reflective practice among nurses in South Africa, aiming to develop targeted interventions (Mahlanze & Sibiya, 2017).

Currently, there limited domestic and international research gap exists concerning critical care nurses' utilization of reflective practice. Consequently, investigating critical care nurses' engagement with reflective practice is a vital endeavor.

1.3 Statement of the Problem

Despite the widely recognized benefits and the integration of reflective practice into nursing training frameworks, critical care nurses (CCNs), particularly within demanding environments like the Kenyatta National Hospital (KNH) Critical Care Units (CCUs), face significant challenges in its effective implementation. The inherent nature of CCU work, characterized by high physical, cognitive, and emotional demands, heavy reliance on expertise, and insufficient ergonomic solutions, considerably exacerbates work-related stress among CCNs (Larsson et al., 2022). This demanding environment, compounded by a suboptimal nurse-to-patient ratio (Meng’anyi et al., 2017) and heavy workloads, directly impedes nurses' ability to consistently engage in reflective practice (Larsson et al., 2022).

Furthermore, existing research reveals a documented deficiency in critical thinking and reflective practice skills among nurses, contributing to sub-optimum performance and specific gaps in knowledge and skills (Yu et al., 2019; Zhang et al., 2017). Novice nurses, in particular, often report feeling inadequately prepared for the realities of clinical practice within a year of graduation, struggling to effectively apply classroom theory and integrate research evidence, which compromises their performance and hinders clinical reasoning (Tuitoek, 2022). The high proportion of work hours dedicated to direct patient care further limits opportunities for reflective engagement (Larsson et al., 2022), and many nurses lack foundational knowledge and training in reflective practice and writing (Yu et al., 2019).

While reflective practice offers numerous advantages in enhancing patient care quality, decreasing treatment expenses, and shortening hospital stays (Xie et al., 2020), there is a notable scarcity of research specifically focusing on its application in clinical settings, particularly within Critical Care Units in Kenya. This significant gap in understanding the current utilization of reflective practice by critical care nurses at KNH limits the ability to effectively address observed challenges in nurse performance, professional growth, and the overall quality of patient care. Therefore, this study aims to examine and outline how nurses working in the CCUs at KNH currently utilize reflective practice in their profession to bridge this knowledge gap and inform future interventions.

1.4 Justification

This thesis is justified by the vital role reflective practice plays in improving nursing care, patient outcomes, and professional growth in complex healthcare settings. Reflective practice is an indispensable tool for enhancing patient outcomes and

ensuring optimal care. It enables nurses to thoughtfully review their actions, identify areas for improvement, and adapt their approaches. This adaptive learning is crucial in dynamic environments like those faced during the recent COVID-19 pandemic, helping nurses determine the best care regimens and avoid potential medical-legal issues by minimizing errors and enhancing patient safety.

Additionally, the effective implementation of reflective practice directly determines the quality of nursing care and patient health outcomes. By actively reflecting, nurses refine their clinical judgment, improve decision-making, and personalize care. This research is essential to gather empirical data, providing "documentary proof" of how nurses in demanding Critical Care Units actually use reflective practice. This data will confirm its application and, critically, identify any specific shortcomings or barriers.

Finally, this research is essential for developing evidence-based institutional policies and fostering a culture of continuous improvement. The findings will offer "fundamental results" for creating robust hospital policies, supportive cultures, and effective systems for reflective practice. Specifically for Kenyatta National Hospital, these insights will directly inform management's decisions on implementing policies that promote training and mentorship in reflective practice. Such policies are a strategic imperative for developing a workforce of critically thinking, adaptable, and highly skilled critical care nurses, ultimately leading to sustained improvements in patient care and significant professional growth.

In essence, this thesis is fully justified by its potential to generate actionable knowledge about reflective practice, which is fundamental for ensuring high-quality, safe, and adaptive nursing care in challenging environments like KNH's Critical Care Units. The

insights gained will significantly contribute to professional development, patient safety, and the strategic enhancement of healthcare service delivery.

1.5 Research Questions

1.5.1 Main research question

What is the extent of reflective practice utilization among nurses in the critical care units at Kenyatta National Hospital?

1.5.2 Specific research questions

1. What is the level of utilization of reflection among nurses working in the critical care units at Kenyatta National Hospital?
2. What is the relationship between nurse characteristics and utilization of reflective practice by nurses working in the critical care units at Kenyatta National Hospital?
3. What is the relationship between critical care nurses' perception of reflective practice and utilization of reflective practice within the Critical Care Units at Kenyatta National Hospital?
4. What is the relationship between facility related factors and utilization of reflective practice by nurses working in the critical care units at Kenyatta National Hospital?

1.6 Research Objectives

1.6.1 Broad Objective

To determine the utilization of reflective practice by nurses working in the critical care units at Kenyatta National Hospital.

1.6.2 Specific Objectives

1. To determine the level of utilization of reflection among nurses working in the critical care units at Kenyatta National Hospital.
2. To explore the relationship between nurse characteristics and utilization of reflective practice by nurses working in the critical care units, Kenyatta National Hospital.
3. To assess the relationship between critical care nurses' perception of reflective practice and utilization of reflective practice within the Critical Care Units at Kenyatta National Hospital.
4. To determine the relationship between facility related factors and utilization of reflective practice by nurses in the critical care units, Kenyatta National Hospital.

1.7 Theoretical Framework

This study is guided by John Dewey's theory of reflective practice. Dewey introduced the idea of reflective practice in 1933 and is credited with developing this theory, which is considered a middle-range theory.

In his 1933 work, "How We Think," John Dewey defined reflective thought as the active, persistent, and careful consideration of beliefs or knowledge, examining their supporting grounds and implications. He saw reflection not as passive recall, but as a deliberate process of "thinking to learn," particularly useful for resolving puzzling

situations. Dewey outlined five phases of this thinking: initial suggestions, transforming a difficulty into a solvable problem, using ideas as hypotheses to guide observation, mentally elaborating on the idea, and finally, testing the hypothesis through action.

The propositions of this theory suggest that a clinical experience or situation stimulates nurses' thoughts and/or feelings, which then serve as a trigger for reflection. Furthermore, the theory posits that nurses' developed cognitive skills, knowledge, time allocation, and a supportive workplace culture promote reflection. Conversely, factors such as a lack of cognitive skills, an absence of theoretical knowledge, insufficient time allocation, and an unsupportive workplace culture are understood to hinder reflection. The theory also proposes that reflection can occur retrospectively (on action), in the moment of action (in action), and prospectively (before action), extending to encompass learning beyond the immediate experience (beyond action).

The variables central to this study are directly represented by the core concepts and propositions of the theory of reflective practice. These variables include: Nurses' level of reflective practice: This directly aligns with the active engagement and application of reflection in clinical settings. Nurses' perception of reflective practice: This variable explores how nurses understand and value the reflective process, connecting to the initial "feelings" or "thoughts" stimulated by a situation as triggers for reflection. Nurse-related factors: These factors influence a nurse's ability to engage in reflection. They are represented by: Level of education, training, experience and position held in the institution, managerial responsibility, theoretical knowledge, social demographic factors; these align with the theory's proposition that cognitive skills and knowledge promote reflection, while their absence can hinder it. Relationship between nurse characteristics and utilization of reflective practice: This variable explores the interplay

between individual nurse attributes and their actual engagement in reflective practice, reflecting the dynamic nature of the theory where individual skills and context interact to foster or impede reflection. Facility-related factors: These organizational and environmental elements influence the practice of reflection within the healthcare setting. They are represented by: environmental support, time allocation, organizational policies, management support; these factors directly relate to the theory's proposition that a supportive workplace culture and adequate time allocation are crucial for promoting reflection.

1.8 Conceptual Framework

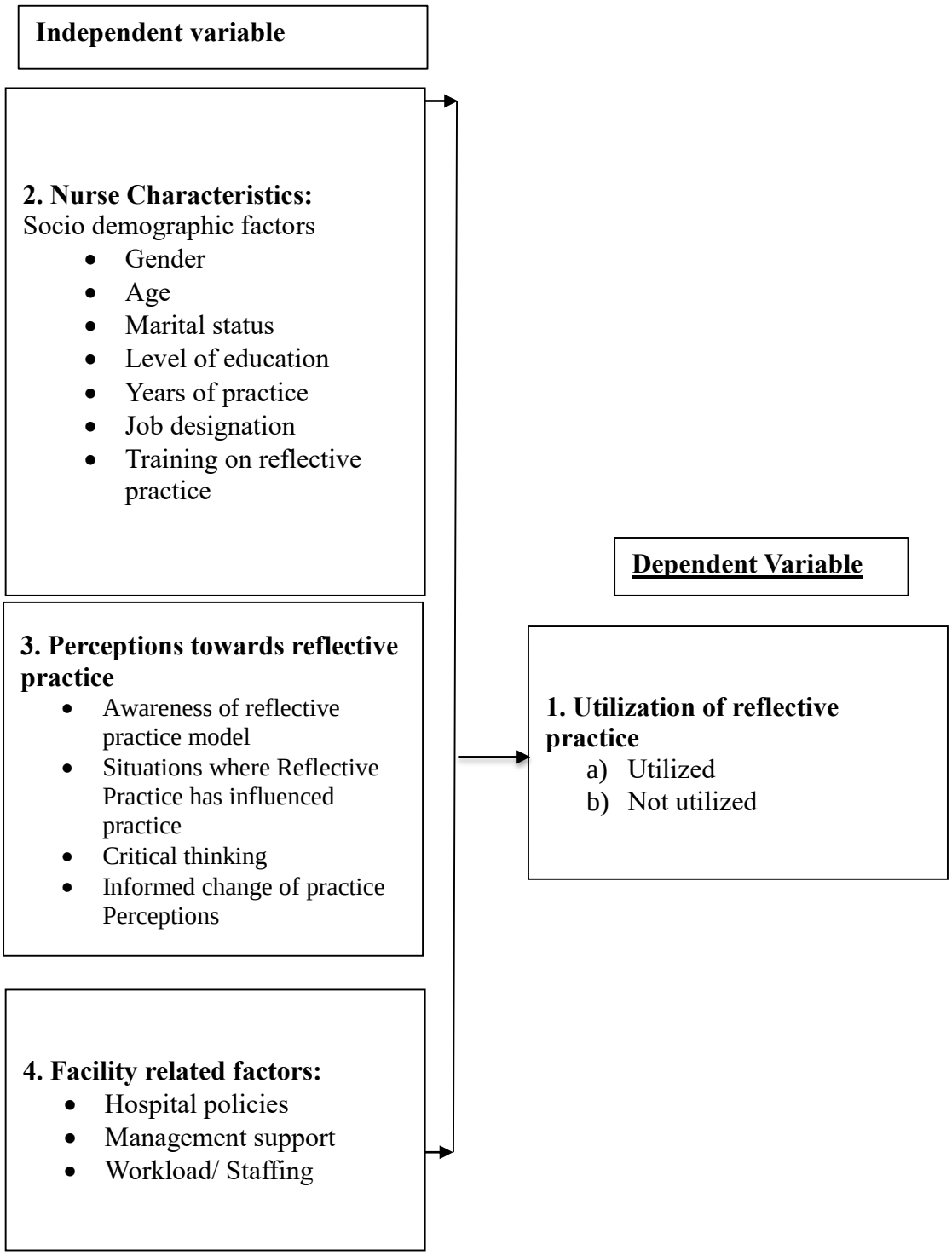

Figure 1.1 Conceptual Framework (Dewey, 1933)

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

A comprehensive exploration of existing literature was conducted to offer insights into the concepts related to the research subject, as well as to encompass notable works that have been recently released concerning the subject matter. The significance of a literature review lies in its ability to allow the researcher to glean insights from prior investigations, situate their study within the pre-existing realm of knowledge, demonstrate the approaches used in examining the subject, and establish a contextual framework for the research.

2.2 Search Strategy

A comprehensive examination of the existing literature was carried out by utilizing various search engines, such as PubMed, Google Scholar, CINAHL, Biomed Central, Ovid, Web of knowledge, Scopus, EMBASE. The purpose of this review was to identify pertinent articles encompassing subjects like critical care, nursing, nurse education, reflective practice, critical thinking, utilization of knowledge, perceptions, and educational levels, Research conducted between 2011 and 2023 was examined, specifically focusing on studies available in the English language only.

2.3 Level of utilization of reflective practice by nurses

This chapter provides a comprehensive review of existing literature on nurses' utilization of reflective practice; an acknowledged crucial component of professional development whose actual implementation shows varied results. The review will explore the diverse factors influencing nurses' engagement in reflective practice, including the models used, benefits gained, and barriers encountered, drawing from international and local studies to offer a complete understanding of current knowledge.

For example, Zarrin et al. (2023) documented high levels of reflection among nurses, averaging 86.5%, and linked increased reflection to greater confidence and job dedication, although this varied by hospital unit. In contrast, studies in Egypt by Mohammed khalil, Mohamed & Taie, and Amir et al. (2019,2023, 2024) indicated that reflective practice was rarely used, often due to a lack of understanding of its meaning and benefits. Mohamed & Taie's (2024) study specifically reported a high percentage (80.5%) of nurses having unsatisfactory knowledge about reflection. While acknowledging its importance, many nurses lacked effective application skills (Amir et al., 2023).

Beyond general utilization levels, reflective writing has been highlighted as an important cornerstone of continuing professional development for healthcare practitioners in primary care Al-Mutawa et al., (2024),their analysis of written reflections from 501 healthcare practitioners, following workshops on communication, conflict resolution, teamwork, and leadership, found that most reflections were at Level 2, followed by Level 3, with the least at Level 1, using Bradley's 3 levels of reflection. They concluded that reflective writing enables health professionals and leadership to identify challenges and facilitators for effective communication, teamwork, leadership, and conflict resolution.

A study by Okamoto et al., (2017) examined reflective practice among public health nurses in Japan, finding that while it was present in general nursing education, its integration into nursing practice was limited. Consequently, the nurses' reflective practice often remained superficial, confined to daily work journals rather than extending to deeper self-examination of their actual professional practice. This superficiality is likely due to the limited educational integration, which results in a lack

of training in nuanced critical reflection, leaving nurses without the necessary tools or conceptual understanding for deeper self-analysis. Additionally, the task-oriented nature of public health nursing may reinforce the perception of reflection as mere documentation, rather than a process for critical analysis and practice improvement. A study by Xu et al., (2024), on specialist nurses in China revealed heterogeneity in reflective practice levels, classifying nurses into four types. Their findings indicated that 40.7% of specialist nurses showed a moderately high level of reflective practice, and 27.3% demonstrated a higher level, suggesting an overall moderately high capacity among specialist nurses in Chinese tertiary general hospitals. This heterogeneity and overall capacity can be attributed to factors within specialist nursing roles and educational contexts, where complex clinical situations drive some reflection. Individual differences in personality, training, supportive environments, and commitment likely explain variations, while structured educational frameworks in Chinese tertiary hospitals may introduce foundational reflective concepts. This implies that while basic reflection is present, more personalized interventions are needed for sustained high-level engagement, as indicated by the existence of distinct subgroups in their latent profile analysis.

Challenges in utilizing reflective practice are also evident in other contexts. Qualified nurses often struggle due to limited critical thinking and reflective skills, hindering their ability to analyze and learn from clinical experiences, thus impeding professional growth (Yu et al., 2019). Filmalter & Heyns (2015) found significant resistance among critical care nurses, with many struggling to acknowledge errors or perceive benefits from reflection, indicating low engagement. Similarly, Røsnæs et al. (2017) reported that critical care nurses, despite understanding its significance, were hesitant to implement reflective practice, experiencing panic and uncertainty when reflecting on

distressing experiences, especially with experienced nurses present. Achi et al. (2016) noted that Nigerian nurses faced challenges integrating reflection into daily routines, even while recognizing its importance for personal growth and improved practice. Furthermore, Jones et al. (2020) highlighted that a punitive management approach in an English National Hospital Trust deterred effective reflective practice, as feedback was used against nurses, particularly in negative incident reviews, leading to low and negative engagement.

Despite these challenges, dedicated training programs significantly enhance reflective practice. Critical care nurses who underwent reflective practice training demonstrated improved critical thinking (Yu et al., 2019). Similarly, a two-month program in Korea improved nurses' understanding and application of reflective practice concepts (Kim et al., 2018). In China, a six-month reflective training program augmented critical thinking and reflective skills in both student nurses and mentors (Zang et al., 2019). These findings underscore the vital role of targeted training in professional development, effective care, improved clinical decision-making, and better patient outcomes. A Canadian training initiative, starting in 2003, also led to a significant increase in nurse managers' depth of understanding, consciousness, responsiveness to patient worries, and improved colleague rapport, indicating enhanced reflective practice and improved interactions and patient-centered care (Smith et al., 2018). The development of reflective practice in nurses is not an inherent or spontaneous process; instead, it relies heavily on effective training programs and targeted interventions for its formation and growth (Xu et al., 2024).

Regarding specific reflective models, various models of reflective practice are recognized as highly applicable within nursing education. El Atman (2025), particularly highlights Kolb's (1984) experiential learning theory as well-suited due to its cyclical nature. This model effectively integrates action and reflection through four key stages: concrete experience, observation (knowing), reflection (processing), and abstract conceptualization (transformation). Similarly, Zhan et al. (2023) utilized Gibbs's reflective cycle in their qualitative study on master of nursing specialist internship experiences through written reflections. This structured framework, encompassing stages such as description, feelings, evaluation, analysis, conclusion, and action plan, has proven effective and enjoyable in clinical education. Its successful application guides nursing majors and students in logically reflecting on clinical events, reinforcing the understanding that substantial knowledge and deeper comprehension derive from continuous reflection on experience, ultimately leading to more informed actions.

Dhollande et al. (2025) found mixed responses to Gibbs' Reflective Cycle among undergraduate nursing students. While helpful for structuring self-assessment, drawbacks included significant time commitment and confusion between evaluation and analysis stages, limiting its effective implementation. The study by Dhollande et al., (2025), highlighted that the current evidence supporting educational programs for reflective practice models is predominantly theoretical. This suggests a considerable gap in comprehending how these reflective practice models are consistently and practically applied in actual nursing practice.

2.4 Nurse characteristics and utilization of reflective practice

2.4.1 Social demographic factors of nurses and reflective practice

Research consistently indicates that various factors influence the engagement of specialist nurses in reflective practice and their personal growth. Xu et al., (2024) demonstrated that among geriatric specialist nurses, socio-demographic characteristics such as age, educational attainment, professional title, years of work experience, monthly income, and the nature of employment played a significant role in influencing their reflective practice and personal growth initiative. Complementing this, Xu et al. (2023) study involving specialist nurses in eight tertiary hospitals in Tianjin similarly revealed that factors including years of experience, job title, position, highest qualification, nature of employment, and multidisciplinary team membership significantly impacted their reflective practice. These studies often assessed reflective practice levels using total scale scores, a method, however, noted for its inability to effectively distinguish variations in participant responses across individual assessment items. In contrast to the general influence of experience on professional roles, Okamoto et al., (2017) observed a weak correlation (0.129) between years of experience and reflective practice skills among Japanese public health nurses. This finding stood in stark contrast to the strong correlation (0.627) they found between years of experience and practical skills. This disparity suggests that reflective practice does not automatically improve with the mere accumulation of professional experience. Instead, its development necessitates intentional and structured engagement, along with targeted training, mentorship, or a supportive professional context. Without such focused efforts, reflective practice may remain at a superficial level, failing to evolve into deeper critical analysis, a progression unlike the inherent improvement often observed in practical skill development through experience. Similarly, Huang, Chen, et al. (2023),

study observed a significant difference in reflective practice levels among specialist nurses based on marital status, noting that married nurses engaged in reflective practice 1.846 times more often than unmarried nurses. This suggests a possible connection between marital status, life experience, and a sense of responsibility influencing reflective engagement. The researchers proposed that increased family responsibilities and challenges faced by married nurse specialists might prompt greater self-reflection and a stronger drive for professional development.

The relationship between nurses' socio-demographic characteristics and their utilization of reflective practice presents mixed findings in the literature. Several studies suggest a significant correlation between demographic factors and engagement in reflective practice. Yang et al., Lee & Oh and Cheng et al. (2019, 2020,2020), reported that age, years of experience, educational attainment, and job position influenced nurses' inclination towards reflection. Specifically, nurses with more patient care experience, those in higher responsibility positions like nurse managers, and those with higher educational attainment demonstrated a greater commitment to incorporating reflective practice into their nursing care routines.

Similarly, Achi et al. (2016) found a positive correlation between education level and engagement in reflective practice, suggesting that higher educational attainment may foster introspection and self-evaluation. Dubé & Ducharme (2015) observed that seasoned nurses and nurse managers exhibited a greater depth of understanding and heightened critical thinking and reflective capabilities compared to newly licensed nurses. Furthermore, Schumann Scheel et al. (2017) indicated that nurses typically require 2 to 3 years to develop advanced reflective abilities in critical analysis, event assessment, and information integration, highlighting a gradual enhancement of these

skills with experience. Kim et al. (2018) also noted that senior nurses, due to accumulated experience, had a better grasp of reflective practice and engaged with it more effortlessly, sometimes leading to emotional bullying of junior nurses perceived to lack this understanding. Additionally, Yurdanur (2016) found that nurses with a postgraduate certificate in critical care exhibited a significantly elevated degree of critical thinking, suggesting a positive impact of advanced specialized education.

Conversely, some research indicates that demographic factors may have limited bearing on reflective capacity. Yurdanur (2016) reported that critical thinking capacity remains largely unaffected by educational attainment or years of professional experience, challenging the assumption that higher education or more experience inherently results in superior critical thinking abilities. In alignment with this, Zarrin et al. (2023) concluded that most demographic and work-related factors, including gender, marital status, education level, shift type, work experience, age, staffing levels, and nurse-to-patient ratio, did not impact a nurse's capacity for reflection, suggesting that reflective ability is largely independent of these personal characteristics.

Despite these varying findings, an innate tendency towards self-evaluation within the nursing community has been observed. Dubé & Ducharme (2015) noted that nurses often relied on intuition or a "sixth sense" for reflective practice even without formal training, indicating an instinctive engagement in self-evaluation and improvement.

2.5 Perception towards knowledge and reflective practice

Perception towards reflective practice, vary across contexts despite its increasing recognition in nursing. Mohamed and Taie (2024) found that 98% of nurses in their study held a positive view, seeing it as beneficial. In contrast, Mohammed khalil (2019) identified negative attitudes, cultural factors, and a lack of understanding as barriers to

reflective practice in Egypt, noting that superficial engagement limited critical thinking development. However, Achi et al. (2016) reported that a significant number of nurses in Nigeria possessed a comprehensive understanding of reflective practice, challenging the assumption of universal limited knowledge.

Similarly, Almomani et al. (2020) found that critical care nurses actively embraced reflection as an essential component of their professional development. In their study, nurses participated in facilitated group sessions where they shared real-life experiences, discussed challenges, and explored strategies for improvement. These sessions, guided by an expert facilitator, allowed nurses to examine their experiences more deeply, gain valuable insights, and improve both their problem-solving skills and critical thinking abilities. Moreover, the collaborative nature of these sessions fostered a sense of community and shared learning, which enhanced their overall competence and patient care outcomes. The facilitators' role was particularly significant, as they ensured that discussions remained structured, focused, and productive, helping participants to extract meaningful lessons from their experiences.

In a meticulously designed clinical trial at the Hainan Medical Centre in China, Zang et al. (2019) investigated the impact of a novel educational intervention on critical thinking and reflective practice skills among student nurses and their mentors. The study divided participants into control and experimental groups. The control group received conventional nursing education, while the experimental group engaged in a comprehensive six-month reflective training program, delivered both individually and collaboratively. The findings revealed a remarkable surge in the critical thinking abilities and reflective practice of both students and mentors in the experimental group. This outcome underscores the efficacy of tailored reflective training, at both individual

and group levels, in augmenting the cognitive and self-assessment capabilities of nursing professionals.

Mahlanze and Sibiya's (2017) study investigated nurses' experiences with reflective practice, specifically focusing on student nurses' perceptions of reflective journal writing. Their findings presented a mixed view on the ease and depth of utilization. While a smaller group of nurses found it simple to express their emotions and views through reflection, a substantial majority encountered difficulties in articulating their thoughts. This challenge primarily arose from a strong fear of facing victimization or negative consequences for voicing their opinions. Although the study did not quantitatively assess the "level of utilization" for critical care nurses, its results underscored that a lack of psychological safety significantly impedes the effective depth of reflective practice. This suggests that the quality and honesty of reflection can be severely compromised by environmental factors, such as fear of repercussions, even when reflective activities are being performed.

In a study conducted at a National Hospital Social Trust in England, Jones et al. (2020) reported that critical care nurses held a favourable perception of reflective practice. They valued it for enabling individual exploration of their unique experiences, leading to valuable insights and transformative shifts in behaviours and attitudes. The nurses emphasized the importance of possessing adept reflective skills, not impacted by stress, burnout, or fatigue, and highlighted the necessity of proper support, including resources, guidance, and a conducive environment, to engage effectively in reflection and enhance professional growth.

2.6 Facility related factors

2.6.1 Policy

Regulatory bodies and healthcare institutions are increasingly mandating reflective practice. In the United Kingdom and Ireland, student nurses are required to maintain a reflective practice portfolio, which continues as an essential part of their professional journey beyond graduation, serving as concrete evidence of ongoing professional growth (Yu et al., 2019). Similarly, the Nursing and Midwifery Council in the UK mandates that registered nurses complete five reflective journals over three years to renew their practicing license, aiming to foster continuous learning and self-improvement (Parissopoulos, 2019). At the institutional level, Hamad Medical Corporation has integrated reflective practice and debriefing into monthly and annual education plans, implementing guidelines and protocols to facilitate mentorship within this context, demonstrating a comprehensive approach to professional development (Almomani et al., 2020).

Despite supportive policies, facility-related factors significantly impact the utilization of reflective practice. Pangh et al. (2019) found that a lack of support from various stakeholders in policy formulation, coupled with the absence of a secure, tranquil, and supportive environment, detrimentally impacted effective implementation in Iran. Their research further observed that healthcare infrastructure can either be conducive or restrictive to reflective practice. A supportive work environment boosts morale and encourages engagement, while a restrictive one demoralizes nurses. The study emphasized the critical role of the social environment and relationships, both between facilitators and nurses, and among nurses themselves, in fostering reflective practice.

In some critical care units, restrictive measures persist, stemming from a perception that reflection is not a valid or reliable source of knowledge (Khalil & Abou Hashish, 2022). This hinders reflective practice despite its acknowledged advantages for professional growth and decision-making, emphasizing the need for a broader understanding of its role in critical care. Furthermore, a study in Canada revealed that critical care nurses faced insufficient resources and inadequate funding for reflective practice training due to hospital budgetary limitations, which significantly hindered their participation (Smith et al., 2018). These findings highlight that even with clear policies, practical and environmental barriers can impede the effective utilization of reflective practice by nurses.

2.6.2 Workload/ Staffing

Nurses frequently encounter significant barriers to engaging in reflective practice, largely stemming from demanding work environments and high workloads. The Adrian et al. (2019) study indicated that heavy patient loads and demanding work environments limited the time available for structured reflection. Similarly, Smith et al. (2018) reported that critical care nurses experienced a decline in their motivation for reflective practice due to significant workload, which hindered introspection and negatively impacted morale and patient care quality. Yurdanur (2016) further found that substantial work demands and discontent within the work environment significantly impeded critical thinking, suggesting a detrimental impact on cognitive processes crucial for reflection. Additionally, Yang et al. (2019) highlighted that time limitations, primarily due to human resource constraints in the health sector, frequently impede reflective practice, making it difficult for nurses to allocate sufficient time for introspection essential for continuous improvement and learning. These studies collectively emphasize that workload, time pressures, and challenging work

environments consistently act as significant impediments to nurses' utilization of reflective practice.

2.7 Gaps in literature review

The scholar observed a lack of available research due to the limited number of studies conducted on the topic of reflective practice in critical care within the African and Kenyan context.

Most of the studies utilized are from reflective practice in nursing, reflective practice in critical care nursing and reflective practice in health care, assessment of nurses' interventions of clinical alarms in critical care unit.

The researcher also cited a study whose background is not reflective practice to demonstrate the WHO recommended nurse patient ratio in critical care as the study was done at Kenyatta National Hospital, and it portrayed the WHO recommendations.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter comprehensively outlines the methodology employed in this research study. It begins by detailing the chosen study design, providing a rationale for its selection. Subsequently, the chapter describes the specific study site and defines the target population from which participants were drawn. The inclusion and exclusion criteria, which governed participant selection, are then meticulously presented. Following this, the research instrument utilized for data collection is described in detail, along with the precise data collection procedure. Ethical considerations, integral to ensuring the protection and rights of participants, are thoroughly addressed. The chapter then elucidates the approach to data management and analysis, outlining the statistical methods and software employed. Strategies implemented to ensure the validity and reliability of the study's findings is also discussed. Finally, the chapter concludes by presenting the dissemination plans for the study results and acknowledging the study's limitation.

3.2 Study design

The researcher employed a cross-sectional quantitative approach to investigate how nurses working in the Critical Care Units (CCUs) at Kenyatta National Hospital (KNH) utilized reflective practice. This design was chosen because it allowed for the collection of data from many participants at a single point in time, providing a snapshot of the frequency and patterns of reflective practice utilization within the specified population. It was efficient for describing characteristics of the population and for identifying associations between variables, such as nurse characteristics and the level or type of reflective practice engaged in, without inferring causality. Data was collected in March 2021.

3.3 Study Specific area

The research was conducted at Kenyatta National Hospital (KNH), a level 6 teaching, referral, and research hospital established in 1901 in Nairobi, Kenya. As Kenya's oldest healthcare facility, KNH has an 1800-bed capacity and a workforce of over 6000 staff members, including 257 critical care nurses. The hospital houses eight critical care units (CCUs) with a total of 61 beds, serving patients from Kenya and across East and Central Africa. These units include the Main CCU (21 beds), and Seven subsidiary CCUs, each with 5 beds: Medical CCU, Neonatal CCU (NICU), Paediatric CCU (PICU), Neurology CCU, Cardiology CCU, Private CCU, and Maternity CCU. Patient admission to a specific unit depends on their condition, age, and financial status, with transfers occurring if a designated unit lacks an available bed. The study encompassed all eight of these critical care units at KNH.

3.4 Target Population

The target population for this study were all nurses employed in the critical care units (CCUs) at Kenyatta National Hospital (KNH) because these units represented a specialized and high-acuity environment where the demands for continuous learning, complex decision-making, and emotional resilience were particularly high. Nurses in CCUs frequently encountered intricate patient conditions and challenging ethical dilemmas, making reflective practice exceptionally relevant for professional development, improving clinical judgment, and ensuring optimal patient outcomes within this demanding setting. Therefore, focusing on this specific group allowed for a direct investigation of reflective practice utilization within a context where its importance was paramount. There is a total of 257 nurses in these units, distributed as follows:

Table 3.1 Target population

Critical Care Unit	Number of nurses
Main	105
Medical	42
PICU	26
NICU	12
Maternity	18
Cardiac	19
Private	18
Neurology	17
Total	**257 nurses**

3.5 Determination of sample size

Sample size was determined using the Fishers et al Formula (1998).

$$n = \frac{Z^2 P(1-P)}{1^2}$$

Where,

N= Sample size (where population >10000.

Z= Normal deviation at the desired confidence interval. It this case it was taken at 95%, Z value of 95% is 1.96.

P= Proportion of the population with the desired characteristic.

1^2 = Degree of precision, was taken to be 10%.

Since the proportion of the population with the characteristics is not known then 50% was used.

$$n = \frac{Z^2 P(1-P)}{1^2} = n = \frac{1.96^2 \times 0.5(1-0.5)}{(0.05)^2} =$$

(3.8416×0.25) ÷0.0025= 384.16

= 385

Since the population of critical care nurses is 257 hence less than 10000, the sample was adjustment and was done using the following formula.

$$nf = \frac{n}{1 + \frac{n}{N}}$$

Where,

nf= The desired sample size for population < 10000.

N= The calculated sample size.

N= The total population: $nf = \frac{385}{1+\frac{385}{257}} =$ 154

The sample size for this study is **154**

3.6 Sampling technique

Kenyatta National Hospital was purposely selected for the study due to its status as a level 6 teaching, referral, and research hospital. It handled a high volume of diverse and complex medical cases, particularly attracting a constant stream of critical care patients. This consistent patient flow ensured a rich and accessible population for studies focusing on critical care, providing ample opportunities to observe, collect data, and analyze phenomena related to critical care nursing practices. Its role as a major referral center also meant it received patients from a broad geographical area, potentially offering a more varied sample. The process of carrying out stratified sampling began by identifying the eight (8) critical care units (CCUs) as the strata. For each of these eight CCUs, a proportionate sample size was calculated. This meant that the total desired sample size for the study was distributed among the eight CCUs in proportion to their relative size or number of participants. Once the proportionate sample size for each CCU was determined, participants were then selected from within each individual CCU according to its calculated proportion.

Convenience sampling, a non-probability technique, was employed, wherein respondents were selected based on their easy accessibility and proximity to the researcher. The process of approaching and recruiting convenient respondents continued until the desired sample size was reached. The rationale for using convenience sampling in this specific case was the diverse work schedules of the target population, which meant the researcher aimed to capture respondents from each of these shifts as they became conveniently available. The emphasis was on ease of access, given the logistical challenges of reaching individuals on varying and potentially irregular schedules. The procedure involved determining specific times and locations where respondents with diverse work schedules (evening, morning off, half day, night shifts) were readily available, such as shift changeovers or common break areas. The researcher then approached individuals at these identified locations and times and invited them to participate in the study, selecting those who were convenient to reach during various shifts. Before participation, the researcher explained the study's purpose, the nature of the questions, and ensured confidentiality; informed consent was obtained from all willing participants. Once consent was given, the researcher administered the data collection instrument to the selected respondents.

Table 3.2 Sampling Technique

Department	$Sample\ size\ per\ unit = \frac{Population\ per\ unit}{Total\ population} \times sample\ size(n)$	**Sample size per unit**
Main CCU	$\frac{105}{257} \times 154$	64
Medical CCU	$\frac{42}{257} \times 154$	26
PICU	$\frac{26}{257} \times 154$	16
NICU	$\frac{12}{257} \times 154$	7
Maternity CCU	$\frac{18}{257} \times 154$	10
Cardiac CCU	$\frac{19}{257} \times 154$	11
Private CCU	$\frac{18}{257} \times 154$	10
Neurology CCU	$\frac{17}{257} \times 154$	10
Total		**154**

3.7 Inclusion Criteria

The inclusion criteria for the study were: nurses working in critical care units who were employed on a permanent and pensionable basis, had at least one year of contract experience, and agreed to participate. The study's inclusion criteria were specifically chosen to define a precise and relevant participant group, ensuring the research could effectively meet its objectives. Nurses working in critical care units were included to focus on reflective practice within their unique high-stakes environment, ensuring data relevance to this specialized field. Those employed on a permanent and pensionable basis were selected to ensure a stable and consistent participant group with a deeper commitment and broader experience. Participants needed to have at least one year of contract experience to ensure they possessed a foundational level of clinical exposure

and professional maturity for providing rich, informed reflective data. Finally, the criterion that participants agreed to participate upheld the fundamental ethical requirement of voluntary involvement and informed consent.

3.8 Exclusion Criteria

Nurses who met the following criteria were excluded from the study; nurses not working in critical care units, nurses not employed on a permanent and pensionable basis, nurses with less than one year of contract experience, and nurses who did not agree to participate. The exclusion criteria were strategically applied to ensure the study's focus, maintain data quality, and adhere to ethical research principles. Nurses not working in critical care units were excluded to preserve the specificity of findings relevant to that specialized field. Those not employed on a permanent and pensionable basis were excluded to ensure a stable and committed participant group whose experiences were consistent with established professionals. Nurses with less than one year of critical care experience were excluded to focus on individuals with sufficient exposure and developed professional judgment for meaningful reflective practice. Finally, nurses who did not agree to participate were excluded to uphold the fundamental ethical requirement of voluntary participation and respect for persons in research.

3.9 Variables

The independent variables in the study were: social demographic factors (gender, age, marital status), nurse characteristics (level of education, years of practice, job designation, and training on reflective practice), awareness of reflective practice models, perception of knowledge on reflective practice, and facility-related factors

(hospital policy, management support, and workload or staffing). The dependent variable was nurses' level of utilization of reflective practice.

3.10 Data Collection Procedure

3.10.1 Data collection tool

A modified self-administered questionnaire that based on Linda Lawrence- Wilkes and Alan Chapman's reflective questionnaire was utilized in this study (Lawrence-Wilkes & Chapman, 2015). The Linda Lawrence-Wilkes and Alan Chapman's reflective questionnaire is a self-assessment tool designed to evaluate an individual's use of reflection for learning and development. It features five sections: "To what extent do you reflect?", "What reflection methods/tools do you use?", "Do you examine other points of view?", "What assumptions do you question?", and "Your ability/freedom to reflect?" Each item is scored on a scale, and analysis involves summing scores for individual sections and calculating a total score to indicate overall reflective potential, while section-specific scores pinpoint areas for improvement in reflective capabilities. A total score, up to 60 points across five sections, reflects overall reflective practice potential, while individual section scores pinpoint areas for improvement. This score is derived from 30 questions (6 questions per section), with each question worth a maximum of 2 points. A score of 0-20 points suggests low interest or opportunity for reflective practice, 21-40 points indicates good potential, and 41-60 points signifies strong potential for utilizing reflective practice.

Four of the five sections from the Reflective Practice self-assessment questionnaire by Linda Lawrence-Wilkes and Allan Chapman (2015) were adopted for use, comprising 15 questions. The validity of these modified Likert scale questions was established through the Cronbach Alpha index. Authors have granted permission, it can be

employed without restrictions for personal growth, educational purposes, mentoring, and research. However, publishing it without authorization is prohibited, and duplication on online platforms is also not allowed.

The questionnaire comprised three sections: Section A nurse characteristics: social demographics and Likert scale questions on knowledge of reflective practice and perception of reflective practice; Section B questions on practice of utilization of reflective practice while Section C comprised questions on facility related factors associated with utilization of reflective practice.

3.10.2 Recruitment process

The researcher initiated the recruitment process by presenting herself and explaining her visit to the supervisors of the various Critical Care Units (CCUs). Data collection commenced only after receiving authorization from both the Kenyatta National Hospital (KNH)/University of Nairobi (UON) research ethics committee and the KNH research and programs department. Nurses were then informed about the study's purpose through verbal communication delivered during morning, evening, and night shifts over a one-week period. The researcher conducted meetings with nurses at their station immediately following the morning and evening reports; night staff were also included in these meetings to ensure comprehensive awareness and ascertain willingness to participate. To facilitate data collection, the researcher arrived promptly at the beginning of each work shift to distribute and collect questionnaires. Individual nurses were approached during their tea and lunch breaks, at which point informed consent for data collection was obtained. Following completion, the researcher collected the filled questionnaires.

3.10.3 Data collection

The data collection procedure typically involved several structured steps. First, the researcher gained necessary authorizations from relevant ethical and administrative committees to conduct the study. Next, potential participants were informed about the study's purpose through clear verbal communication, often in group settings or individually, occurring at times convenient for them, such as during shift changes or breaks. Following this, informed consent was obtained from all willing participants by filling a consent form, ensuring their voluntary agreement. Once consent was secured, the questionnaires were distributed to the participants. The researcher typically ensured availability at the beginning of shifts or during designated breaks for distribution and to answer any questions. Finally, after participants completed the questionnaires, the researcher collected them. Throughout this process, measures were taken to ensure confidentiality and anonymity of the participants and their responses.

3.11 Reliability and validity

3.11.1 Pre-Testing

Pre-testing the research instrument allowed the researcher to identify and revise questions that respondents found unclear. The rationale for this process was to ensure the validity and reliability of the research tool. By modifying ambiguous questions, the researcher could confirm that the instrument accurately measured what it intended to measure (validity) and would produce consistent results (reliability).The questionnaire underwent pre-testing at the Accident and Emergency Department of Kenyatta National Hospital (KNH). This location was chosen because its environment, characterized by acute patients on physiological monitors and mechanical ventilators, closely resembled that of a Critical Care Unit (CCU). Fifteen nurses, representing 10% of the total sample size, participated in this pre-test.

3.11.2 Reliability and validity of the instruments

Prior to the study, the researcher conducted a pre-test to establish its content and face validity. The reliability of the Likert scale questions was evaluated using the Cronbach's Alpha test, which demonstrated consistency in testing the intended variables. Fifteen participants (10% of the sample size) were included in the pre-test, with a 93% response rate, yielding data from 14 participants. The Cronbach's Alpha index after reliability analysis was 0.88, which indicated a high level of internal consistency for the data collection instruments, as scores above 0.7 were considered favourable.

Table 3.3 Pre-test results for Likert questions (n=14)

	Questionnaire item	**Cronbach Alpha index**
1	How many times in a month do you hold reflective practice sessions?	0.8733
2	After interacting with patients or clients I think about how things went during the interaction.	0.856
3	When reflecting with others about my work I develop new perspectives and insights.	0.8503
4	I make decisions about events as they happen.	0.8578
5	I find that reflecting with others about my work helps me work out problems I might be having and I become aware of issues I had not considered.	0.8447
6	I don’t experience difficulties when sharing information during reflective practice sessions.	0.8598

	Questionnaire item	Cronbach Alpha index
7	I write notes which I review for example diary, journal on reflective practice.	0.8665
8	My nurse officer in charge of the CCU fully supports reflection at work.	0.8706
9	I seek feedback from colleagues and others about events or issues.	0.8754
10	I look or utilize research evidence in reflective practice.	0.8522
11	After engaging in refection, I develop negative feelings, emotions and anger which affect me.	0.8727
12	My relationship with colleagues and management affects my practice of reflection.	0.8704
13	I look for relevant discussion, conference or CME (continuous medical education) on reflective practice.	0.8568
14	When engaging in reflection as a group I become more empowered than when I reflect alone.	0.8631
15	The presence of CCU in charge during reflective practice sessions brings feelings of insecurity.	0.8774
16	Reflective practice sessions are used as a forum for witch- hunting or punishment.	0.8856
	Overall Cronbach Alpha index	0.8763

Table 3.4 Cronbach Alpha index results (n=14)

Cronbach Alpha index results (n=14)

Variable	No. of items	Cronbach Alpha index	Remarks
Level of utilization of reflective practice	16	0.88	Reliable

Source: Field Data (2022)

3.12 Data management

Data management ensured the accuracy, integrity, security, and accessibility of data throughout the research life-cycle, involving a systematic process designed to ensure confidentiality and readiness for analysis. This began with planning, where a detailed data management plan (DMP) was developed to outline how data would be collected, stored, protected, maintained, and shared, specifying formats, naming conventions, and ethical considerations. During collection, procedures for consistent and accurate data acquisition were implemented using standardized tools to minimize errors.

Data organization and storage involved structuring information logically in databases or spreadsheets, establishing naming conventions, and securely storing it in password-protected systems or locked cabinets to prevent unauthorized access or loss. This process specifically included numbering all collected questionnaires and consciously omitting any participant identifiers to guarantee confidentiality and anonymity.

The coded data then underwent deidentification, removing any remaining links to individual participants, and this deidentified data was securely stored in locked file cabinets, safeguarding its integrity and privacy. Cleaning and validation identified and corrected errors, inconsistencies, or missing values through checks for data entry errors, outliers, and logical inconsistencies. Documentation included maintaining comprehensive records like, code-books for future reference and usability. Security and

confidentiality measures were implemented, involving anonymity or DE-identification, access controls, and adherence to ethical guidelines. Regular backup and recovery plans were established to prevent data loss. Finally, the data was prepared for analysis by processing it using SPSS version 25.0.

Effective data management is crucial for the credibility, reproducibility, and transparency of research findings. It safeguards against errors, promotes ethical conduct, and maximizes the long-term value of research data.

3.13 Data analysis

The gathered quantitative data was then inputted into Microsoft Excel and the statistical package of social sciences (SPSS) version 25.0. The process of data analysis involved several steps. First, descriptive statistics were calculated for the data pertaining to objectives 1, 2, 3, and 4. This involved summarizing, organizing, and presenting the data to understand its basic features. Before analysis, raw data was collected, cleaned, and organized into a usable format. Depending on whether the data was numerical or quantitative, relevant measures were chosen, including measures of central tendency (mean, median, mode) and measures of variability (range, variance, standard deviation, quartile/percentiles). These statistics were then organized and displayed using frequency tables, pie charts, and percentages, specifically counting the occurrences of different values or categories for each relevant variable. Finally, the calculated and visualized descriptive statistics were interpreted to gain insights into the data-set, with findings reported in tables, graphs, and textual summaries. Inferential statistics were utilized to draw conclusions and make predictions about a larger population based on sample data. The process commenced with the formulation of hypotheses concerning the population. For objectives 1, 2, 3, and 4, the researcher applied both logistic

regression analysis and the Chi-square test of independence. The rationale behind employing inferential statistics was to generalize findings from the studied sample to a broader population, assessing whether observed relationships or differences between variables were statistically significant and thus likely to exist within the larger group, rather than being due to random chance.

3.14 Study results dissemination plan

The study's results will be shared with pertinent stakeholders for review. The researcher will present the findings during the morning report in the critical care units and disseminate them to the Research and Programs Department at Kenyatta National Hospital (KNH), the head of Specialized Units at KNH, and the supervisors of each of the Critical Care Units (CCUs). The report will subsequently be shared with the Kenyatta University librarian responsible for the School of Nursing to be included in the university repository. Additionally, the findings will be published in peer-reviewed journals and presented at relevant conferences.

3.15 Limitations of the study

The study faced several limitations. Its use of non-probability sampling, specifically convenience sampling, introduced bias and reduced sample representational, making it difficult to generalize findings to a broader population, as evidenced by only females participating from the private CCU. Furthermore, limited time for data collection constrained the depth of investigation and the observation of long-term effects. The reliability and validity of the self-report questionnaires used could have affected data accuracy due to potential recall or social desirability bias. Inherent limitations of the chosen research design also impacted the study. Additionally, limited funding, personnel, or access to certain technologies restricted the scope. Finally, response bias

occurred as certain groups were less likely to participate, exemplified by the refusal of all CCU in-charges to take part, which could have skewed results.

3.16 Logistical and ethical Considerations

The researcher received ethical approval from the Kenyatta University Ethics and Research Committee, the National Commission for Science and Technology, and Innovation (NACOSTI), as well as the Kenyatta National Hospital and University of Nairobi Ethics and Research Committee (KNH/UoN ERC)

The researcher also requested authorization to carry out the study from the KNH research and programs department, the head of Anaesthesia and Specialized Units, and the managers of the CCUs. Additionally, the researcher obtained informed consent from the CCU nurses. To adhere to Covid -19 protocols, all participants wore masks properly, practised hand washing before and after data collection, frequently sanitized hands, and were encouraged to maintain a distance of 1.5 metres from each other. The researcher achieved this by approaching one nurse at a time.

CHAPTER FOUR: RESULTS

4.1 Introduction

This chapter presents the results and analysis obtained from the distributed questionnaires. The findings are illustrated using tables, graphs, pie charts, and written descriptions.

4.2 Response Rate of the study (n=152)

The researcher distributed 154 questionnaires to respondents for the study. Of these, 152 questionnaires were completed and returned, resulting in a 98.70% response rate.

4.3 Nurse Characteristics

A total of 152 nurses participated in the study. The majority were female (113, 74.3%), while males constituted 25.7% (39) of the respondents. The participants had a mean age of 40.5 years (±8.4), with nearly half (75, 49.3%) aged above 40 years. Nurses aged 31–40 years comprised 32.9% (50), while those aged 30 years and below accounted for 17.8% (27) of the sample.

In terms of professional experience, 94 nurses (61.8%) had been in nursing practice for more than 10 years, whereas 58 (38.2%) had 10 years or less of experience. However, when focusing specifically on experience within the Critical Care Unit (CCU), a majority of respondents (104, 68.4%) had worked in the CCU for 10 years or less, while 48 (31.6%) had over 10 years of CCU experience.

Regarding job designation, the majority (129, 84.9%) identified as primary or bedside nurses. A smaller number served as team leaders (18, 11.8%), while 5 (3.3%) indicated a dual role as bedside nurse and team leader.

In terms of educational qualifications, more than half of the respondents (78, 51.3%) held a Higher National Diploma in Critical Care Nursing. A further 46 nurses (30.9%) held a Bachelor of Science in Nursing (BScN), 19 (12.5%) had a basic diploma, 6 (3.9%) held a Master of Science in Critical Care Nursing (MScN.CCN), and 3 (2.0%) had other master's degrees. When asked about training in reflective practice, only 48 nurses (31.8%) reported having received such training during their basic nursing education, while the majority (103, 68.2%) had not.

Table 4.1 Socio-demographic Characteristics of nurses working in critical care units at Kenyatta National Hospital

Variable	**Category**	**Frequency**	**Percent (%)**
Age Group	<=30 years	27	17.8%
	31-40 years	50	32.9%
	> 40 years	75	49.3%
Gender	Female	113	74.3%
	Male	39	25.7%
No. of years in nursing practice	<=10 years	58	38.2%
	> =10 years	94	61.8%
No. of years worked in CCU	<=10 years	104	68.4%
	> =10 years	48	31.6%
Respondents designation	Primary/Bedside nurse	129	84.9
	Bedside nurse/Team leader	5	3.3
	Team leader	18	11.8
Respondents level of education	Diploma	19	12.5%
	Higher Diploma	78	51.3%
	BScN	46	30.9%
	MScN.CCN	6	3.9%
	Other MSc.	3	2%
Training on reflective practice	Yes	48	31.8%
	NO	103	68.2%

4.4 Level of Utilization of Reflective Practice of Critical Care Nurses Working at Kenyatta National Hospital

To assess the level of utilization of reflective practice, the study employed a composite criterion drawn from several dimensions, including training on reflective practice, awareness and application of reflective models, the frequency with which reflection influenced nursing practice, and participation in reflective processes.

A respondent was classified as having utilized reflective practice if they met at least one of the following criteria: had received training in reflective practice, were aware of or had used any reflective model, or reported that reflection had changed their nursing practice at least three times. Additionally, to qualify as "utilized," the respondent needed to have indicated either “Sometimes” or “Always” to engaging in practices such as writing reflective notes, using research evidence, reflecting after patient interactions, or seeking information on reflective practice However, the chi-square test showed no statistically significant relationship between age and reflective practice utilization However, the chi-square test showed no statistically significant relationship between age and reflective practice utilization However, the chi-square test showed no statistically significant relationship between age and reflective practice utilization through continuing medical education (CME) or conferences on reflective practice.

Among 138 respondents, 89 (64.5%) were aware of at least one reflective practice model, while only 1 respondent (0.7%) reported no awareness of any model. Awareness levels varied across departments, with Main CCU and PICU reporting the highest proportions. Despite the relatively high level of awareness, only 61 respondents (40%) reported using at least one reflective practice model in their nursing routine.

Additionally, the study sought to assess how frequently reflective practice had changed nursing practice. Out of 141 respondents, 83 (58.9%) reported that reflection had influenced their practice on more than three occasions. This effect was most prominent among nurses in the Main CCU (60.6%) and Cardiology unit (70%), whereas some departments like PICU and NICU showed more modest influence. Conversely, 34 respondents (24.1%) indicated that reflection had not led to changes in their nursing practice.

To further understand the depth of reflective engagement, respondents were assessed on four key indicators of the reflective process: post-patient interaction reflection, maintaining reflective notes, using research evidence, and seeking educational discussions or CMEs.

When asked whether they reflected after interacting with patients or clients, a majority of respondents, 83 (54.6%), stated that they "Sometimes" did so, while 12 (7.9%) reported they "Never" engaged in this practice. A total of 37.5% indicated they "Always" reflect post-patient interaction.

Regarding the maintenance of reflective practice notes, responses were more evenly distributed. A significant portion, 64 respondents (42.1%), reported that they "Never" wrote reflective notes, while 43.4% did so "Sometimes" and only 14.5% indicated they "Always" kept such notes. This suggests that structured documentation of reflection is an area needing improvement.

On incorporating research evidence into reflection, nearly half (49.3%) of the respondents "Sometimes" used scholarly resources to inform their practice, with 23.3% reporting "Always" and 27.3% indicating they "Never" used such evidence. Notably,

respondents with Master's degrees were the most inclined to consistently incorporate research.

When it came to seeking educational discussions, CMEs, or conferences on reflective practice, 71 respondents (46.7%) stated they "Always" pursued these opportunities. This reflects a strong desire to remain updated in best practices, although 26 respondents (17.1%) reported "Never" participating in such forums. Engagement in educational opportunities was most notable among respondents with over 20 years of experience and those who had received formal training in reflective practice.

In examining socio-demographic influences, younger nurses and those with extensive CCU experience (over 20 years) were more inclined to engage in patient interaction reflection. There were no significant gender differences across most items. Education level, particularly holding a Master's degree, positively influenced the use of research evidence in reflection.

The overall level of reflective practice utilization was determined by combining the respondents' scores across four criteria: prior training in reflective practice, awareness and use of reflective models, the number of times reflection changed their practice, and involvement in reflective processes. Based on this composite score, 95 respondents (62.5%) met the threshold for being classified as utilizing reflective practice. The remaining 57 respondents (37.5%) did not meet the minimum combination of criteria and were classified as not utilizing reflective practice.

Table 4.2 Utilization of Reflective Practice by nurses working in the Critical Care units at Kenyatta National Hospital

Utilization of reflective practice	Frequency	Percent (%)
Utilized	95	62.5
a) Reflective model (utilization of at least one Reflective model)		
b) Number of times the use of RP positively changed nursing practice (utilization of >=3 times)		
c) Reflective process (evidence of actual reflective practice)		
Not utilized	57	37.5
a) Reflective model (utilization of at least one Reflective model) = 0		
b) Number of times the use of RP positively changed nursing practice (utilization of <3 times)		
c) Reflective process (No evidence of actual reflective practice)		

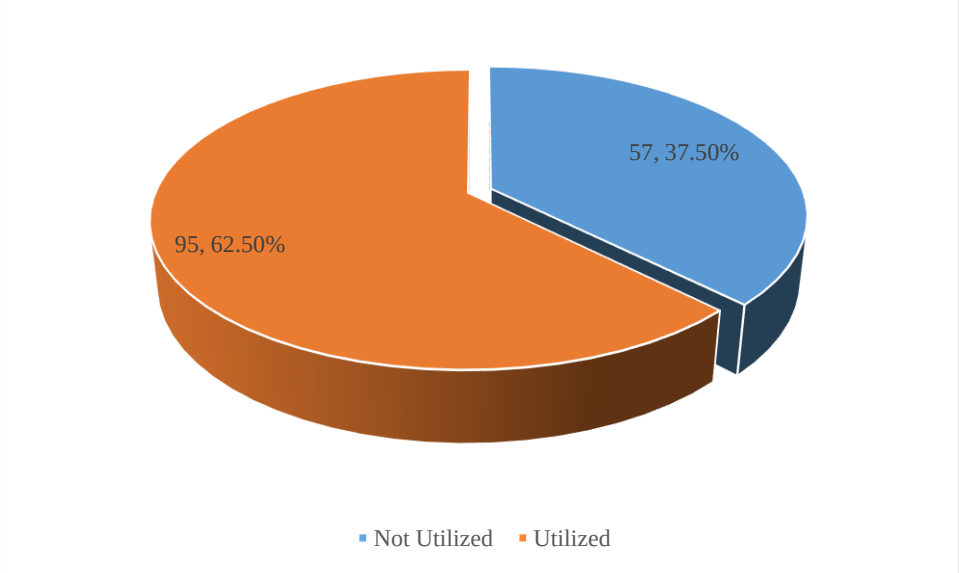

Figure 4.1 Utilization of Reflective Practice by nurses *working in the Critical Care Units at Kenyatta National Hospital*

4.4.1 Reflective process

The table below presents data on nurses' reflective process, focusing on their responses to four questions (Q 15, Q20, Q23 and Q26), each related to different aspects of reflective practice. Using Likert scale questions, the respondents were asked to depict their process of reflection during certain situations. Where: 0-Never, 1- Sometimes and 2- Always.

Whether the respondents reflected after interacting with patients or clients, they wrote notes which they reviewed, utilized research evidence during reflection or whether they engaged in evidence-based practice regarding reflective practice.

When it comes to reflecting on patient interactions, a majority of respondents 83 (54.6%) "Sometimes" did so, however, a minority 12 (7.9%) never reflected on patient interactions.

When it comes to maintaining reflective practice notes, respondents have a relatively even distribution in their practice. About 64(42.1%), "Never" write reflective notes and only 22 (14.5%) "Always" write reflective notes.

In terms of incorporating research evidence into their reflective practice, almost half of the respondents 74 (49.3%) "Sometimes" incorporated research evidence indicating a willingness to use scholarly knowledge in reflective practice. However, a smaller group 41 (27.3%) "Never" make use research evidence.

A large number of respondents 71(46.7%) actively sought discussions and educational opportunities, conferences or CMEs in reflective practice, indicating a strong commitment to staying informed in this area. However, 26 (17.1%) "Never" sought discussions and educational opportunities suggesting a potential gap in access to reflective education for some respondents.

Table 4.3 Reflection Process by nurses by nurses working in the Critical Care Units at Kenyatta National Hospital

	Reflection Process	Never	Sometimes	Always
Q15	After interacting with patients or clients I think about how things went during the interaction.	12(7.9)	83(54.6)	57(37.)
Q20	I write notes which I review for example diary, journal on reflective practice	64(42.1)	66(43.4)	22(14.)
Q23	I look or utilize research evidence in reflective practice.	41(27.3)	74(49.3)	35(23.)
Q26	I look for relevant discussion, conference or CME (Continuous medical education) on reflective practice.	26(17.1)	55(36.2)	71(46.)

4.4.2 Type of Reflective Model utilized during nursing practice (n=61)

Less than half of the respondents (40%) reported utilizing at least one type of reflective model in their practice. Among those, the Gibbs reflective cycle was the most frequently used, cited by 41 respondents (67.2%). Conversely, no respondents (0%) used the Freshwater reflective model. Across the eight sampled Cardiac Care Units (CCUs), the main CCU showed the highest utilization of a reflective model (16%), while the Pediatric Intensive Care Unit (PICU) and Neonatal Intensive Care Unit (NICU) had the lowest utilization, each with less than 1%.

Table 4.4: Reflection Model utilized by nurses working in the Critical Care Units at Kenyatta National Hospital during nursing practice

Model	Frequency	Percentage
Gibbs reflective cycle	41	27%
Kolb reflective cycle	7	4.6%
Rolfe reflective cycle	2	1.3%
Both Gibbs and Kolb reflective cycle	4	2.6%
Delolsen reflective cycle	2	1.3%
Freshwater model	0	0%
Schon reflective model	1	0.7%
Both Kolb & Rolfe	4	2.6%
Total #Utilised any of the above model	61	40%
Did not use any model	91	60%

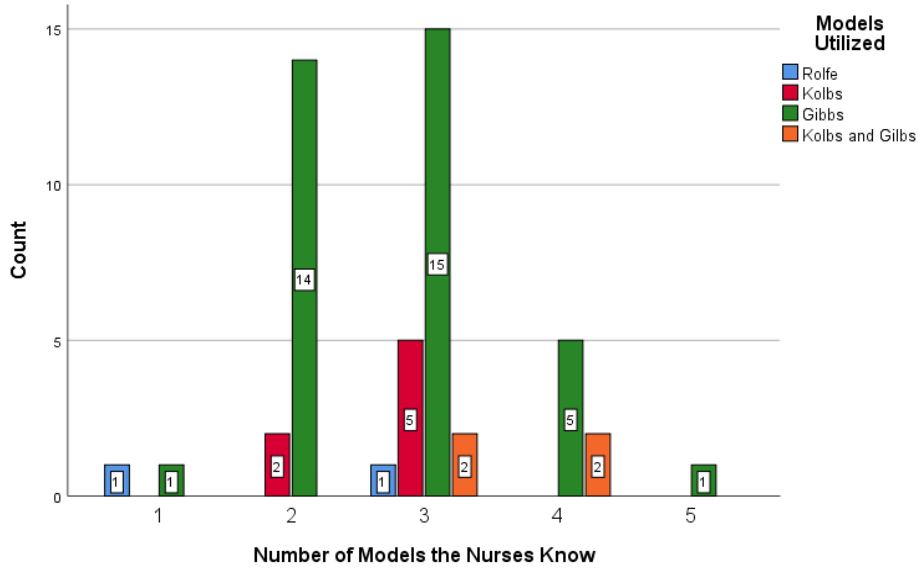

Figure 4.2 Number of Models of reflective practice Nurses Know and Models Utilized by nurses in Critical Care Units at Kenyatta National Hospital

Of the 138 participants surveyed, 89 (64.5%) indicated awareness of at least one reflective practice model, whereas only one respondent (0.7%) reported having no awareness of any model. Awareness levels differed across departments, with the Main CCU and PICU showing the highest proportions. Despite this relatively high awareness, only 61 respondents (40%) reported actively incorporating a reflective practice model into their nursing routines. Among those who used a model, Gibbs' Reflective Cycle was the most prevalent (67.2%), followed by Kolb's model (13%). Other models, including Rolfe, Delolsen, and Schön, were mentioned less frequently, and none of the respondents reported using the Freshwater model.

4.4.3 The number of times reflective practice had positively changed the nursing practice (n=141)

The researcher sought to determine the frequency with which reflective practice positively influenced changes in nurses' practice. Out of 141 respondents, 83 (59%) reported that the reflection process altered their nursing practice on more than three occasions.

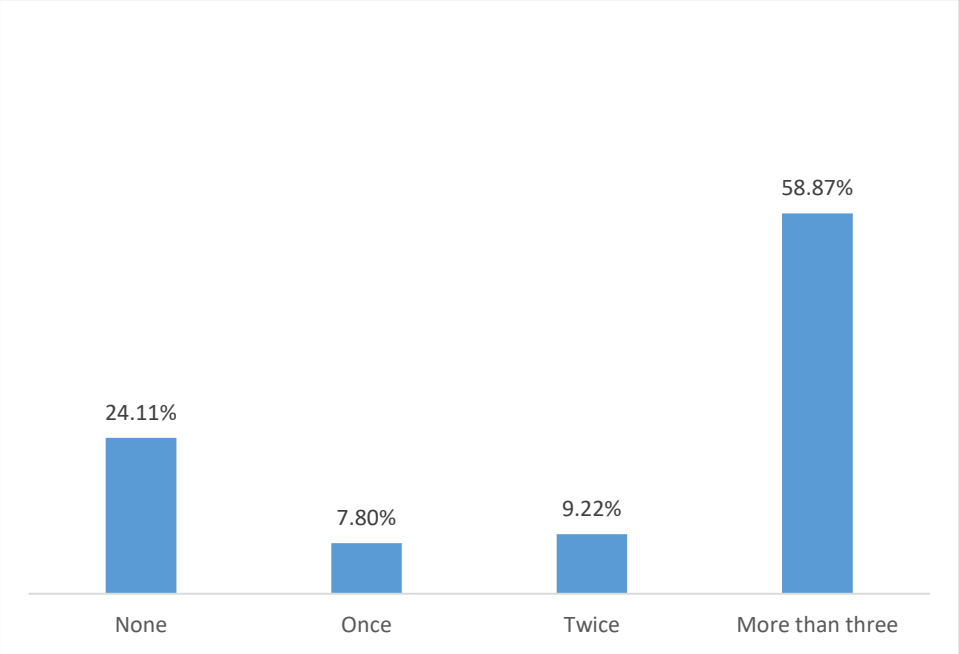

Figure 4.3 Number of Instance Reflective Practices had positively changed Nurses' Practice *of nurses working in the Critical Care Units at Kenyatta National Hospital*

4.5 Association between nurse characteristics and utilization of reflective practice by nurses working in the critical care units, Kenyatta National Hospital

The second objective of this analysis was to determine the association between nurse characteristics and utilization of reflective practice among nurses working in the critical care units at Kenyatta National Hospital.

Among the variables examined, one of the most noteworthy findings was the significance of "Level of education" and Utilization of reflective practice. Respondents with different educational backgrounds demonstrated varying rates of Utilization.

Notably, those with higher levels of education, such as BScN and MScN, exhibited a notably higher Utilization rate (78.3%) compared to those with lower educational qualifications. This underscores the importance of educational attainment in fostering reflective practice.

There was a significant association between the level of education and reflective practice utilization (Chi-Square = 16.174, p = 0.001). Nurses with higher education levels, such as BScN and MScN, showed a notably higher utilization rate compared to those with lower educational qualifications. Nurses who reported that reflective practice had changed their nursing practice exhibited a higher utilization rate (68.2%) compared to those who did not report such changes. This difference was statistically significant.

Additionally, two other variables emerged as statistically significant factors associated with reflective practice utilization. Firstly, respondents who reported that reflective practice had led to changes in their nursing practice exhibited a significantly higher utilization rate (68.2%) compared to those who did not report such changes. Secondly, formal training on reflective practice was strongly associated with increased utilization. Respondents who had received training displayed a markedly higher utilization rate (92.6%) compared to those who lacked such a training (47%), underscoring the role of structured education in fostering reflective practice.

The analysis revealed that gender does not appear to significantly influence the utilization of reflective practice among nurses (Chi-Square = 0.969, p = 0.325). Both male and female nurses demonstrated relatively similar levels of utilization. Nurse age groups exhibited varying levels of reflective practice utilization. Notably, nurses aged 50 years and above had a lower utilization rate (42.9%) compared to other age groups.

However, the chi-square test showed no statistically significant relationship between age and reflective practice utilization (Chi-Square = 6.365, p = 0.095).

The analysis found no significant relationship between the years of experience as a critical care unit (CCU) nurse and reflective practice utilization (Chi-Square = 5.04, p = 0.283). Utilization rates varied across different experience categories. The years of experience as a nurse, irrespective of the specialization in CCU, did not significantly impact reflective practice utilization (Chi-Square = 1.057, p = 0.787).

Designation of respondents, whether as a primary nurse or team leader, did not display a statistically significant relationship with reflective practice utilization (Chi-Square = 0.58, p = 0.81).Nurses who received training on reflective practice exhibited significantly higher utilization rates compared to those who did not receive such training (Chi-Square = 31.265, p < 0.0001).Nurses who had received formal training on reflective practice exhibited significantly higher utilization rates (92.6%) compared to those who had not received such training (47.0%).

Table 4.5 Association between nurse characteristics and utilization of reflective practice among nurses working in the Critical Care Units at Kenyatta National Hospital

Variables	Category	Practice of reflection		Chi-Square	P-Value
		Not Utilized	Utilized		
Gender	**Male**	17 (43.6)	22(56.4)	0.969	0.325
	Female	40 (34.8)	75(65.2)		
Age	**Below 30**	**5 (26.3)**	**14(73.7)**	**6.365**	**0.095**
	30-39 years	16 (34.8)	30(65.2)		
	40-49 years	20 (32.8)	41(67.2)		
	50 Years and above	16 (57.1)	12(42.9)		
Level of Education	**Diploma**	**5 (26.3)**	**14(73.7)**	**16.174**	**0.001**
	H.Dip in CCN	41 (51.9)	38(48.1)		
	BScN	10 (21.7)	36(78.3)		
	MScience	1 (10.0)	9(90.0)		
Experience as a CCU	**<=Two years**	5 (20.8)	19(79.2)	5.04	0.283
	Two to Five yrs	18 (45.0)	22(55.0)		
	Five to Ten	15 (36.6)	26(63.4)		
	Ten to twenty	15 (35.7)	27(64.3)		
	20+ Years	4 (57.1)	3(42.9)		
Experience as a Nurse	**<=Five years**	6 (31.6)	13(68.4)	1.057	0.787
	Five to Ten	17 (42.5)	23(57.5)		
	Ten to twenty	20 (33.9)	39(66.1)		
	20+ Years	14 (38.9)	22(61.1)		
Designation	**Primary**	49 (37.4)	82(62.6)	0.58	0.81
	Team Leader	8 (34.8)	15(65.2)		
Training on RP	**Yes**	**4 (7.4)**	**50(92.6)**	**31.265**	**<0.0001**
	No	53 (53.0)	47(47.0)		
Changed your Practice	**Yes**	**34 (31.8)**	**73(68.2)**	**4.571**	**0.033**
	No	23 (50.0)	23(50.0)		
Critical Thinking	**Yes**	38 (33.3)	76(66.7)	1.182	0.277
	No	14 (43.8)	18(56.3)		
Events	**Never**	6 (54.5)	5(45.5)	1.603	0.449
	Sometimes	22 (34.9)	41(65.1)		
	Always	27 (36.0)	48(64.0)		
Seek Feedback	**Never**	12 (54.5)	10(45.5)	3.411	0.182
	Sometimes	31 (36.0)	55(64.0)		
	Always	14 (31.8)	30(68.2)		
Negative Feelings	**Never**	30 (42.3)	41(57.7)	2.314	0.314
	Sometimes	20 (30.3)	46(69.7)		
	Always	6(42.9)	8(57.1)		
Empowered as a group	**Never**	31 (38.3)	50(61.7)	0.051	0.975
	Sometimes	20 (36.4)	35(63.6)		
	Always	6 (37.5)	10 (62.5)		

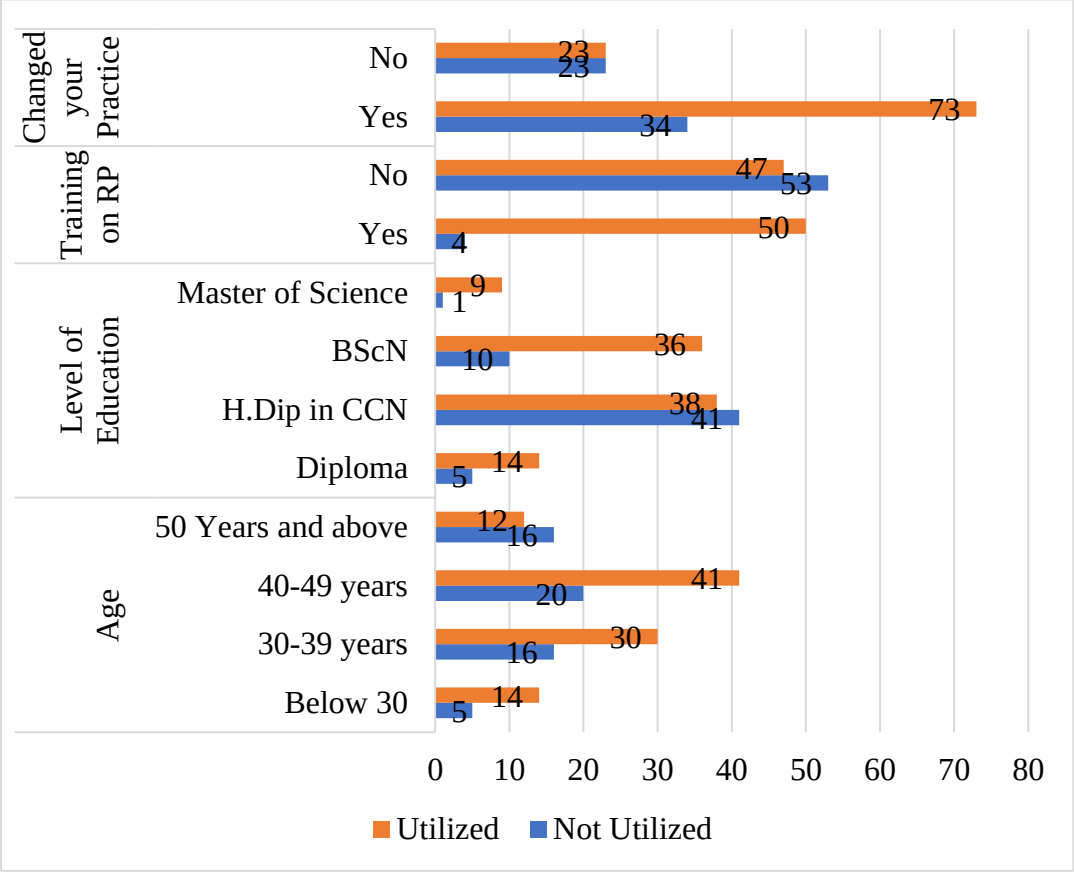

Figure 4.4 Variables associated with utilization of practice of Reflective Practice *by nurses working in the Critical Care Units at Kenyatta National Hospital*

4.6 Perception towards knowledge of reflective practice and utilization of reflective practice

The third objective of this study was to assess the perception of nurses towards reflective practice and how this perception relates to their actual utilization of reflective practice within the critical care units at Kenyatta National Hospital.

When asked about the number of reflective practice models they were familiar with, the results showed that a majority of the respondents (68.8%) reported awareness of one model, while 15.9% were aware of two models, and 19.6% knew three. Only a small proportion of respondents (5.8%) knew four models, and just one respondent (0.7%) reported knowing five models. Another one respondent (0.7%) indicated they were not familiar with any reflective practice model.

Further cross-tabulation of these results with utilization patterns revealed an increasing trend in the use of reflective practice with the number of models known. Among those familiar with only one model, 57.3% had not utilized reflective practice, while 42.7% had. This contrasts sharply with those who knew two models, where 95.5% had utilized reflective practice. All respondents who were aware of three models reported having used reflective practice in their work. Similarly, among those who knew four models, 88.9% had utilized it. This suggests a strong positive association between the breadth of knowledge about reflective models and actual engagement in reflective practice, indicating that greater awareness likely contributes to more consistent utilization.

Respondents were also asked to indicate specific situations in which reflective practice had influenced their clinical duties. Resuscitation and intubation emerged as the most common situations, cited by 22.7% of respondents. Nursing care-related tasks—including admissions, discharges, and suctioning—were mentioned by 7.8%, while family conferences, debriefing, and end-of-life care were indicated by 1.9%. A few respondents also noted infection prevention or management/personal life as areas impacted by reflection. Notably, 29.9% of respondents selected combined situations such as resuscitation and nursing care as key contexts where reflective practice played an important role.

The cross-tabulation between perceived influence and utilization of reflective practice highlighted some notable trends. For those who reported resuscitation as the main area of reflective influence, utilization was nearly balanced, with 51.4% having used reflective practice and 48.6% not using it. In comparison, among respondents who identified nursing care, admission, and suctioning as the area impacted by reflection, 68.8% reported having utilized reflective practice, while only 31.3% had not. This

utilization rate was even higher in contexts involving family conferences, death, debriefing, and end-of-life care, where 77.8% reported utilization and only 22.2% had not. Similarly, those who selected both resuscitation and nursing care together showed high engagement in reflection, with 70.5% using it and 29.5% not using it. These findings demonstrate that reflective practice is more frequently utilized in complex or emotionally charged clinical situations, where decision-making and patient outcomes may greatly benefit from thoughtful post-event analysis.

The study also assessed whether nurses felt that reflective practice had changed their professional behavior. Of those who reported that reflection had changed their practice (107 respondents), 68.2% were also users of reflective practice, while 31.8% were not. In contrast, among the 46 respondents who said that reflection had not changed their practice, an equal proportion (50%) reported using and not using reflective practice. This difference underscores how perceiving a personal benefit from reflective practice, such as improvement in care delivery or communication, may be a strong motivator for its continued use.

Lastly, participants were asked whether engaging in reflection had enhanced their knowledge and skill in critical thinking. A significant majority—114 respondents (74%)—stated that reflection had improved their critical thinking. Among these, 66.7% had utilized reflective practice, compared to 33.3% who had not. For those who did not perceive any improvement in critical thinking (32 respondents), a smaller proportion (56.3%) had used reflective practice, while 43.8% had not. Although these differences are more modest compared to the other variables, they still suggest that nurses who see reflection as a tool for personal intellectual growth are more inclined to practice it consistently.

Table 4.6 Specific situations in which reflective practice has influenced nurse's nursing practice in Critical Care Units at Kenyatta National Hospital

Situations	**Frequency**	**Percentage (%)**
1.Resuscitation	71	66.9%
2. Admission	3	2.8%
3.Nursing care	52	49.1%
4.Intubation	43	40.6%
5.Others, bereavement	8	7.6%

Table 4.7 Awareness and Perception towards Utilization of Reflective Practice by nurses working in the Critical Care Units at Kenyatta National Hospital

Variables	**Categories**	**Frequency**	**Percentage**
No of models (Aware)	0	1	0.7
	1	95	68.8
	2	22	15.9
	3	27	19.6
	4	8	5.8
	5	1	0.7
Situations where Reflective Practice has influenced practice* **	1	35	22.7
	2	12	7.8
	3	3	1.9
	5	1	0.6
	1,2	46	29.9
	1,3	4	2.6
	2,3	2	1.3
	2,4	1	0.6
	1,2,4	2	1.3
RP Changed your practice	Yes	107	69.5
	No	46	29.9
Critical thinking	Yes	114	74
	No	32	20.8

The numbers with commas are combinations of two or three of the above choices.

The key for Situations where Reflective Practice has influenced practice*** is

1. Resuscitation/intubation
2. Nursing care, admission, discharges, suctioning.
3. Family conference, death, debriefing, end of life care.
4. Management, personal life.
5. Infection prevention.

In summary, the cross-tabulation analysis reveals a clear pattern: nurses with broader knowledge of reflective practice models, those who associate reflective thinking with real-life clinical decision-making, and those who perceive tangible improvements in their practice and thinking, are much more likely to utilize reflective practice in their daily professional work. These findings emphasize the value of enhancing both awareness and perceived usefulness of reflection in critical care settings to promote deeper, consistent engagement.

Table 4.8 Cross-tabulation of Nurses Awareness and Perception towards Utilization of Reflective Practice by nurses working in the Critical Care Units at Kenyatta National Hospital

		Utilization	
Variable	**Categories**	**Not Utilized**	**Utilized**
Number of models known	1	55(57.30)	41(42.70)
	2	1(4.50)	21(95.50)
	3	0	27(100.0)
	4	1(11.10)	8(88.90)
Situations where Reflective Practice has influenced practice	resuscitation	17(48.60)	18(51.40)
	nursing care, admission, discharges,suctioning	5(31.30)	11(68.80)
	family conference, death,debriefing,end of life care	2(22.20)	7(77.80)
	resuscitation/intubation and nursing care	13(29.50)	31(70.50)
Changed your Practice	**Yes**	**34(31.8)**	**73(68.2)**
	No	23(50.0)	23(50.0)
Critical Thinking	Yes	38(33.3)	76(66.7)
	No	14(43.7)	18(56.3)

4.7 Relationship between Facility related factors and utilization of reflective practice by nurses working in the Critical Care Units at Kenyatta National Hospital

4.7.1 Facility Related Factors

To assess how institutional environments, shape reflective practice among critical care nurses, respondents were asked about the presence or absence of several facility-related

conditions. These included infrastructure, policies, management support, training opportunities, and workload.

Among the 152 respondents, a majority—134 (88.2%)—indicated that there was no designated place within their facility for engaging in reflective practice. Similarly, 116 nurses (76.3%) reported the absence of a hospital policy supporting reflective practice. Regarding management support, only 41 respondents (27.1%) felt sufficiently supported by management in practicing reflection, while 110 (72.9%) reported otherwise.

A substantial number of respondents—122 (80.8%)—stated that their institutions did not release them for training or mentorship related to reflective practice. Furthermore, 103 nurses (68.7%) indicated that workload interfered with their ability to engage in reflection. Finally, 70 respondents (46%) felt they were free of negative institutional influences, such as victimization, when engaging in reflection, while the remaining 54% did not feel that freedom.

Table 4.9 Facility Related Factors affecting utilization of reflective practice by nurses working in the Critical Care Units at Kenyatta National Hospital

Facility factor	**Questions on Facility related factors**	**YES (%)**	**NO (%)**
Infrastructure	I have a designated place where reflective practice occurs.	18(11.8)	134(88.2)
Policy	My institution has a policy supporting reflective practice.	36(23.7)	116(76.3)
Management support	I'm sufficiently supported by management to practice reflective practice at work.	41(27.1)	110(72.9)
Social support	I'm free of negative influences by others and institution about reflective practice for example victimization.	70(46)	82(54)
Training	My institution releases nurses to be trained or to be mentored on reflective practice.	29(19.2)	122(80.8)
Workload	My practice of reflective practice is affected by workload.	103(68.7)	47(31.1)

4.7.2 Association between Facility related factors and utilization of reflective practice by nurses

Cross-tabulation analysis was performed to examine the association between each facility-related factor and the utilization of reflective practice among nurses in the critical care units. Nurses who had a designated place for reflective practice exhibited a much higher utilization rate (93.7%) compared to those without such a space (58.8%). Only 6.3% of those with a designated place reported not utilizing reflective practice, while 41.2% of those without it had not engaged in it. This difference was statistically significant.

Similarly, in facilities where a policy supporting reflective practice was in place, 77.1% of the nurses reported utilizing reflective practice, as opposed to 58.1% in facilities lacking such a policy. This association also reached statistical significance, indicating

that institutional support in the form of policy frameworks may promote reflective behavior among nurses.

Freedom from victimization was another important factor. Among those who felt free from negative influences or punitive consequences when engaging in reflective practice, 71.8% had utilized reflective practice, in contrast to 54.3% among those who did not feel such freedom—again, a statistically significant difference. Management support was associated with increased utilization as well; 73.2% of those who reported feeling supported by their management used reflective practice, compared to 58.2% among those who did not feel supported. However, this relationship did not reach statistical significance.

With regard to training opportunities, 67.9% of respondents whose institutions allowed them to be trained or mentored in reflective practice had utilized it, compared to 60.7% of those without such institutional provisions. This difference was not statistically significant. Similarly, while 65% of those who felt their workload affected their ability to reflect still reported engaging in reflective practice—slightly higher than the 55.3% utilization among those who did not feel affected by workload—the difference was not statistically significant. Support from in-charge personnel also showed a positive trend, with utilization increasing alongside the frequency of perceived support: 71.8% among those who were “Always” supported, 63.5% among those “Sometimes” supported, and 51.3% among those who were “Never” supported. However, this trend too lacked statistical significance.

Lastly, perceptions of insecurity and fears of reflective practice being used for witch-hunting or punishment did not significantly influence utilization. Regardless of whether these concerns were reported as “Never”, “Sometimes”, or “Always” experienced,

utilization of reflective practice remained relatively consistent, ranging between 61.7% and 63.7%. These results suggest that while institutional policies, physical space, and a non-punitive environment strongly support reflective practice, other facility-related factors—though potentially influential—may require further exploration or supportive interventions to strengthen their impact.

Table 4.10 Association between Facility related factors and utilization of reflective practice by nurses

Variables	**Category**	**Reflective Practice**		**Total**	**Chi-Square**	**P-Value**
		Not Utilized	**Utilized**			
Designated Place	Yes	1(6.3)	15(93.7)	16	7.451	0.006
	No	56(41.2)	80(58.8)	136		
Policy Supporting RP	Yes	8(22.9)	27(77.1)	35	4.16	0.041
	No	49(41.9)	68(58.1)	117		
Support from Management	Yes	11(26.80	30(73.2)	41	2.856	0.091
	No	46(41.8)	64(58.2)	110		
Victimization free	Yes	20(28.2)	51(71.8)	71	4.949	0.026
	No	37(45.7)	44(54.3)	81		
Inst Training on RP	Yes	9(32.1)	19(67.9)	28	0.501	0.479
	No	48(39.3)	74(60.7)	122		
Workload affect	Yes	36(35.0)	67(65.0)	103	1.297	0.255
	No	21(44.7)	26(55.3)	47		
In-charge Supports RP	Never	19(48.7)	20(51.3)	39	3.564	0.168
	Sometimes	27(36.5)	47(63.5)	74		
	Always	11(28.2)	28(71.8)	39		
Insecurity	Never	31(38.3)	50(61.7)	81	0.051	0.975
	Sometimes	20(36.4)	35(63.6)	55		
	Always	6(37.5)	10(62.5)	16		
Witch Hunt	Never	33(36.3)	58(63.7)	91	0.362	0.835
	Sometimes	19(38.0)	31(62.0)	50		
	Always	5(45.5)	6(54.5)	11		

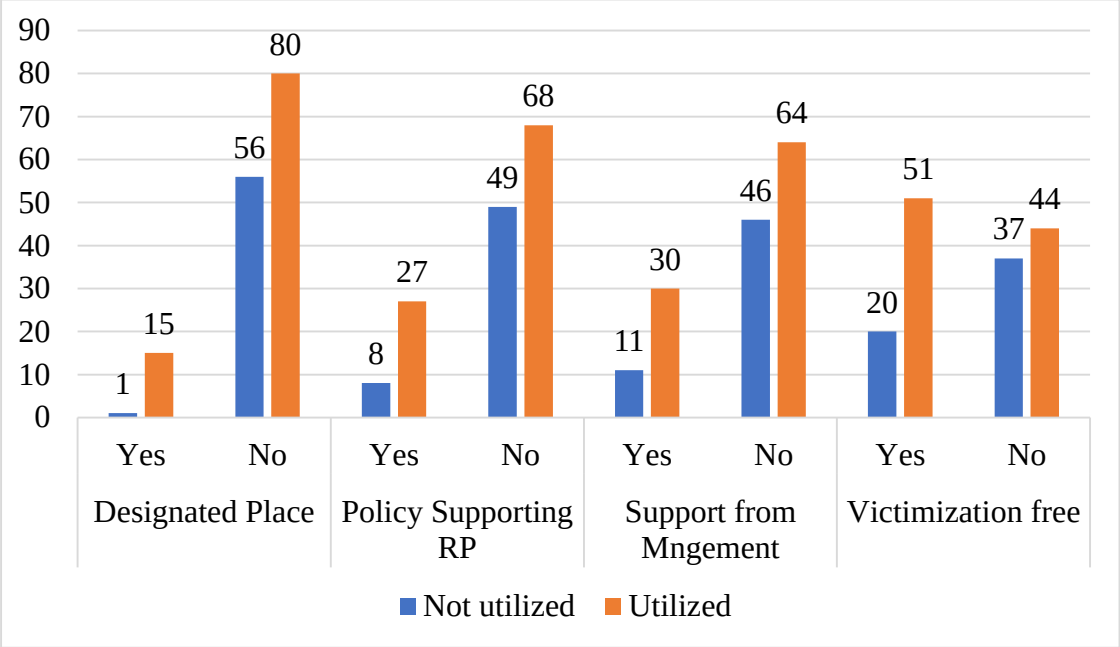

Figure 4.5 Facility based factors and Utilization of Reflective Practice by nurses working in the Critical Care Units at Kenyatta National Hospital

4.8 Regression Analysis of Factors Influencing Utilization of Reflective Practice Among Critical Care Nurses

A binary logistic regression analysis was conducted to determine the influence of selected demographic and facility-related variables on the utilization of reflective practice among nurses in the critical care units at Kenyatta National Hospital. The results are presented in terms of odds ratios (OR), confidence intervals (CI), and p-values, providing insight into the likelihood of reflective practice utilization across different categories.

In terms of age, nurses aged 30–39 years had higher odds (OR = 1.955) of utilizing reflective practice compared to those under 30, although this finding was not statistically significant (p = 0.419). Similarly, nurses aged 40–49 years (OR = 1.321, p = 0.731) and those aged 50 years and above (OR = 0.814, p = 0.817) did not exhibit statistically significant differences in utilization compared to the reference group.

Regarding educational level, no significant associations were observed. Nurses with a Higher Diploma in Critical Care Nursing had an odds ratio of 0.701 ($p = 0.619$), those with a Bachelor of Science in Nursing (BScN) had an OR of 1.149 ($p = 0.852$), and those with a Master of Science had an OR of 0.638 ($p = 0.647$), all compared to diploma holders.

Interestingly, nurses who reported that reflective practice had changed their nursing practice were more likely to utilize it, with an odds ratio of 2.123. This association was marginally significant ($p = 0.062$), indicating a potential relationship between perceived practice improvement and increased utilization of reflection.

Training on reflective practice, though important in other analyses, was not significantly associated with utilization in the regression model (OR = 0.898, $p = 0.802$). Likewise, having a policy supporting reflective practice (OR = 1.495, $p = 0.547$) and receiving management support (OR = 1.029, $p = 0.959$) did not significantly predict utilization.

The presence of a designated place for reflective practice stood out with high odds. Nurses with access to such a space were over six times more likely to utilize reflective practice compared to those without it (OR = 6.487). Although the p-value reported ($p = 0.95$) suggests it is not a significant factor.

Finally, the perception of being free from victimization or negative institutional influence was associated with higher odds of reflective practice utilization (OR = 1.968), with a marginally significant p-value ($p = 0.072$). This suggests that a psychologically safe environment may encourage more engagement in reflective behaviors among nurses.

In summary, while most demographic and institutional factors were not statistically significant in the regression model, the availability of a designated reflective space and the belief that reflective practice led to changes in clinical care emerged as key influences on utilization. These findings underscore the potential value of fostering enabling environments and promoting visible impact to strengthen the adoption of reflective practice in critical care settings.

Table 4.11 Logistic Regression Analysis of Factors Influencing Utilization of Reflective Practice by nurses

Variable		**Odds Ratio**	**CI for OR**		**P-value**
Age	**Below 30**	Ref			
	30-39 years	1.955	0.385	9.926	0.419
	40-49 years	1.321	0.269	6.48	0.731
	50+ Years	0.814	0.144	4.615	0.817
Level of Education	**Diploma**	Ref			
	H.Dip in CCN	0.701	0.172	2.848	0.619
	BScN	1.149	0.267	4.94	0.852
	MScience	0.638	0.093	4.367	0.647
Changed your Practice	**No**	Ref			
	Yes	2.123	0.962	4.684	0.062
Training on RP	**No**	Ref			
	Yes	0.898	0.388	2.081	0.802
Designated Place	**No**	Ref			
	Yes	6.487	0.723	58.223	0.95
Policy Supporting RP	**No**	Ref			
	Yes	1.495	0.404	5.527	0.547
Support from Management	**No**	Ref			
	Yes	1.029	0.348	3.047	0.959
Victimization free	**No**	Ref			
	Yes	1.968	0.941	4.116	0.072

CHAPTER FIVE: DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents a comprehensive discussion of the research findings, drawing connections between the results and existing literature. It then provides a concise conclusion that synthesizes the key discoveries of the study. Finally, based on these conclusions, practical recommendations for future practice and research are offered.

5.2 Discussion of the Study

The main objective of this research was to determine how Critical Care Nurses at Kenyatta National Hospital utilize Reflective Practice. The study involved interviewing 152 critical care nurses, and the questionnaire response rate was 98.7%.

5.2.1 Utilization of reflective practice by nurses working in the CCUs at KNH

The utilization of reflective practice among Critical Care Nurses (CCNs) at Kenyatta National Hospital (KNH) was investigated in this study, shedding light on various factors influencing its implementation and its impact on nursing practice. The findings provide valuable insights into the current state of reflective practice within the critical care setting and offer implications for nursing education, policy development, and professional development.

Previous research indicates that reflective practice aids in scrutinizing routine care activities, thereby preventing nurses from falling into patterns of assumption, ritualization, habituation, and routine ((Xu et al., 2024). Consequently, reflective practice is increasingly valued in nursing programs and strongly encouraged for the professional development of experienced nurses (Contreras et al., 2020). Despite this, empirical analysis regarding the utilization of reflective practice by critical care nurses

remains limited in existing literature. This study aimed to explore the core factors influencing the utilization of reflective practice skills within the critical care units at Kenyatta National Hospital in Kenya, thereby addressing this gap and potentially offering experiential support for future research and practical application in promoting nurses' professional development through reflective practice.

The study found a high level of reflective practice among critical care nurses at Kenyatta National Hospital, a finding consistent with Zarrin et al. (2023), who also reported high average reflection among nurses that correlated with increased confidence and job dedication. This contrasts sharply with studies from Egypt by Mohammedkhalil (2019), Mohamed & Taie (2024), and Amir et al. (2023), which indicated reflective practice was rarely used there, largely due to a lack of understanding of its meaning, benefits, and effective application skills, with Mohamed & Taie (2024) reporting 80.5% of nurses having unsatisfactory knowledge. The high level of reflection observed at KNH, particularly when contrasted with the Egyptian findings, suggests that these nurses likely possess a stronger conceptual understanding of reflection and more developed application skills, thereby allowing for more frequent engagement and fostering positive professional attributes, aligning with the observations of Zarrin et al. (2023).

The study found that the Gibbs Reflective Practice Model was commonly used by critical care nurses at Kenyatta National Hospital (KNH), indicating its relevance in this specialized setting. This finding partially aligns with Dhollande et al. (2025), who, while examining Gibbs' Cycle in nursing education, noted mixed student responses due to challenges like time commitment and stage confusion. The model's widespread use at KNH also aligns with Marshall et al.'s (2022) observation that reflective practice is

increasingly a mandatory professional obligation for qualified nurses. However, KNH's experience contrasts with Yu et al. (2019), who reported that many qualified nurses, struggle with reflective practice due to insufficient critical thinking and reflective skills. This suggests that KNH critical care nurses likely possess more developed critical thinking and reflective abilities, enabling effective navigation of Gibbs' complexities. Additionally, the KNH critical care environment might offer the time, resources, or supportive culture necessary to mitigate common implementation drawbacks, facilitating consistent application as nurses fulfill professional expectations for reflection.

Reflective practice, as evidenced by the high response rate and the preference for the Gibbs model among CCNs at KNH, appears to be widely embraced within the critical care context. This aligns with previous research highlighting the importance of reflective practice in nursing for enhancing critical thinking, improving clinical skills, and ultimately, enhancing patient care outcomes (Almomani et al., 2020; Marshall et al., 2022; Tawanwongsri & Phenwan, 2019).

5.2.2 Relationship between nurse characteristics and utilization of reflective practice by nurses working in the critical care units, Kenyatta National Hospital

The study's participants were predominantly female, consistent with Pamplio et al. (2020), but notably, age, gender, and years of experience did not significantly influence reflective practice utilization, aligning with Gabrielsson et al., Zarrin et al. (2022; 2023). This finding, however, contradicts Lee & Oh ,Cheng et al. (2020, 2020), who found that such demographics, along with educational attainment and job position, impacted nurses' reflection. The lack of demographic influence in this study suggests that within the critical care environment at Kenyatta National Hospital, reflective practice might

be uniformly embedded as a core professional expectation or coping mechanism, compelling all practitioners to engage irrespective of individual variations. This could differentiate it from settings where reflective practice is more discretionary, reinforcing the idea that environmental demands or a pervasive professional culture can drive reflective engagement more than individual demographic attributes.

This study revealed a significant positive association between higher education levels and greater utilization of reflective practice among Critical Care Nurses (CCNs). This finding aligns (Xu et al., 2024), demonstrated that among geriatric specialist nurses, socio-demographic characteristics such as age, educational attainment, professional title, years of work experience, monthly income, and the nature of employment played a significant role in influencing their reflective practice. Complementing this, Xue et al.'s (2023) study involving specialist nurses in eight tertiary hospitals in Tianjin similarly revealed that factors including years of experience, job title, position, highest qualification, nature of employment, and multidisciplinary team membership significantly impacted their reflective practice. Furthermore, Yurdanur (2016), found that postgraduate critical care certification enhanced critical thinking. The rationale for this association lies in the cumulative development of cognitive and analytical skills promoted by advanced learning, which is foundational to effective reflection. Moreover, Schumann Scheel et al. (2017), nurses develop advanced reflective abilities over 2 to 3 years of experience, suggesting that both formal education and extensive practical experience contribute to a richer basis for reflection. Kim et al. (2018) further noted that senior nurses with accumulated experience grasp reflective practice more effortlessly. Thus, nurses with more education and experience likely cultivate the necessary intellectual tools and practical wisdom to engage more readily and deeply in reflective practice. In alignment with this, Zarrin et al. (2023) concluded that most

demographic and work-related factors, including gender, marital status, education level, shift type, work experience, age, staffing levels, and nurse-to-patient ratio, did not impact a nurse's capacity for reflection, suggesting that reflective ability is largely independent of these personal characteristics. Furthermore, Huang, Chen, et al. (2023) observed a significant difference in reflective practice levels among specialist nurses based on marital status, noting that married nurses engaged in reflective practice 1.846 times more often than unmarried nurses. This suggests a possible connection between marital status, life experience, and a sense of responsibility influencing reflective engagement. The researchers proposed that increased family responsibilities and challenges faced by married nurse specialists might prompt greater self-reflection and a stronger drive for professional development.

5.2.3 Relationship between perception towards reflective practice and utilization of reflective practice among nurses working in the critical care units, Kenyatta National Hospital

The recent study found a statistically significant relationship between familiarity with various reflective practice models and increased utilization of reflective practice in nursing. Nurses knowledgeable about multiple models demonstrated higher engagement, aligning with Zhan et al. (2023) and Almomani et al. (2021). This positive association is likely because diverse model knowledge equips nurses with adaptable tools, allowing them to select or modify approaches based on specific situations or learning styles, thereby increasing perceived utility. It also fosters a deeper conceptual understanding of reflection, enhancing motivation. The contrast with studies like Tawanwongsri & Phenwan (2019) and Wachira (2021), which highlighted challenges with relying solely on the Gibbs model, suggests that knowing multiple methods

empowers nurses to overcome specific hurdles and consistently apply reflective practice to their professional development.

Perceptions of reflective practice vary widely across different critical care units. Contrasting with Mohamed and Taie (2024) found that 98% of nurses viewed it positively and as beneficial, Mohammedkhalil (2019) identified negative attitudes, cultural factors, and a lack of understanding as significant barriers in Egypt, leading to superficial engagement that hindered critical thinking. These contrasting findings likely stem from differences in educational emphasis, cultural context, and institutional support. Where reflective practice is well-integrated into nursing curricula and professional development, nurses may develop a clearer understanding of its value, fostering a professional culture that views it as a tool for growth. Conversely, inadequate teaching, support, or value, coupled with cultural factors, can lead to negative attitudes and superficial engagement, demonstrating that the prevailing educational and professional environment profoundly shapes nurses' perceptions and subsequent engagement with reflective practice.

This study revealed that knowledge of reflective practice positively influenced nursing practice in various CCUs, leading to its widespread integration, a finding consistent with Marshall et al. (2022) leading to increased adaptability in care delivery. This positive impact is likely due to enhanced critical thinking and familiarity with reflective practice, as suggested by Almomani et al. (2021). However, in contrast to Almomani et al. (2021), Marshall et al. (2022), and Khoshgoftar & Barkhordari-Sharifabad (2023), these studies found no direct relationship between the utilization of reflective practice and critical thinking.However, it did show that reflective practice led to practice transformation for nurses, aligning with Khalil & Abou Hashish (2022), but

contradicting Khoshgoftar & Barkhordari-Sharifabad (2023) on this point. These contrasting findings suggest that contextual factors or methodological nuances influence outcomes. The absence of a link to critical thinking might indicate that reflection in this setting was more descriptive than analytical, or that measurement tools lacked sensitivity. Conversely, practice transformation, even without overt critical thinking enhancement, could stem from increased self-awareness or direct identification of improvement areas. Discrepancies with other studies highlight the complexity of evaluating reflective practice outcomes across diverse clinical environments, possibly reflecting variations in reflective practice type, intervention duration, or specific practice setting.

5.2.4 Relationship between Facility related factors and utilization of reflective practice by nurses in the critical care units, Kenyatta National Hospital

This study identified significant barriers hindering the full implementation of reflective practice among Critical Care Nurses at Kenyatta National Hospital, including heavy workload, lack of policy support, inadequate training, and insufficient mentorship, consistent with previous research by Smith et al. (2018), Gustafsson et al. (2021), and Sherwood et al. (2018). These challenges underscore how facility-related and social environmental factors critically impact actual utilization, aligning with Pangh et al. (2019), who highlighted that absent stakeholder support, a tranquil environment, and positive relationships detrimentally affect implementation. The heavy workload limits time for reflection, while inadequate training and lack of policy/mentorship leave nurses without formal prioritization or guidance. These findings at KNH are consistent with a global pattern where practical, organizational, and relational factors significantly undermine successful reflective practice integration, irrespective of its perceived value.

Despite the acknowledged benefits of reflective practice, its implementation in critical care units faces persistent challenges. Restrictive measures often arise from a perception that reflection lacks validity as a knowledge source (Khalil & Abou Hashish, 2022), alongside insufficient resources and inadequate funding for training, as observed in a Canadian study (Smith et al., 2018). These findings indicate that practical and environmental barriers can hinder effective utilization even with supportive policies. The rationale for these issues stems from traditional, empirical views of knowledge, which may dismiss experiential learning and result in a lack of formal support for reflection. Furthermore, budgetary limitations for training mean nurses may lack the necessary tools and guidance, perpetuating the belief that reflection is impractical. Collectively, these factors underscore that institutional culture, resource allocation, and the philosophical understanding of knowledge are crucial in determining whether reflective practice is genuinely integrated or merely acknowledged in policy.

The study's findings highlighted significant physical and environmental constraints hindering reflective practice, with most respondents reporting a lack of designated space for reflection and a general non-prioritization of reflective practice within the physical infrastructure. These results support the work of Esther et al. (2015), who emphasized the critical need for supportive work environments and positive social conditions to facilitate such practices. Additionally, the study found that heavy workloads and time constraints significantly reduced opportunities for nurses to engage in reflection. To address these identified barriers, recommended strategies include implementing supportive policies, providing dedicated reflection spaces, and offering comprehensive training and mentorship, as suggested by Shin et al. (2023), Esther et al. (2015), and Dclinpsych (2021).

Therefore, in the future, nurses should be provided with the necessary support and training to help them understand and apply the concepts and methods of reflective practice. Additionally, a support network should be created so that nurses can communicate and share their experiences and confusion about reflective practice. It is also important to create a positive reflective culture where nurses feel safe and encouraged to openly reflect and discuss their performance.

5.3 Summary of the Study Findings

The research involved 152 critical care nurses and achieved an impressive 98.7% response rate. Over three-quarters of the participants were female, and nearly half were aged 40 or older. Most respondents worked as primary or bedside nurses, holding either a Diploma or a Higher Diploma, with a smaller proportion possessing a Master's degree. Regarding reflective practice training, the Main CCU recorded the highest proportion of nurses, with 75% of them having lacked such training. Despite this, it was observed that most respondents were familiar with at least one reflective practice model.

The study illuminated a correlation between specific nurse characteristics and their engagement in reflective practice within critical care environments. It indicated that factors such as educational background and training were associated with a greater inclination towards embracing reflective practice. Most participants demonstrated an understanding of and engagement with reflection and acknowledged its significance in nursing. They perceived it as instrumental in enhancing the quality, safety, and relevance of nursing care.

The Critical Care Nursing (CCN) community acknowledged the importance of reflection in enhancing critical thinking skills, particularly concerning nurses' primary care responsibilities. Reflective practice was found to be essential as it prevented the

stagnation of thoughts and routines among nurses, thereby ultimately reducing discrepancies in patient care delivery.

The study identified several deficiencies in supporting reflective practice within the facility. Key issues included an insufficient policy framework, a lack of specific space or room for reflective activities, inadequate management support, a lack of training and mentorship, and heavy workloads compounded by staff shortages. Participants reported a dearth of guidance and training, which hindered their ability to engage in reflective practice effectively. The challenges primarily arose from the demanding nature of intensive care unit environments, leaving little time for reflection amidst caring for critically ill patients.

5.4 Conclusion

The study underscored the vital role of reflective practice as a cornerstone for nurses, highlighting its significance in bridging the gap between theoretical knowledge and practical application. By incorporating reflective practice into their daily routines, nurses could enhance their professional development and improve patient care outcomes. The study revealed that: the majority of nurses utilized reflective practice; age and gender did not influence utilization of reflective practice but education and training influenced utilization of reflective practice; most nurses were aware of one model of reflection and utilized at least one model of reflective practice; familiarity with various reflective models increased utilization of reflective practice in nursing and a lack of policy and institutional support affected the utilization of reflective practice. Ultimately, reflective practice was found to be a vital component of professional nursing.

In conclusion, by emphasizing reflective practice and prioritizing practical experience over theoretical knowledge, the nursing profession cultivated a lifelong understanding firmly rooted in hands-on practice. This approach improved nurses' clinical skills, encouraged ongoing learning and professional development, and ultimately led to better patient care outcomes

5.5 Recommendations

The discussion of the study on the utilization of reflective practice among Critical Care Nurses at Kenyatta National Hospital is quite comprehensive and provides valuable insights into the factors influencing reflective practice and its impact on nursing care delivery. Here are some key points and potential suggestions:

Utilization of Reflective Practice Models: The study found that Gibbs model was the most popular choice among nurses for reflective practice. However, it is essential to recognize that different models may suit different individuals or contexts better. Offering training on various reflective practice models and encouraging nurses to explore different approaches could enhance their reflective abilities.

Relationship between Nurse Characteristics and Utilization of Reflective Practice: The study revealed a significant relationship between higher levels of education and greater utilization of reflective practice. This suggests the importance of integrating reflective practice into nursing education curricula and continuing education programs. Additionally, efforts should be made to ensure that nurses' at all educational levels receive training in reflective practice.

Facility-Related Factors: Lack of policy framework and support for reflective practice within the hospital was identified as a significant barrier. Establishing policies that

encourage and promote reflective practice, providing designated spaces for reflection, and offering training and mentorship programs can help address this issue.

Workload and Time Constraints: Heavy workloads were reported as obstacles to engaging in reflective practice. To address this challenge, healthcare organizations should prioritize workload management, ensure appropriate staffing levels, and create supportive environments that allow nurses to allocate time for reflection.

Professional Development and Patient Care Outcomes: Reflective practice was found to be essential for professional development and improving patient care outcomes. Integrating reflective practice into daily routines, patient records, and ongoing professional development initiatives can help nurses enhance their skills and effectiveness in providing patient care.

Recommendations:

The study recommends the implementation of training programs in reflective practice models, tailored specifically to the context and needs of Kenyatta National Hospital (KNH).

The study recommends allocating protected time for nurses to engage in reflective practice during their shifts, ensuring it is integrated into routine clinical schedules without compromising patient care.

The study recommends incorporating technology, such as mobile applications for journaling or guided reflection, to support and enhance reflective practice among nurses in a user-friendly and accessible manner.

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APPENDICES

Appendix I: Consent Form

My name is **Lillian Nyanduko Samoita,** a Masters science in Nursing (Critical care) student at Kenyatta University. The title of my research is **Utilization of reflective practice among nurses working in the critical care units at Kenyatta National Hospital**. The data from my research will increase awareness on utilization of reflective practice among nurses working in the critical care units. This information will assist the management of KNH to develop a hospital policy, culture and systems in support of reflective practice therefore impacting patient outcomes and nursing practice.

Procedure to be followed

Those who agree to participate will be provided with a structured questionnaire that they are required to read and fill within 15 -30 minutes.

Voluntarism

You have the right to participate in this study or not. If you agree to participate in this study, you will be given a questionnaire to fill in after you have signed the consent form. Participation in the study is voluntary, and you have the right to withdraw from the study even after signing the consent form. Your relationship with the researcher will not be affected upon withdrawal from participating in the study.

Discomforts and risk

If you find difficulties or hardships or feel uncomfortable responding to the questions, feel free to ask and if still not, comfortable you can skip the question. There is not anticipated risk to those who agree to participate.

Benefits

Your participation in the study will enable you better understand how gender, age, marital status, level of education, years of experience and job designation influences the practice of reflection, how reflective practice can be implemented into nursing care activities for better patient care. These measures will translate to improvement in the quality of care provided to patients and personal and professional growth of nurses.

Reward

There will be no compensation for participating in the study.

Confidentiality

You are not required to write your name on the questionnaire. The filled questionnaires will be kept under lock and key in a safe cabinet. All information collected will be privately kept and only shared with the study team. Upon publication the findings cannot be traced to you as an individual.

Participants' statement.

The information and explanation above regarding my participation in the study is clear to me. I have been given a chance to ask questions and my concerns have been addressed to my satisfaction. My participation in this study is entirely voluntary. I understand that my name will be not be written in the questionnaire, and no one including the researcher can trace the information provided in the questionnaire and link it to me. I have also understood that I can exit the study anytime and leaving will not affect my relationship with the researcher.

Participant signature …… Date…….

Name of representative or witness (where necessary) ……... Relationship to subject……

Investigator statement

I, the undersigned, certify that I have explained to the volunteer in a language she or he understands. I have also discussed with the above participant the risks and benefits involved.

Name of the researcher……Signature……. Date……

Contact information

If you have any concerns about the study, the researcher: **LILLIAN SAMOITA** Telephone number 0728844625oremail.lilliansamoita@gmail.com. Or**LUCY WANKURU MENGANYI**Telephone number 0721419297 or email wankuru.lucy@ku.ac.ke. Or **GRACE WANGECHIGACHUIRI**Telephone number 0722980352 email Gachuiri.grace@ku.ac.ke,

as well as Kenyatta University Ethics Review Committee. Secretary or chairman kuere@ku.ac.ke, Secretary.Kuerc@ku.ac.ke. P.O BOX 43844-00100, NAIROBI.

Appendix II: Research Instrument

TITLE: UTILIZATION OF REFLECTIVE PRACTICE BY NURSES WORKING IN THE CRITICAL CARE UNITS AT KENYATTA NATIONAL HOSPITAL.

QUESTIONNAIRE NUMBER: _____

CRITICAL CARE UNIT: ----------

SECTION A: NURSE CHARACTERISTICS

SOCIAL DEMOGRAPHIC FACTORS

Instructions: Tick the appropriate answer in the box provided or indicated the correct answer in the space provided

1. Gender.

a) Male [ ]

B) Female [ ]

2. What is your age in years? _____

3. What is your level of education? ----------

a) Diploma [ ]

b) Higher Diploma in Critical Care Nursing [ ]

C) BscN [ ]

d) Masters of Science in Nursing (Critical Care) [ ]

e) Any other Masters (Specify) _____

4. How many years have you worked in the critical care unit? _____

5. How many years have you practiced as a nurse? _____

6. What is your designation?

a) Primary nurse/ Bedside Nurse [ ]

b) Team Leader [ ]

c) Overall Unit In charge [ ]

7. Have you been trained on reflective practice?

a) Yes [ ]

b) No [ ]

KNOWLEDGE OF REFLECTIVE PRACTICE

8. How many models of reflective practice do you know? Eg Gibbs reflective cycle, Kolb reflective cycle, Schon Model (1991), Rolfe, Fresh water, What model (2001)

a) 0 [ ]

b) 1 [ ]

c) 2 [ ]

d) 3 [ ]

e) 4 [ ]

PRACTICE OF UTILIZATION OF REFLECTION

9. If any in question 8, which ones do you utilize in your practice during reflection sessions?

_____
_____
_____

10. Has reflective practice changed your practice as a nurse?

a) Yes [ ]

b) No [ ]

11. If, yes in question 10, in how many instances has reflection changed your practice?

a) None [ ]

b) Once [ ]

c) Twice [ ]

d) More than three [ ]

12. If Yes above how? In which cases has reflection been of importance to you?

During

a) resuscitation

b) admission

c) nursing care

d) intubation

PERCEPTION OF KNOWLEDGE OF REFLECTIVE PRACTICE

13. I have increased knowledge in critical thinking as a result of engaging in reflection?

    a) Yes [ ]

    b) No [ ]

SECTION B: NURSES PRACTICE OF REFLECTION

The questions in the table below depict situations which occur during the practice of reflective practice. Using the three-point Likert Scale of 0-2 as shown, tick against each situation how often you utilize reflective practice in care. Where, Zero is the lowest score in the choices and Two the highest score.

0- Never.

1- Sometimes.

2- Always.

Tick the response appropriate to your practice of reflection.

	Questions on the process of Reflection	**Never,**	**Sometimes**	**Always**
14.	How many times in a month do you hold reflective practice sessions?			
15.	After interacting with patients or clients I think about how things went during the interaction.			
16.	When reflecting with others about my work I develop new perspectives and insights.			
17.	I make decisions about events as they happen			
18.	I find that reflecting with others about my work helps me work out problems I might be having and I become aware of issues I had not considered			
19.	I don't experience difficulties when sharing information during reflective practice sessions.			
20.	I write notes which I review for example diary, journal on reflective practice.			
21.	My nurse officer in charge of the CCU fully supports reflection at work.			
22.	I seek feedback from colleagues and others about events or issues.			
23.	I look or utilize research evidence in reflective practice.			
24.	After engaging in refection, I develop negative feelings, emotions and anger which affect me.			
25.	My relationship with colleagues and management affects my practice of reflection.			
26.	I look for relevant discussion, conference or CME (continuous medical education) on reflective practice.			
27.	When engaging in reflection as a group I become more empowered than when I reflect alone.			
28.	The presence of CCU in charge during reflective practice sessions brings feelings of insecurity.			
29.	Reflective practice sessions are used as a forum for witch hunting or punishment.			

SECTION C. FACILITY RELATED FACTORS ASSOCIATED WITH UTILIZATION OF REFLECTIVE PRACTICE

The questions in the table below depict facility related factors associated with utilization of reflective practice. Using the two-point Likert Scale of 1-2 as shown, tick against each situation where one is the lowest score in the choices and two the highest score

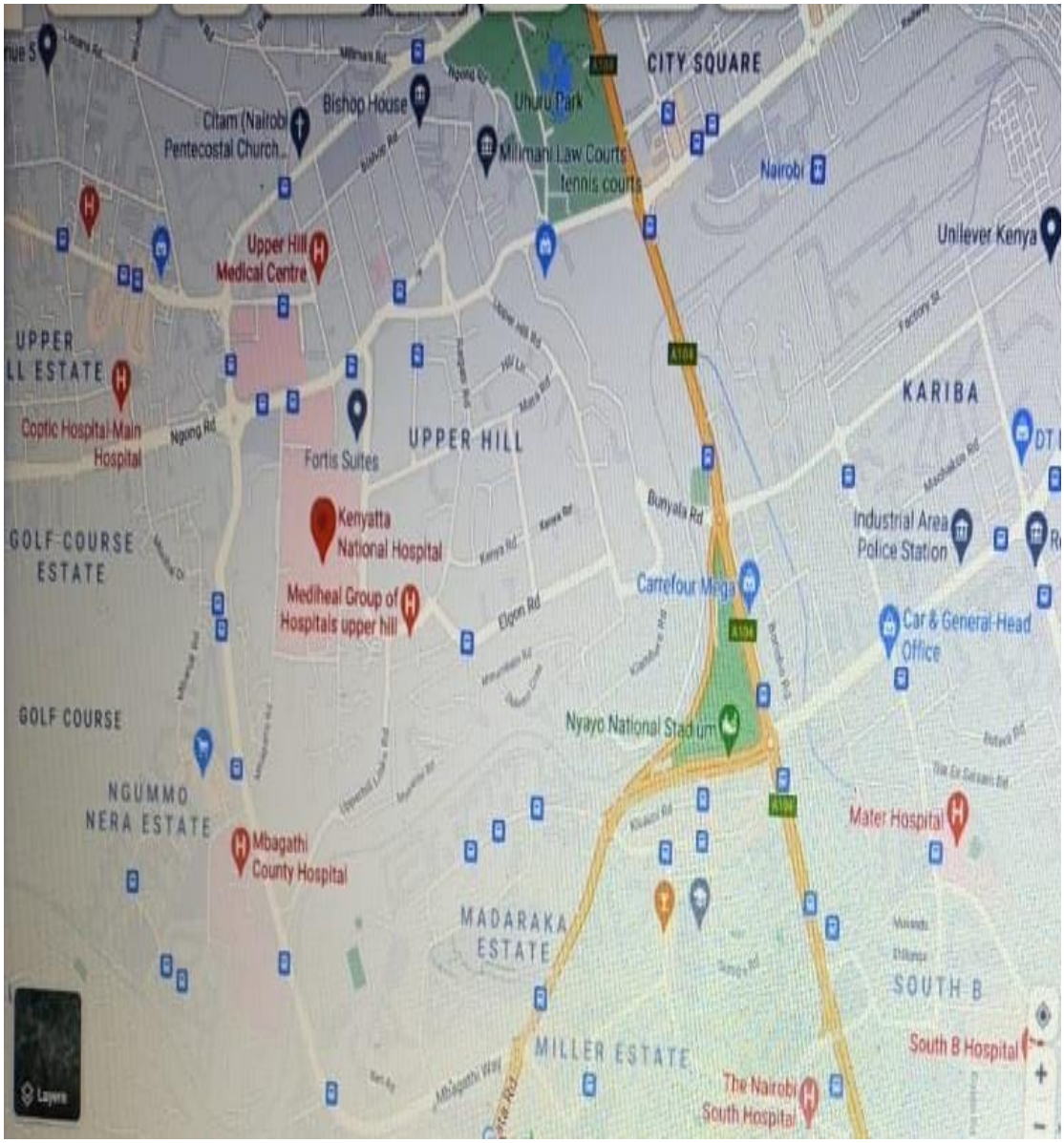
1-No

2-Yes

Tick the response appropriate to on questions regarding facility related factors affecting utilization of reflective practice

	Questions on Facility related factors	**YES**	**NO**
30.	I have a designated place where reflective practice occurs.		
31.	My institution has a policy supporting reflective practice.		
32.	I'm sufficiently supported by management to practice reflective practice at work.		
33.	I'm free of negative influences by others and institution about reflective practice for example victimization.		
34.	My institution releases nurses to be trained or to be mentored on reflective practice.		
35.	My practice of reflective practice is affected by workload.		

Appendix III: Map



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: R50/27003/2019

DATE: 31st August, 2021

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MS. LILLIAN NYANDUKO SAMOITA – REG. NO. R50/27003/19

I write to introduce Ms. Lillian Nyanduko Samoita who is a Postgraduate Student of this University. She is registered for M.Sc. degree programme in the **Department of Medical Surgical Nursing & Pre-Clinical Science.**

Ms. Samoita intends to conduct research for a M.Sc. thesis Proposal entitled, **"Utilization of Reflective Practice by Nurses Working in the Critical Care Units at Kenyatta National Hospital."**

Any assistance given will be highly appreciated.

Yours faithfully,

PROF. ELISHIBA KIMANI
DEAN, GRADUATE SCHOOL

KENYATTA UNIVERSITY OFFICE OF DEAN 28 SEP 2021 GRADUATE SCHOOL P.O. BOX 43844-00100 NAIROBI

Appendix v: Research Authorization

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: R50/27003/2019

DATE: 31st August, 2021

Director General,
National Commission for Science, Technology
and Innovation
P.O. Box 30623-00100
NAIROBI

Dear Sir/Madam,

RE: RESEARCH AUTHORIZATION FOR MS. LILLIAN NYANDUKO SAMOITA – REG. NO. R50/27003/19

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Ms. Samoita intends to conduct research for a M.Sc. thesis Proposal entitled, **"Utilization of Reflective Practice by Nurses Working in the Critical Care Units at Kenyatta National Hospital."**

Any assistance given will be highly appreciated.

Yours faithfully,

PROF. ELISHIBA KIMANI
DEAN, GRADUATE SCHOOL

KENYATTA UNIVERSITY
OFFICE OF DEAN
28 SEP 2021
GRADUATE SCHOOL
P.O. BOX 43844-00100 NAIROBI

Appendix vi: Nacosti Permit

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **861965**

Date of Issue: **06/December/2021**

RESEARCH LICENSE

This is to Certify that Miss.. lillian nyanduko samoita of Kenyatta University, has been licensed to conduct research in Nairobi on the topic: UTILIZATION OF REFLECTIVE PRACTICE BY NURSES WORKING IN THE CRITICAL CARE UNITS KENYATTA NATIONAL HOSPITAL. for the period ending : 06/December/2022.

License No: **NACOSTI/P/21/14696**

861965

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.

Appendix vii: Kenyatta University Ethics committee letter

KENYATTA UNIVERSITY
CENTRE FOR RESEARCH ETHICS AND SAFETY

Fax: 8711242/8711575
Email: chairman.kuerc@ku.ac.ke
Nairobi, 00100

P. O. Box 43844,

Tel: 8710901/12

Website: www.ku.ac.ke
Our Ref: **KU/ERC/APPROVAL/VOL.1**

Date: 12th /11/2021

Lilian N.Samoita
P.O BOX 43844-00100
Nairobi.

Dear Madam,

RE: UTILIZATION OF REFLECTIVE PRACTICE BY NURSES WORKING IN THE CRITICAL CARE UNITS AT KENYATTA NATIONAL HOSPITAL

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/2386/I1523.** The approval period is **12th /11/2021**

to 12th/11/2022.

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 viii: Nairobi University Ethics committee letter

UNIVERSITY OF NAIROBI
FACULTY OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
Tel:(254-020) 2726300 Ext 44355

KNH-UON ERC
Email: uonknh_erc@uonbi.ac.ke
Website: http://www.erc.uonbi.ac.ke
Facebook: https://www.facebook.com/uonknh.erc
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC

KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/A/82

7th March, 2022

Lillian Nyanduko Samoita
Reg.No.R50/27003/2019
Dept. of Medical Surgical & Pre-Clinical Sciences
School of Nursing Science
Kenyatta University

07 MAR 2022

Dear Samoita,

RESEARCH PROPOSAL: UTILIZATION OF REFLECTIVE PRACTICE BY NURSES WORKING IN THE CRITICAL CARE UNITS AT KENYATTA NATIONAL HOSPITAL (P788/09/2021)

This is to inform you that KNH-UoN ERC has reviewed and approved your above research proposal. Your application approval number is **P788/09/2021.** The approval period is 7th March 2022 – 6th March 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 KNH-UoN 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 KNH-UoN ERC 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 KNH-UoN ERC 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 KNH-UoN ERC.

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.

Yours sincerely,

DR. BEATRICE K.M. AMUGUNE
SECRETARY, KNH-UoN ERC

c.c. The Dean, Faculty of Health Sciences, UoN
The Senior Director, CS, KNH
The Chairperson, KNH- UoN ERC
The Chair, Dept. of Medical Surgical & pre-Clinical Sciences, Kenyatta University
Supervisors: Ms. Lucy Men'ganyi, Dept. of Medical Surgical & Pre-Clinical Science, Kenyatta University
Ms. Grace Wangechi Gachuiri, Dept. of Medical Surgical & Pre-Clinical Science, Kenyatta University