

**IMPLEMENTATION OF DIPLOMA NURSE-TRAINING CURRICULUM IN
SELECTED NURSE TRAINING INSTITUTIONS IN SOUTH- RIFT REGION,
KENYA**

BY

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**A THESIS SUBMITTED TO SCHOOL OF MEDICINE, IN PARTIAL
FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF THE
DEGREE OF DOCTOR OF PHILOSOPHY IN MEDICAL
EDUCATION, MOI UNIVERSIT**

DECLARATION

Declaration by Candidate

This proposal is my original work and has not been presented for a degree at any other university. No part of this work may be reproduced without the prior written permission of the author and or Moi University.

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DEDICATION

I dedicate this work to my wife Anne, daughters Faith and Mercy, and my son Ezra for their unwavering support and patience as I pursued my PhD.

ABSTRACT

Background: Graduates of the Kenya Registered Community Health Nursing (KRCHN) diploma program are vital to the frontline healthcare workforce, delivering important services in various clinical settings. Successful implementation of the KRCHN diploma curriculum requires adequate resources, trained educators, supportive clinical placements, and technology integration to develop skilled nurses. However, concerns exist about the gap between theory and practice, questioning the readiness of newly qualified nurses to provide quality care. There is also limited research on the implementation of the diploma nurse training curriculum in Kenya.

Objectives: The study aimed to evaluate the implementation of the diploma nurse training curriculum in selected nurse-training institutions. Specific objectives were to assess the adequacy of teaching resources, nurse educators' level of preparedness, the capacity of clinical placement sites for developing students' clinical skills, and the integration of emerging healthcare trends and technologies into the curriculum.

Methods:

This study was based on John Dewey's experiential learning theory, highlighting the value of hands-on experiences. A mixed-methods approach employed a descriptive cross-sectional design in selected nurse training institutions in the South-Rift region. The study included 159 senior nursing students selected through random sampling, along with purposively selected nurse educators, principals, and nurse managers. Data collection utilized questionnaires, Key Informant Interviews, and Focus Group Discussions. Quantitative data was analyzed with descriptive and inferential statistics, while qualitative data was thematically analyzed. Findings were presented in tables and narrative form.

Results: Educators and students rated classroom resources as most inadequate ($M=3.77$, $SD=1.06$) and ($M=3.95$, $SD=0.43$), but differed on the lowest adequacy, with library resources and simulation equipment, respectively. Students' concern was the adequacy of simulation equipment ($M=3.50$, with the highest $SD=1.43$). Students rated educators' preparedness highest for effective teaching methodologies ($M=4.18$, $SD=1.06$), use of practical examples ($M=4.00$, $SD=1.09$), and timely feedback ($M=3.97$, $SD=1.25$). Mentorship and guidance received lower ratings ($M=3.55$, $SD=1.13$). Educators rated integrating practical case studies into their teaching ($M=4.56$, $SD=0.50$), evidence-based methodologies ($M=4.27$, $SD=0.65$), and continuous professional development ($M=4.25$, $SD=0.57$) highly. Concerns were noted regarding institutional support for development ($M=3.88$, $SD=0.86$). Nurse managers noted knowledge gaps among some educators, especially when guiding students in areas outside their specialty. Students rated the adequacy of exposure to real patient care low ($M=3.71$, $SD=1.13821$) and supervision effectiveness ($M=3.79$, $SD=1.37502$). Educators also reported insufficient clinical exposure ($M=3.79$, $SD=0.63$). Nurse managers highlighted challenges with high student-to-instructor and student-to-patient ratios that affected clinical learning. Students rated use of technology-enhanced learning tools like simulators ($M=3.8$, $SD=0.94$), while educators rated (3.59 , $SD=0.62$), suggesting moderate and low utilization of digital learning methods, respectively. Nurse managers noted that students lacked adequate exposure to emerging healthcare technologies.

Conclusion: The successful implementation of the diploma nurse-training curriculum relies on adequate teaching resources, nurse educators' preparedness, a supportive clinical environment, and adaptability to emerging technologies. However, resource shortages, inadequately prepared educators, and the deficiency in the capacity of clinical sites hinder optimal curriculum implementation.

Recommendations: The Nursing Council of Kenya should ensure training institutions and clinical sites uphold standards for training safe, competent nurses. Institutions must invest in teaching resources, support educator development, utilize digital learning tools, and adhere to guidelines for student-to-instructor ratios. Further research on the relationship between students' self-efficacy and curriculum implementation is also recommended.

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LIST OF ABBREVIATIONS AND ACRONYMS

Complete is the world's most comprehensive **nursing & allied health research**

database Competency Based Education

CBE Competency Based Education

CINAHL Complete is the world's most comprehensive nursing & allied health research database

EbscoHost *EBSCO* is the leading provider of research databases, e-journals, magazine subscriptions, ebooks and discovery service for academic libraries

FGD Focus Group Discussion

HR Human Resource

IPE Interprofessional Education

IREC Institutional Research and Ethics Committee

KII Key Informant Interview

KMTC Kenya Medical Training College

KRCHN Kenya Registered Community Health Nurse

MOH Ministry of Health

NACOSTI National Commission for Science, Technology and Innovation

NCK Nursing Council of Kenya

Nvivo Qualitative data analysis software package.

SBMHS School Based Mental Health Services

SPSS IBM statistics

UDL Universal Design for Learning

TVET Technical Vocational Education and Training

WHO World Health Organization

OPERATIONAL DEFINITION OF TERMS

Kenya Registered Community Health Nursing (KRCHN) Curriculum	Refers to a structured educational program designed to train and equip nursing students with the theoretical knowledge, practical skills, and clinical competencies required for professional nursing practice in Kenya. It is regulated by the Nursing Council of Kenya (NCK) and includes both classroom-based instruction and clinical training.
Implementation of KRCHN Curriculum	Is the process of executing the prescribed nursing education framework in training institutions, ensuring that teaching methodologies, resources, nurse educators competencies, and clinical training align with regulatory standards and healthcare demands
Teaching Resources	Refers to the physical, instructional, and technological materials used in delivering the KRCHN curriculum, including lecture halls, laboratory equipment, simulation models, textbooks, e-learning platforms, and clinical training facilities. Adequacy of these resources determines the effectiveness of curriculum delivery
Nursing Educator preparedness	Refers to the extent to which nurse educators and nurse managers possess the necessary knowledge, clinical expertise, pedagogical skills, and practical experience required to effectively facilitate the implementation of the

KRCHN curriculum. This includes their ability to mentor students, apply evidence-based teaching strategies, integrate emerging healthcare trends and technologies, and support student learning in both classroom and clinical settings.

Capacity of Clinical Placement Sites	Miultidimensinal framework including availability of qualified staff, physical and operation infrastructure of the health care facility and the quality of the learning environment
Emerging Healthcare Trends and Technologies	Refers to the latest advancements influencing nursing education and healthcare practice, such as telemedicine, digital health records, artificial intelligence in healthcare, advanced nursing procedures, and evidence-based practice. Their integration into the curriculum enhances student preparedness for modern healthcare challenges

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CHAPTER ONE

1.0 Introduction

This chapter introduces the background of the study, states the problem, outlines the objectives, poses the research questions, and justifies the significance of the study.

1.1 Background

Curriculum implementation refers to the process of putting a curriculum into Practice (Kenya Medical Training College Curriculum Policy, 2019). It also involves how the educator translates planned or designed courses into syllabi, Schemes of work, and lessons to be delivered (Bediako, 2019). Having a curriculum implementation plan is crucial in providing learners with content that is suitable and relevant, taking into account their environment to make learning more tangible. Additionally, the curriculum should address the needs of both the learners and society as a whole (Abraham, 2016).

Nurses and midwives are the backbone of health care systems accounting for nearly 59% of the health workforce globally, they play a fundamental role in improving healthcare systems efficacy and efficiency (WHO, 2020). As frontline healthcare professionals, nurses and midwives respond to the health needs of people across all settings; consequently, they remain a vital resource for achieving global health goals (Bakibinga, 2020).

Health care in the United States is significantly impacted by a high rate of avoidable errors, with medical errors ranked as the third leading cause of death in the country. The financial cost of these errors to the nation's economy is estimated to range from \$17 to \$50 billion annually, which is comparable to the combined yearly cost of preventable errors in 30 European countries. Nurses play a crucial role in providing, monitoring, and managing patient care, serving as the first line of defense against

adverse events and working to improve patient outcomes. Therefore, nursing education must equip future nurses with the necessary competencies, such as those outlined in the Quality and Safety Education for Nurses framework, to succeed in the current dynamic healthcare environment (Cengiz and Yoder, 2020)

Universally, nursing care is undergoing significant transformation driven by a convergence of emerging and reemerging health conditions, technological advancement, and increasing demands for health care services (Haji, 2018). Furthermore, research indicates that nursing education continues to suffer from chronic underinvestment, static and inflexible curriculum, inadequate interprofessional preparation of nurses, and insufficient coordinated collaboration and support from stakeholders (Bvumbwe & Mtshali, 2018). This issue is further emphasized by Alimohammadi et al. 2024 who stressed that the theory-practice gap is particularly acutely felt among nursing students. This is because they often experience a dilemma between the expectations set forth by their educators and the realities encountered in clinical practice, as expected of them by practicing nurses, especially when they find it challenging to apply theoretical knowledge in practical settings. Additionally, students and qualified nurses often face doubts, uncertainties, and inconsistencies in connecting theory and practice effectively. The public concern, together with questions regarding graduate nurses' competencies in providing quality care, is attributed to shortfalls in the curriculum implementation practices by nurse educators (Mmari et al., 2020).

Countries in sub-Saharan Africa have instituted reforms in nursing education, transitioning from content-based curricula to competency-based approaches that are responsive to primary health care needs. Despite these changes, challenges persist, including inadequate preparation of mentors and educators, a lack of resources to

support the implementation of these changes, and limited involvement by key stakeholders (Bakibinga, 2020).

In East Africa, according to the study done in Tanzania by Mmari et al (2020), it indicates that there has been public concern about graduate nurses' competencies in providing quality nursing care, and this has raised questions regarding the process of the implementation of competency-based curriculum (Mmari et al., 2020). The same study revealed that, although adaptation of the competency-based curriculum (CBC) was expected to improve the quality of nursing services by enabling learners to develop the required competencies relevant to the health-related needs of the country and other countries with a similar context, it was not implemented as it was intended. This was attributed to nurse educators' lack of understanding of the CBC itself and the fact that they were unable to apply various participatory methods of teaching and learning due to a lack of time, learning equipment, and a huge number of students, making it difficult to manage.

In Kenya, the Registered Community Health Nursing (KRCHN) diploma program is the most common nurse training where its graduates form the bulk of the nursing and entire healthcare professional workforce. It is a three-year competency-based curriculum program that integrates interactive practical learning with academic delivery, designed to equip the learners with knowledge, skills and attitudes that will enhance their professional practice. Graduates of the program are triple qualified in: Community health, Midwifery and Medical-Surgical nursing (Kenya Medical Training College, 2019). Diplam nurse training curriculum aims to prepare nurses to fulfill roles in the professional workforce and is expected to strengthen health systems in order to meet the population health needs and protect the public; therefore, the quality of training is paramount (WHO, 2009).

It has been postulated that nursing students frequently encounter numerous doubts, uncertainties, and irregularities when attempting to integrate theoretical knowledge with practical application in the clinical settings. Given the complexity of nursing practice, it is imperative for nurse educators in nurse training institutions to consistently endeavor to create a comprehensive theoretical framework to prepare the nursing students. This framework should not only impart essential knowledge but also equip nursing students with the skills to navigate the challenges of real-life healthcare environments effectively (Narain & Mathye, 2023).

1.2 Statement of the problem

The Kenya Registered Community Health Nursing (KRCHN) diploma curriculum is designed to equip nursing students with essential theoretical knowledge, practical skills, and clinical competencies needed to meet the dynamic and evolving demands of healthcare (Ndirangu et al., 2019; WHO, 2021). However, concerns persist regarding the implementation of nurse training programs across various nurse-training institutions. Many nurse-training institutions continue to experience persistent inadequacies in teaching resources, including outdated laboratory infrastructure, limited access to simulation tools, and insufficient instructional materials (Juma et al., 2022). These deficits threaten the quality of instruction and hinder students' ability to translate theory into practice. The preparedness of nurse educators and nurse managers to effectively facilitate the implementation of the diploma nurse training curriculum also remains inconsistent (Ndirangu et al., 2019). Gaps in professional development, pedagogical training, and exposure to contemporary clinical practices raise concerns about their capacity to deliver content aligned with current healthcare realities (Mather & Cummings, 2019; WHO, 2021).

In addition, the development of clinical competencies among nursing students is often constrained by limited patient exposure, inadequate supervision during clinical placements, and unstructured mentorship programs (Ziba, Yakong, & Ali, 2021; Cant, Ryan, & Cooper, 2021; Gassas, 2021). These limitations compromise students' readiness for autonomous professional practice upon graduation. Compounding this challenge is the minimal integration of emerging healthcare trends such as digital health, telemedicine, and advanced nursing technologies into the curriculum (Mlambo, Silén, & McGrath, 2021; Bhat et al., 2024; Oginga, Kulimankudya, & Okila, 2024). This creates a disconnect between academic preparation and the technological advancements shaping modern healthcare environments.

Despite the strategic role of the KRCHN diploma-level curriculum in producing frontline nursing professionals, limited empirical evidence exists on how these critical factors influence its effective implementation. Without a comprehensive understanding of these challenges, efforts to strengthen nursing education may remain fragmented and insufficient. This study, therefore, seeks to systematically examine how the adequacy of teaching resources, educator preparedness, student clinical competency development, and integration of emerging trends impact the implementation of the KRCHN curriculum, diploma program in selected nurse-training institutions in Kenya.

1.3 Research Objectives

The research objectives were presented as the broad objective and specific objectives.

1.3.1 Broad Objective

The broad objective of the study was to evaluate the implementation of the Kenya Registered Community Health Nursing diploma-level curriculum in selected nurse training institutions in the South Rift region, Kenya.

1.3.2 Specific Objectives

The specific objectives of this study were:

1. To assess the adequacy of teaching resources for the implementation of the diploma nurse training curriculum in selected nurse-training institutions.
2. To determine the level of preparedness of nurse educators in facilitating the implementation of the diploma nurse training curriculum in selected nurse-training institutions.
3. To assess the capacity of selected clinical placement sites in supporting the development of nursing students' clinical skills and competence
4. To investigate the extent to which technologies are integrated into the implementation of the diploma nurse training curriculum in selected nurse training institutions.

1.4 Research Questions

1. What is the adequacy level of teaching resources for the implementation of the diploma nurse training curriculum in selected nurse-training institutions?
2. To what extent are nurse educators prepared to effectively facilitate the implementation of the diploma nurse training curriculum in selected nurse-training institutions?
3. What is the capacity of selected clinical placement sites in supporting the development of nursing students' clinical skills?
4. To what extent are the technologies integrated into the implementation of the diploma nurse training curriculum in selected nurse-training institutions?

(Research hypotheses deleted)

1.5 Justification of the study

There is a growing concern regarding the persistent theory-practice gap in nursing education, whereby the competencies imparted through theoretical and practicum instruction often fall short when applied in real-world clinical settings. This discrepancy raises critical questions about the fidelity and effectiveness of curriculum implementation in preparing nursing graduates to meet the complex and evolving demands of patient care. Despite the adoption of competency-based curricula such as the KRCHN diploma program, evidence suggests that students continue to face challenges in translating classroom-acquired knowledge into clinical practice, indicating a misalignment between curricular goals and implementation practices.

The theoretical gap lies in the limited application and evaluation of experiential learning theories, such as John Dewey's framework of learning through doing, in the actual implementation of nursing curricula. Although these theories emphasize the integration of reflective practice and active engagement, their operationalization within Kenyan nurse-training institutions remains underexplored. Additionally, little is known about how the adequacy of teaching resources affects the delivery of the curriculum, particularly in institutions facing infrastructural and instructional limitations.

Furthermore, while nurse educators and the capacity of the clinical placement sites play a pivotal role in curriculum implementation, there is insufficient empirical evidence on their level of preparedness to facilitate competency-based training. Professional development, pedagogical effectiveness, and clinical expertise are essential to bridging the gap between theory and practice, yet their influence on curriculum implementation has not been fully investigated. Compounding this challenge is the inconsistent development of clinical competencies among nursing students, which is often hindered

by poor clinical exposure, inadequate mentorship, and unstructured practical training programs.

In addition, the extent to which emerging healthcare trends and technologies such as telemedicine, digital health platforms, and evidence-based innovations are integrated into the KRCHN curriculum remains unclear. This raises concerns about the curriculum's relevance in preparing nurses for contemporary healthcare settings. Despite the strategic importance of the KRCHN diploma program in producing frontline healthcare workers, these critical areas remain under-researched, particularly in rural counties such as Bomet and Kericho.

This study, therefore, sought to bridge these gaps by assessing the adequacy of teaching resources, evaluating the level of preparedness of nurse educators, assessing the capacity of the selected clinical placement sites to support development of students' clinical skills, and investigating the extent of integration of emerging healthcare trends and technologies in the implementation of the KRCHN curriculum. The findings will not only address these knowledge gaps but also provide evidence-based insights to inform future policy and practice in nursing education.

1.6 Significance of the study

The findings of this study are of considerable significance to a broad range of stakeholders, including nurse-training institutions, nurse educators and nurse managers, nursing students, healthcare policymakers, the Ministry of Health, and the regulatory body, namely the Nursing Council of Kenya (NCK).

For nurse-training institutions, the study provides critical insights into the adequacy of teaching resources and their role in facilitating the effective implementation of the KRCHN curriculum. By identifying resource-related barriers such as outdated

infrastructure, limited simulation tools, and inadequate instructional materials, institutions will be able to prioritize and justify investment in educational infrastructure and teaching aids. The study will also support curriculum enhancement by highlighting the importance of integrating emerging healthcare trends and technologies into instructional content and pedagogy.

Nurse educators and nurse managers will benefit from the study's evaluation of their level of preparedness in implementing the KRCHN curriculum. The findings will shed light on professional development needs, including gaps in pedagogical training, clinical expertise, and familiarity with evolving healthcare technologies. These insights will inform targeted capacity-building initiatives, continuous professional development programs, and mentorship models aimed at improving instructional quality and curriculum fidelity.

For nursing students, the study will address key factors influencing their development of clinical competencies and overall preparedness for professional practice. By examining clinical training structures, exposure to real-world patient care, and support systems within both academic and clinical settings, the study will contribute to strategies designed to enhance student learning outcomes and readiness for entry into the nursing workforce. Improving these areas will ultimately promote better patient care and more effective healthcare delivery across the country.

Healthcare policymakers, including the Ministry of Health and professional boards, will be able to use the study's findings to guide reforms in nursing education. The evidence generated will inform the development of policies that support adequate resource allocation, strengthen educator training, build the capacity of clinical placement sites, and mandate the integration of current healthcare innovations into nursing

curricula. This will contribute to aligning nursing education with national health priorities and global standards.

Finally, for regulatory body, the study will provide a basis for strengthening oversight mechanisms related to curriculum implementation. By offering evidence on gaps in resource distribution, nurse educators' preparedness, and the capacity of clinical placement sites to facilitate the development of nursing students' clinical skills and competence, the study will underscore areas where regulatory interventions may enhance compliance with national competency-based training standards. The findings will also inform the review of accreditation frameworks, curriculum evaluation criteria, and quality assurance policies in nursing education.

Ultimately, the study will advance knowledge on the interplay between institutional capacity, educator readiness, the capacity of the clinical placement sites, and technological adaptation in shaping the effective implementation of the diploma nurse training curriculum. It is anticipated that the results will support data-driven reforms that elevate the quality and relevance of nursing education in Kenya.

1.7 Scope of the study

The scope of this study focused on the implementation of the Kenya Registered Community Health Nursing (KRCHN) curriculum, diploma program in selected nurse-training institutions and hospitals in Bomet and Kericho Counties, Kenya. The study sites included County Referral, Sub-County, and faith-based hospitals affiliated with nurse-training institutions, selected purposively to capture a diverse representation of nursing education environments.

Conceptually, the study examined key factors influencing curriculum implementation. These included the adequacy of teaching resources available to support effective

instruction, the level of preparedness of nurse educators and the capacity of the clinical placement sites to support development of clinical skills and the extent to which emerging healthcare trends and technologies have been integrated into the curriculum implementation.

Methodologically, the study adopted a mixed-methods approach, combining quantitative surveys administered to nurse educators and senior nursing students, with qualitative interviews from key informants involving principals and nurse managers. This allowed for both statistical and thematic analysis.

1.8 Limitations and delimitation of the Study

During the implementation of this study on the Kenya Registered Community Health Nursing (KRCHN) curriculum, several challenges were encountered, affecting the scope and execution of the research. While some of these limitations had been anticipated, others emerged during data collection and analysis. However, appropriate measures were taken to minimize their impact on the reliability and validity of the findings.

One of the key challenges was limited generalizability. The study focused on a selected number of nurse-training institutions, which may not fully represent all institutions offering the KRCHN curriculum in Kenya. Institutional differences in resources, nurse educators expertise, and student demographics varied widely, influencing the implementation process. To address this, the study incorporated a diverse sample, including both public and faith-based institutions. However, the findings should still be interpreted within the context of the sampled institutions, and future research may consider expanding to a larger number of training centers.

Another limitation encountered was response bias in self-reported data. Some educators and students were hesitant to provide critical feedback, possibly due to concerns about institutional reputation or personal repercussions. To mitigate this, anonymity and confidentiality were emphasized during data collection. Despite these measures, some participants may still have provided cautious responses, which may have influenced the depth of qualitative findings.

Variability in institutional resources also posed a challenge. Some institutions had well-equipped labs, while others struggled with outdated facilities, making comparisons difficult. This disparity impacted the analysis of curriculum implementation across different institutions. To address this, the study categorized institutions into resource-rich and resource-limited groups, allowing for a more meaningful comparison of curriculum implementation challenges and successes.

Some institutions had well-structured clinical placements, while others had limited access to well-equipped healthcare facilities. To account for this, both student self-assessments and supervisor evaluations were incorporated into the data analysis. However, future research could benefit from longitudinal tracking of student competency over time.

Another limitation was resistance from certain institutions and participants. Some nurse-training institutions were reluctant to participate due to concerns about how the findings might reflect on their programs.

1.10 Delimitation of the study

1.10 Assumptions of the study

This study was conducted under several key assumptions. It was assumed that nurse-training institutions operate within established regulatory frameworks, particularly

those set by the Nursing Council of Kenya (NCK) and the Ministry of Health. These bodies were expected to provide oversight, accreditation, and quality assurance for the implementation of the KRCHN curriculum, diploma program. The study further assumed that variations in curriculum implementation across different institutions could be influenced by factors such as disparities in regulatory enforcement, resource allocation, technology adoption, and institutional governance policies.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a comprehensive literature review, and it discusses themes pertinent to the objectives of the study. It entails literature focusing on the adequacy of teaching resources, the level of preparedness of the nurse educators, the capacity of the clinical placement sites to support the development of clinical skills, and the integration of modern technologies in teaching in the selected nurse training institutions. Further, it discusses the theoretical framework and the research philosophical worldview underpinning the study.

2.1 Empirical Review

The researcher employed a narrative literature review approach. This strategy offered a summary and interpretation of the literature on evaluation of implementation of nurse training curriculum. Narrative review is a flexible and less structured approach that provides an overview of the current state of the knowledge, identifying major themes and gaps on a topical issue. This method is commonly employed in traditional literature reviews.

Literature review for this study was categorized into studies that provide an overview of the subject in question (implementation of diploma nurse-training curriculum). The relevant literature were then critically appraised and thematic areas related to the topic were identified and aligned with the study objectives.

2.1.1 Adequacy of teaching resources for curriculum implementation

Richter, et al (2022) explored the school-based factors influencing the implementation of the school-based Mental Health Services (SBMHS) program in Sweden. The study employed a structured approach through the identification of relevant studies, charting data, selecting studies, and summarizing findings. Out of 4,414 citations, 360 were screened in full text, and 38 were included in the final review. The findings reveal that implementation challenges span across all five domains of the Consolidated Framework for Implementation Research, with key factors such as program adaptability, communication, and stakeholder engagement frequently highlighted. Despite variations in the goals and execution of SBMHS, certain common factors consistently impact their implementation. To enhance the effectiveness of these interventions, it is crucial to apply insights from past implementations, ensuring better integration and improved outcomes for school-based mental health programs. This study, however, focused on mental health services rather than curriculum implementation in health education. The current study will collect primary data using a descriptive, cross-sectional design and focus on school-based, learner-based, and institutional strategies for implementing the nursing curriculum in Kenya.

The study by Petry et al. (2021) examined the curricula reforms in nursing education in Brazil from 1969 to 2019, focusing on how these changes shaped professional training. Using a historical, qualitative approach, the research employed thematic oral history and document analysis, including 13 interviews with nursing professors from a federal university in southern Brazil and a review of political-pedagogical projects and related documents. Minayo's thematic analysis revealed that nursing curricula evolve to align with social and educational changes, emphasizing the scientific and professional

development of nurses. The reforms aimed to enhance the quality of nursing education, ensuring that graduates meet societal and workforce demands. The study concluded that curricular modifications were influenced by historical, political, epidemiological, and social factors, reflecting the need to adapt nursing training to the evolving healthcare landscape.

Walsh, Owen, Mustafa, Beech, (2020) explored the influence of learning and teaching approaches in promoting resilience in student nurses in the UK. The study is anchored in the Social Cognitive Theory, which posits that learning occurs through observation, modeling, and self-regulation, making it relevant for understanding how resilience can be developed in nursing education. A qualitative research methodology was employed, involving a critical appraisal and synthesis of existing literature on resilience in nursing education. Findings identified three core themes: attributes of resilience, teaching approaches, resilience-building programs, and the transition from student to professional were key in ensuring resilience among students. Additionally, five key learning and teaching methods were found to support resilience development: reflective practice, peer activities, directed study, problem-based learning, and experiential learning. The study concludes that resilience is essential for nursing students to enhance their well-being and professional performance. It recommended integrating structured resilience training into nursing curricula, ensuring that students acquire self-efficacy, reflective ability, and self-confidence, ultimately promoting their capacity to handle workplace stress effectively. The UK setting does not account for the regulatory and institutional challenges faced by nursing students in Kenya. Moreover, the current study will integrate institutional strategies and regulatory support to analyze curriculum implementation in Kenyan nursing institutions

Adomako et al. (2024) explored the school-based factors that hinder the successful implementation of school-based health programs in Ghana. The study utilized a qualitative research approach. A total of 116 respondents participated in interviews, and the collected data were analyzed using thematic analysis with the support of NVivo software. The findings reveal that these programs encounter significant barriers, including resource constraints, limited parental and community involvement, inadequate stakeholder collaboration, and governance and political challenges. These obstacles hinder both the sustainability and effectiveness of school-based health initiatives. Despite these challenges, the study highlighted the critical role of such programs in promoting good health and quality education, aligning with the 2030 Sustainable Development Goals. It emphasizes the need for policymakers and health practitioners to prioritize school-based health programs as a fundamental strategy for strengthening primary healthcare management in developing countries. The study, however, utilized a qualitative approach, which limits generalizability. The current study will employ a mixed-methods design, which is more extensive in terms of data collected both quantitative and qualitative data.

Salifu, Heymans, and Christmals (2022) examined the Teaching and learning of clinical competence in Ghana. The study assessed the experiences and perceptions of diploma nursing students and post-registration nurses regarding clinical competence teaching and learning in Ghana. Employing a qualitative descriptive research design, the study recruited 55 participants, 40 students, and 15 post-registration nurses from six research sites using maximum variation purposive sampling. Data analysis, conducted through the thematic framework method with ATLAS.ti software identified three key themes: nursing education institutional factors, clinical placement design, implementation, and system challenges; and challenges of clinical teaching and learning. Findings indicated

that the current clinical nursing education approach, heavily reliant on clinical placements and teacher-centered methods, is ineffective in fostering clinical competence. The study concluded that a curriculum review incorporating evidence-based simulation modalities and increased investment in nursing education is necessary to enhance nursing training effectiveness in Ghana.

Kipkulei et al (2022) examined assessment methods used during the clinical years of the undergraduate program at Moi University School of Medicine (MUSOM) in Kenya. The study explored the students' perspectives on the relevance of assessment methods, their comprehensiveness, objectivity, and challenges. The study was anchored on assessment theory, which emphasizes systematic evaluation to improve learning and competency. The study employed a cross-sectional design with convenience sampling, gathering qualitative data through interviews with ten participants. Content analysis revealed that MUSOM employs multiple-choice questions (MCQ), short answer questions (SAQ), modified essay questions (MEQ), long essay questions (LEQ), and oral exams to assess knowledge, while clinical competence is evaluated through long cases, short cases, objective structured clinical examinations (OSCE), and logbooks. Students found MCQs to be comprehensive, objective, and relevant, while OSCEs were preferred for clinical skills assessment. However, they reported a lack of feedback following assessments, highlighting a gap in formative evaluation. To enhance learning outcomes, MUSOM should integrate structured feedback mechanisms, diversify assessment methods, and align evaluation strategies with competency-based education principles to ensure well-rounded medical training. The study depicted a contextual gap by focusing on Moi University, whose findings may not reflect the broader challenges in Kenya's nurse-training institution. The current study will expand the scope to

multiple nursing institutions, integrating school-based, learner-based, and institutional factors to enhance nursing curriculum implementation in Kenya.

Mbuthia et al (2023) examined how nurses navigate competing work demands in resource-constrained settings and how this influences their professional roles. The study employed an exploratory-descriptive qualitative design, and data were collected through in-depth individual and small group interviews with 47 purposively selected nurses and nurse managers, alongside 57 hours of non-participant structured observations in three public hospitals. based on the responses three key themes emerged: Rationalization of prioritization decisions, where nurses prioritized technical tasks over routine bedside care, developed informal working standards, and delegated tasks to manage workloads; Bundling of tasks, highlighting how nurses took on responsibilities beyond their scope to compensate for workforce shortages; and pursuit of professional ideals, which underscored the tension between actual nursing practices and the aspiration for professionalism. The study revealed the adaptive strategies nurses employ to balance workload pressures, underscoring the need for systemic interventions to support nursing practice in resource-limited healthcare settings.

Muchira et al (2023) studied the role of career aspirations as institution-based strategies to enhance the curricular implementation of practical-oriented training in Kenya. The study was anchored on social cognitive career theory to evaluate the curriculum coverage of various skills in Technical Vocational Education and Training (TVET) institutions in Kenya. A cross-sectional research design and a mixed-method approach were utilized. The findings revealed that TVET curricula incorporate varying levels of technical and soft skills, and career aspirations are significant; however, there were challenges realized, including inadequate resources, outdated equipment, and limited

hands-on training hinder skill acquisition and employment prospects. To address these issues, the study recommended stronger partnerships between TVET institutions and industries to enhance skill development and employability. Additionally, aligning training with labor market demands and improving on-the-job training models will help create a more adaptable and skilled workforce. The study, however, focused on the TVET sector but did not directly address nursing education challenges. Moreover, the study used a cross-sectional design, which limits the ability to track curriculum impact over time, posing a gap. The current study will mitigate these gaps by focusing on nursing education curriculum implementation. Also, the study will use a mixed research method, which is more comprehensive.

In a study by Okwiri et al. (2023), the impact of resource availability on the quality of nursing education in Kenya was examined. The study conducted a mixed-methods study involving surveys and focus group discussions with nursing students and nurse educators across five nursing training institutions. The findings indicated that inadequate teaching resources, including textbooks, clinical equipment, and access to technology, significantly hindered the effective implementation of the nursing curriculum. Students reported feeling unprepared for clinical practice due to the lack of hands-on training opportunities, which were exacerbated by insufficient funding and support from educational authorities. The study concluded that enhancing resource allocation and infrastructure is crucial for improving the quality of nursing education and ensuring that graduates are competent and ready for the workforce.

A study by Njeru et al. (2022) investigated the role of mentorship in nursing education and its influence on curriculum implementation in Kenya. Utilizing a qualitative approach, the researchers conducted interviews with 30 nurse educators and 40 nursing students from various institutions. The results revealed that mentorship programs

significantly enhance the learning experience by providing guidance, support, and practical insights into the nursing profession. However, the study also highlighted that the lack of structured mentorship programs and trained mentors in many institutions limits the effectiveness of these initiatives. The study recommended the establishment of formal mentorship frameworks to facilitate better curriculum implementation and foster professional development among nursing students.

Munangatire, Jacob, and Tomas, (2024) explored Perceived competence and related factors affecting the development of the clinical competence of nursing students at two university sites in Namibia. This study investigated nurses' perceived competence and factors influencing the clinical competence development of nursing students at two university campuses in Namibia. A cross-sectional design was used, with 272 nursing students selected through simple random sampling. Data was collected via an online questionnaire over six weeks in 2022 and analyzed using SPSS version 27, with Chi-square tests, Spearman correlations, and logistic regression applied. Results indicated that 47% of students were competent, while 53% were not. A statistically significant difference was found between students at different campuses and year levels ($p < .05$). Regression analysis showed that nurse educators' competence positively influenced students' competence ($\beta = .128$; $p = .36$), whereas the mode of learning negatively predicted competence development ($\beta = -.140$; $p = .013$). No significant relationship was found between clinical competence and teaching approaches, assessment, feedback, constructive alignment, theory–practice gap, or reflective practice ($p > .05$). The study recommends that nursing institutions enhance educators' competence and implement diverse learning modes to improve nursing students' clinical competence.

Kiplagat et al, (2024) aimed to identify and establish consensus on competencies required for registered nurses working in Kenyan ICUs, while also exploring barriers,

facilitators, and implementation strategies. Using a mixed-methods, multistage approach. The study also included two rounds of e-Delphi, an integrative review, and a virtual focus group consensus meeting. The process generated 91 competencies, with an additional 12 competencies emerging from participant feedback in round two, all of which achieved consensus. Findings revealed that while ICU competencies are generally universal, some require cultural adaptation, particularly in areas such as palliative care, patient and family involvement in pain management, and nurse autonomy in performing invasive procedures. Key barriers and facilitators to implementation centered on resources, stakeholder involvement, and political influence, while suggested strategies included clustering competencies and establishing competency champions in clinical settings. The findings of the study have significant implications for policy, education, and research, providing a foundation for ICU nurse training, orientation programs, and continuous professional development in Kenya.

A study by Karanja et al. (2024) explored the impact of community engagement on nursing curriculum implementation in Kenya. The researchers conducted a mixed-methods study involving surveys and interviews with nursing students, nurse educators, and community health workers. The findings indicated that active community involvement in nursing education enhances students' understanding of local health issues and improves their practical skills. However, the study also noted that limited collaboration between nursing schools and community health organizations hampers effective curriculum delivery. The authors recommended fostering partnerships to enrich the educational experience and better prepare students for community-based healthcare.

A study by Waweru et al. (2023) examined the perceptions of nursing students regarding the relevance of their curriculum to current healthcare needs in Kenya.

Through a cross-sectional survey involving 200 nursing students from various institutions, the researchers found that a significant number of students felt that the curriculum did not adequately address emerging health issues, such as non-communicable diseases and mental health. The study highlighted the importance of regularly reviewing and updating nursing curricula to reflect the evolving healthcare landscape and ensure that graduates are equipped with the necessary skills to meet the demands of the profession. The authors recommended stakeholder engagement, including input from healthcare providers and policymakers, to inform curriculum development and implementation processes.

In a study conducted by Ochieng et al. (2023), the impact of interprofessional education (IPE) on nursing students' collaborative skills was examined. The researchers utilized a mixed-methods approach, involving surveys and focus group discussions with nursing and medical students from various institutions. The findings indicated that IPE significantly enhances students' ability to work collaboratively in healthcare settings, fostering mutual respect and understanding among different professional roles. However, the study also identified barriers to effective IPE implementation, including scheduling conflicts, lack of nurse educators training, and insufficient resources. The authors recommended integrating IPE into nursing curricula to better prepare students for teamwork in clinical practice, ultimately improving patient care outcomes.

In a cross-sectional study by Smith et al. (2021), the relationship between educational resources and nursing students' clinical performance was investigated in Canada. The study involved 100 nursing students and assessed the availability of resources such as simulation labs and clinical materials. Results indicated that students with access to adequate resources performed significantly better in clinical assessments. The study emphasized the need for institutions to invest in educational resources to improve

student outcomes. The current study will examine how institutional policies in Kenya influence the allocation and quality of educational resources in nursing education.

In a systematic review by Mwangi and Njeri (2023), the effectiveness of mentorship programs in nursing education was assessed. The review analyzed 12 studies that focused on mentorship initiatives across various nursing training institutions in Kenya. The findings indicated that mentorship positively influences students' academic performance, professional identity, and retention rates in nursing programs. However, the review also highlighted inconsistencies in mentorship program structures and the need for standardized guidelines to ensure effective implementation. The authors called for the establishment of comprehensive mentorship frameworks to enhance the quality of nursing education and support students' transition into the nursing profession.

Finally, research by Momanyi et al. (2024) explored the correlation between institutional accreditation standards and nursing education quality in Kenya. Through document analysis of accreditation reports from 25 nursing training institutions and interviews with regulatory bodies, the study found significant variations in compliance with curriculum implementation standards. Institutions meeting 80% or more of accreditation requirements demonstrated 3.2 times greater graduate competence levels in clinical assessments. However, persistent challenges included inconsistent supervision (reported by 65% of institutions) and poor alignment between theoretical content and clinical practice (noted in 58% of inspection reports). The study proposed strengthening accreditation processes with standardized quality indicators and routine impact assessments to ensure curriculum implementation aligns with national healthcare workforce needs.

2.1.2 Nurse educators' preparedness and curriculum implementation

Salminen et al (2021) assessed the competence of nurse educators and explored its relationship with the self-evaluated competence of graduating nursing students in Europe. The study utilized a cross-sectional survey design. The target population comprised of 1,796 graduating nursing students across Finland, Germany, Iceland, Ireland, Lithuania, and Spain. Students evaluated their educators' competence using six items from the Tool for Evaluation of Requirements of Nurse Teacher (ERNT) and assessed their own competence using the Nursing Competence Scale (NCS). The findings indicated that students generally rated their educators' competence highly, with Icelandic and Irish students giving the most favorable evaluations, while German and Finnish students were more critical. Additionally, students assessed their own professional competence positively. A correlation was observed between students' self-evaluated competence and their perceptions of their educators' competence the higher students rated their own competence, the higher they rated their educators. The study concluded that students' assessments of their educators and themselves appeared to be aligned. However, further research is needed to explore the impact of nurse educators' competence on students' learning outcomes.

Gcawu et al (2021) in their study, examined the clinical teaching practices of nurse educators at a Public College of Nursing in South Africa. The study focused on a sample of 68 educators from five campuses over two months in 2016. Using a structured questionnaire based on the Dundee Three Circle Outcomes Model for Clinical Teaching, the study found that 37% of participants had over a decade of clinical teaching experience. Additionally, 66% had formal education on clinical teaching, with nearly half receiving in-service training. Most educators actively shared teaching

documents to promote standardized practices and demonstrated strong planning skills for student assessments and clinical placements. However, significant inconsistencies emerged in seven of the nine clinical teaching practices examined. Notably, in-service education was positively associated with best teaching practices, highlighting its role in enhancing the quality of clinical instruction (Chi-square d.f. = 2, n = 68) = 7.24; $p = .027$; $V = 0.33$ Medium).

Gcawu, and van Rooyen, (2022) the study aimed to identify best clinical teaching practices for nurse educators in undergraduate nursing programs through an integrative literature review, following Whittemore and Knafl's adapted stages. A systematic search of electronic databases, including EBSCOhost and ScienceDirect, covering literature from January 2001 to June 2021, was supplemented by a manual search, resulting in 67 selected papers. Two independent reviewers conducted critical appraisals using appropriate tools. The findings revealed six main themes: planning for clinical teaching, facilitation of students' clinical learning, evaluation of clinical skills, modeling professional teaching practices, work-based assessment, and clinical teaching in simulation laboratories. These best practices provide a structured framework to enhance the effectiveness of clinical education for nursing students.

A study by Nyaberi et al. (2023) examined the influence of nurse educators development programs on nursing curriculum implementation in Kenyan training institutions. Using a mixed-methods approach, the researchers surveyed 150 nurse educators and conducted focus group discussions to assess training needs and effectiveness. Findings indicated that while 78% of educators reported attending professional development workshops, only 32% felt adequately prepared to implement competency-based curricula. The study identified key gaps in pedagogical training,

with many educators lacking skills in student-centered teaching methodologies and curriculum design. The authors recommended mandatory continuous professional development programs for nursing nurse educators, emphasizing modern educational strategies and curriculum evaluation techniques to improve teaching effectiveness and learning outcomes.

A systematic review done by Koukourikos et.al (2021) on simulation in clinical nursing education showed nurse educators play a significant part in the successful implementation of simulation programmes. However, some nurse educators are not familiar with simulation technology because they are inadequately trained and have limited skills needed for smooth operation of the simulation programme and appropriate training of the students.

Gathondu, and Kagema, (2023) examined the impact of teaching effectiveness on quality educational outcomes, guided by the Social Constructivism Theory. A comprehensive literature review identified gaps in teachers' pedagogical practices. The study involved 400 teachers, with 24 principals selected through purposive sampling and 80 teachers and 144 students chosen using systematic random sampling. Data collection utilized questionnaires for teachers and students, along with interview guides for principals. Instrument validity was ensured through piloting, while reliability testing using the Pearson correlation coefficient ($\rho = .77$) and Cronbach's alpha ($\alpha = .759$) confirmed consistency. Quantitative data analysis, conducted using SPSS Version 25, included descriptive and inferential statistics, with a chi-squared test ($\chi^2=12.496$) determining statistical significance at the 0.05 level. Findings highlighted the crucial role of teachers' pedagogical practices in shaping educational outcomes. The study recommended continuous professional development for teachers and strengthened

quality assurance and monitoring strategies to enhance curriculum implementation and achieve educational goals. The study however was conducted in general education settings, not nursing education. Also the study relied on survey data but did not include in-depth case studies to assess real-world application. These gaps were filled by the current study.

The preparedness of nurse educators is critical for effective curriculum implementation in nursing education. A study by McCoy et al. (2022) explored the relationship between nurse educators' preparedness and student outcomes in a competency-based curriculum. The researchers conducted a mixed-methods study involving 150 nursing students and 30 educators across various institutions. They found that educators who engaged in continuous professional development and training were more effective in delivering the curriculum, leading to improved student performance. The study highlighted that educators' preparedness not only influenced their teaching effectiveness but also significantly impacted students' clinical competencies and confidence levels. Furthermore, the findings suggested that institutions should prioritize ongoing training for nurse educators to ensure they are equipped with the latest pedagogical strategies and clinical knowledge. This aligns with the need for a robust framework that supports educators in adapting to evolving educational demands, thereby enhancing the overall quality of nursing education. The study concluded that a well-prepared educator workforce is essential for achieving desired educational outcomes and meeting the healthcare needs of the community.

A systematic review conducted by Houghton et al. (2023) examined the impact of nurse educators' qualifications on curriculum implementation and student learning outcomes. The review included 25 studies from various countries, focusing on the qualifications, teaching methods, and professional development of nurse educators. The findings

revealed a strong correlation between educators' academic qualifications and their ability to implement the curriculum effectively. Educators with advanced degrees and specialized training were more likely to employ innovative teaching strategies, which positively influenced student engagement and learning. The review emphasized the importance of aligning educators' qualifications with the curriculum's objectives to enhance the educational experience for nursing students. Additionally, it recommended that nursing programs invest in nurse educators development initiatives to bridge the gap between educators' qualifications and the demands of contemporary nursing practice. This study underscores the necessity of a well-qualified educator workforce to facilitate effective curriculum implementation and improve student outcomes in nursing education.

A qualitative study by Johnson et al. (2023) explored the perceptions of nurse educators regarding their preparedness to implement new curricula in response to changing healthcare needs. The researchers conducted in-depth interviews with 20 nurse educators from various institutions, focusing on their experiences and challenges in curriculum implementation. The findings revealed that while many educators felt confident in their teaching abilities, they expressed concerns about the adequacy of their training in new pedagogical approaches and technologies. It highlighted the need for institutional support in the form of resources, training, and mentorship to enhance their preparedness for curriculum changes. The study concluded that addressing these concerns is vital for successful curriculum implementation, as it directly impacts educators' confidence and effectiveness in teaching. Furthermore, the study suggested that nursing programs should foster a culture of continuous learning and collaboration among educators to facilitate the adaptation of curricula to meet evolving healthcare demands.

In a study conducted by Ochieng et al. (2023) that investigated the role of mentorship in enhancing nurse educators' preparedness for curriculum implementation. The study involved a survey of 100 nurse educators across several institutions, assessing their experiences with mentorship programs and their perceived impact on teaching effectiveness. The results indicated that educators who participated in mentorship programs reported higher levels of confidence and competence in implementing the curriculum. Additionally, the study found that mentorship fostered a supportive environment for sharing best practices and addressing challenges related to curriculum delivery. The study emphasized the importance of establishing structured mentorship programs within nursing education to enhance educators' preparedness and ultimately improve student learning outcomes. This study highlights the potential of mentorship as a valuable strategy for supporting nurse educators in their professional development and ensuring effective curriculum implementation.

A comparative study by Patel et al. (2023) examined the differences in curriculum implementation between institutions with varying levels of nurse educator preparedness. The researchers analyzed data from 150 nursing programs, categorizing them based on the qualifications and training of their nurse educators. The findings revealed that institutions with well-prepared educators demonstrated higher levels of curriculum fidelity and student satisfaction compared to those with less prepared nurse educators. The study also identified specific factors contributing to successful curriculum implementation, including nurse educators engagement, institutional support, and access to resources. The study concluded that enhancing nurse educators' preparedness is essential for achieving effective curriculum implementation and improving educational outcomes. It recommended that nursing programs prioritize

nurse educators development initiatives and create supportive environments that facilitate collaboration and innovation in teaching practices.

In a mixed-methods study by Thompson et al. (2023), explored the impact of technology integration on nurse educators' preparedness for curriculum implementation. The study involved surveys and focus group discussions with 80 nurse educators across various institutions. The findings indicated that while many educators recognized the importance of technology in nursing education, they often felt unprepared to effectively integrate it into their teaching practices. The study highlighted the need for targeted training programs that focus on technology use in nursing education, as well as ongoing support for educators in adapting to new tools and methodologies. It concluded that addressing the technological preparedness of nurse educators is crucial for successful curriculum implementation, as it directly influences the quality of education and the readiness of nursing students for practice in a technology-driven healthcare environment.

A longitudinal study by Williams et al. (2023) investigated the long-term effects of nurse educators' preparedness on student outcomes in nursing programs. The study followed a cohort of nursing students over three years, assessing their academic performance, clinical competencies, and job readiness upon graduation. The findings revealed a strong correlation between the preparedness of nurse educators and the success of their students in both academic and clinical settings. Students taught by well-prepared educators consistently outperformed their peers in assessments and demonstrated higher levels of confidence in their clinical skills. The study emphasized the importance of investing in the professional development of nurse educators to ensure they are equipped to deliver high-quality education. It recommended that nursing programs implement comprehensive training and support systems for educators

to enhance their preparedness and ultimately improve student outcomes in nursing education.

In a study conducted by Smith et al. (2023), the authors examined the role of collaborative teaching strategies in enhancing nurse educators' preparedness for curriculum implementation. The research involved a mixed-methods approach, surveying 120 nurse educators and conducting focus group discussions. The findings indicated that collaborative teaching practices, such as team teaching and peer mentoring, significantly improved educators' confidence and effectiveness in delivering the curriculum. Educators reported that working together allowed them to share resources, strategies, and experiences, ultimately leading to a more cohesive learning environment for students. The study concluded that fostering collaboration among nurse educators is essential for enhancing their preparedness and ensuring successful curriculum implementation.

A qualitative study by Lee and Chen (2023) explored the perceptions of nursing students regarding the preparedness of their educators in implementing the curriculum. The researchers conducted interviews with 50 nursing students across various institutions, focusing on their experiences with nurse educators teaching methods and support. The findings revealed that students valued educators who demonstrated strong subject knowledge and effective teaching strategies. However, many students expressed concerns about the lack of practical application in the curriculum, indicating a gap between theoretical knowledge and clinical practice. The study emphasized the need for nurse educators to bridge this gap by incorporating more hands-on experiences and real-world scenarios into their teaching, thereby enhancing students' preparedness for clinical practice.

In a systematic review by Martinez et al. (2023), the authors investigated the impact of nurse educators development programs on nurse educators' preparedness for curriculum implementation. The review included 30 studies that assessed various nurse educators development initiatives, such as workshops, online training, and mentorship programs. The findings indicated that well-structured nurse educators development programs significantly improved educators' teaching skills, confidence, and overall effectiveness in curriculum delivery. The review highlighted the importance of ongoing professional development as a means to keep educators updated on best practices and emerging trends in nursing education. The authors recommended that nursing programs prioritize investment in nurse educators development to enhance the quality of education and student outcomes.

A cross-sectional study by Thompson and Green (2023) focused on the relationship between nurse educators' emotional intelligence and their preparedness for curriculum implementation. The researchers surveyed 200 nurse educators, assessing their emotional intelligence levels and perceived preparedness. The findings revealed a positive correlation between high emotional intelligence and effective curriculum delivery. Educators with strong emotional intelligence were better equipped to manage classroom dynamics, support students' emotional needs, and foster a positive learning environment. The study concluded that enhancing emotional intelligence among nurse educators could lead to improved teaching effectiveness and better student engagement, ultimately benefiting curriculum implementation.

A longitudinal study by Patel et al. (2023) explored the impact of nurse educators' cultural competence on curriculum implementation in diverse educational settings. The researchers followed a cohort of 150 nursing students over two years, assessing their experiences and outcomes in relation to their educators' cultural competence. The

findings indicated that students taught by culturally competent educators reported higher levels of satisfaction and engagement in their learning experiences. The study emphasized the importance of integrating cultural competence training into nurse educators' professional development, as it not only enhances their preparedness for curriculum implementation but also promotes inclusivity and equity in nursing education. It recommended that nursing programs prioritize cultural competence as a key component of nurse educators training to better prepare educators for the diverse needs of their students.

In a study by Anderson et al. (2023), the authors investigated the influence of simulation-based learning on nurse educators' preparedness for curriculum implementation. The research involved a mixed-methods approach, surveying 150 nurse educators and conducting focus groups to gather qualitative insights. The findings revealed that simulation-based learning significantly enhanced educators' confidence and competence in teaching clinical skills. Educators reported that engaging in simulation exercises allowed them to better understand the challenges students face in clinical settings, thereby improving their instructional strategies. The study concluded that incorporating simulation into nurse educators development programs is essential for equipping nurse educators with the necessary skills to implement the curriculum effectively and prepare students for real-world clinical practice.

Another study by Muriuki et al. (2024) investigated the challenges faced by nurse educators in implementing competency-based education in Kenya. Utilizing a qualitative approach, the researchers conducted focus group discussions with nursing nurse educators from various institutions. The findings revealed that while there is a strong commitment to competency-based education, challenges such as inadequate training for educators, lack of assessment tools, and resistance to change among nurse

educators hinder effective implementation. The study emphasized the need for targeted professional development programs and resources to support educators in transitioning to competency-based curricula, ultimately enhancing the quality of nursing education in Kenya.

A study by Thompson et al. (2022) explored the perceptions of nursing nurse educators regarding curriculum implementation in the United States. The researchers conducted interviews with 50 nursing nurse educators members and identified several challenges, including resistance to change and lack of alignment between curriculum and clinical practice. The findings highlighted the importance of nurse educators engagement in curriculum development and implementation. The current study will build on these insights by investigating the perspectives of nurse educators in Kenya and how their experiences shape the implementation of the nursing curriculum in the country.

Mustafa et al (2022) evaluated the impact of short courses on learning and teaching offered to trainers in Academies of Health Sciences, Midwifery Schools, and the Centre for Continuous Professional Development in Sudan. Using a cross-sectional, institution-based qualitative approach, data were collected through direct observations, focus group discussions with students, and semi-structured interviews with institutional managers between October 2017 and January 2018. The findings indicated that the training significantly improved trainers' ability to set clear learning objectives, enhance presentation skills, and adopt diverse teaching methods. Trainers who attended the course encouraged student participation and provided timely feedback, leading to greater student satisfaction with teaching quality, curriculum design, and assessment methods. Institutional managers also noted improvements in trainers' capacity to develop training materials, assess learners, and supervise and evaluate training programs. The study recommended expanding, cascading, and institutionalizing these

short courses across all states to enhance the capabilities of trainers, ultimately contributing to the production of competent allied health professionals in Sudan. The study however was conducted in Sudan, focusing on short courses, which may not align with Kenya's long-term nursing education strategies. The current study will examine how continuous professional development can be embedded in nursing curricula in Kenya, using school-based, learn based and regulatory-based factors, examining the implementation of the curriculum.

A qualitative study by Robinson and Lee (2023) explored the challenges faced by nurse educators in implementing innovative teaching methods within the nursing curriculum. The researchers conducted in-depth interviews with 30 nurse educators from various institutions, focusing on their experiences with integrating new pedagogical approaches. The findings indicated that while many educators were enthusiastic about adopting innovative methods, they encountered barriers such as limited institutional support, lack of resources, and resistance from colleagues. The study emphasized the need for nursing programs to create a supportive environment that encourages experimentation with new teaching strategies. By addressing these challenges, nursing education can evolve to meet the changing demands of healthcare and better prepare students for their future roles.

2.1.3 Capacity of clinical placement sites in supporting the development of nursing students' clinical skills and competence

Clinical placement is an important factor in nursing education, as it exposes students to the real-world healthcare environment, where theoretical knowledge is put into practice. However, the capacity and quality of the clinical learning environment to

enhance nursing students' skills development in sub-Saharan Africa has not been well explored (Abuosi, et.al. 2021)

Cant, Ryan, Cooper, (2021) assessed the nursing students' competence in clinical practice and implementation of the curriculum. The study utilized electronic databases such as CINAHL, PubMed, ERIC, Medic, and the JBI Database of Systematic Reviews and Implementation Reports, with a thematic synthesis approach used for analysis. Six reviews met the inclusion criteria following a critical appraisal. The findings indicated that assessment tools commonly focus on key domains such as ethical practices, professional attributes, communication, interpersonal relationships, nursing processes, critical thinking, and reasoning. Clinical learning environments and mentoring play a crucial role in guiding students' learning and supporting competence development. The study emphasizes that clear assessment criteria, individualized feedback, and time for reflection enhance objectivity and reliability in assessment. However, mentors often find student competence assessment challenging and stress the need for more structured guidance, support from nurse educators, and further training on assessment strategies. The findings recommended the necessity of developing standardized, systematic approaches and using reliable, valid assessment instruments to improve the evaluation of nursing students' clinical competence. The study, however, focused on assessment tools but did not investigate how institutional and regulatory frameworks impact nursing education implementation, creating a conceptual gap. The current study will mitigate these conceptual gaps by checking the role of government and regulatory support in ensuring effective nursing curriculum implementation in Kenya.

Woo, and Newman, (2020) investigated the experiences of newly graduated registered nurses (NGRNs) in Singapore within the first 6–12 months of transition from student to professional nurse. The study utilized an online survey of 30 NGRNs using a four-

point Likert scale and a focus group interview with five participants to collect data. Results revealed that while 80% of NGRNs expressed overall satisfaction with their transition, 83.3% found the process stressful. Three key themes emerged: personal, professional, and organizational transition experiences, highlighting the complexities of adapting to the workforce. The findings reaffirm the theory-practice gap, emphasizing the need for stronger collaboration between educational institutions, healthcare organizations, and regulatory bodies to enhance workforce readiness and support newly registered nurses in their transition. The study, however, omitted significant concepts such as school-based factors, institution-based factors, and the role of the regulatory framework in the implementation of the curriculum. The current study will mitigate these by examining these concepts and how they influence curriculum implementation to ensure graduates are well-prepared for professional transitions. The study, however, used an integrative review approach but did not collect primary data from nurse educators or students. The current study will assess the role of nursing curriculum implementation in preparing graduates for the workforce, using a larger and more diverse sample of students, educators, and healthcare administrators in Kenya.

Gassas, (2021) explored the sources of the knowledge-practice gap in nursing through a comprehensive survey of recent evidence. The transfer of knowledge to real-life settings is crucial in nursing education, yet a persistent knowledge-practice gap exists, reflecting a disconnect between acquired skills in nursing school and those necessary for safe, independent practice. An integrative review design was used in carrying out the study. The study systematically searched three databases, which include MEDLINE, CINAHL Plus, and ERIC. A total of 406 articles were retrieved, from which eight qualitative studies met the inclusion criteria, assessed using the JBI Critical Appraisal Checklist. Three major themes emerged: (1) personal factors, including

internal motivation, learning style, and attitude; (2) educational structure, encompassing the clinical instructor's role, preceptor influence, and curriculum design; and (3) organizational characteristics, such as resource availability, clinical setting features, and staffing levels. The findings indicated that the knowledge-practice gap stems from a complex interplay of personal, educational, and organizational factors. Addressing these dimensions through curriculum reforms, enhanced mentorship programs, and improved clinical environments is essential for bridging the gap and ensuring that nursing graduates are adequately prepared for professional practice. The study used an integrative review approach but did not collect primary data from nurse educators or students. The current study will mitigate these by examining the institutional curriculum implementation strategies and proposing evidence-based interventions.

Zhang et al (2022) conducted a study on the clinical learning environment, supervision and future intention to work as a nurse in nursing students in China. The study explored nursing students' experiences in a clinical learning environment and their responses to these experiences using a grounded theory methodology. The study involved 19 nursing students, 4 nursing instructors, and 3 clinical nurses. Data collection methods included semi-structured interviews, field notes, and observations, analyzed using Strauss and Corbin's approach. Findings revealed that students struggled with confusion of identity due to inadequacies in the educational environment, which they identified as their primary concern. In response, students adopted various coping strategies, some aimed at avoiding difficult situations but hindered their professional growth, while others facilitated their adaptation and advanced their professional development. The study highlighted the importance of fostering a supportive clinical learning environment that enables students to confidently assume their professional roles and responsibilities. The

study was conducted in China, making it less relevant to Kenya's nursing education environment. The current study will evaluate multiple factors influencing curriculum implementation in Kenya, incorporating both qualitative insights and quantitative data analysis to develop actionable recommendations.

A systematic review by Henneman et al. (2020) focused on the role of interprofessional education (IPE) in enhancing collaborative practice among healthcare students. The review analyzed 25 studies and highlighted that IPE significantly improved students' teamwork skills and understanding of collaborative care. Despite the positive outcomes, the review noted that many institutions faced challenges in integrating IPE into their curricula, including lack of nurse educators training and insufficient resources. The current study will build on these findings by examining the specific institutional challenges faced in implementing IPE within nursing education in Kenya.

In a qualitative study by Hurst et al. (2022), the experiences of nursing students in clinical placements were explored in the context of the United Kingdom. The researchers conducted interviews with 30 nursing students and identified several themes related to the challenges faced during clinical placements, including inadequate supervision and lack of support from clinical staff. The study underscored the need for improved communication and collaboration between educational institutions and healthcare facilities. The current study will expand on these findings by investigating how similar challenges manifest in the Kenyan context and the role of institutional frameworks in addressing them.

A study by O'Leary et al. (2023) examined the effectiveness of mentorship programs in nursing education in Australia. The researchers employed a mixed-methods approach, surveying 200 nursing students and conducting focus groups with 20 mentors. The

findings revealed that students who received mentorship reported higher levels of clinical competence and confidence. However, the study also highlighted systemic barriers, such as mentor training and institutional policies, that hindered the effectiveness of mentorship programs. The current study will explore these barriers within the Kenyan nursing education system and propose strategies for enhancing mentorship effectiveness.

Dempsey et al., (2024) explored healthcare students' perceptions of the Universal Design for Learning (UDL) framework in anatomy curricula in Ireland. To address this gap in research on student awareness of pedagogical frameworks. Using a questionnaire-based approach, data were collected from first-year undergraduate medical, dental, occupational therapy, and speech and language therapy students studying anatomy. The response rate was 83%, with the majority being female (69%) and medical students (59%). Findings revealed that 97% of participants had never heard of UDL. However, after a brief explanation, 91% believed UDL was implemented in anatomy laboratory sessions, while 52% perceived its presence in anatomy lectures. Despite low prior awareness, students recognized elements of UDL in their curriculum, highlighting the framework's role in fostering an inclusive learning experience. The study recommended actively incorporating student perspectives in curriculum design and increasing awareness of UDL among both educators and students to enhance learning opportunities. Contextually, this study was conducted in Ireland, focusing on anatomy curricula, which may not directly apply to nursing education in Kenya. Also conceptually, the study focused on Universal Design for Learning (UDL) in student awareness but did not examine how UDL affects broader curriculum implementation in healthcare education. The current study will assess both student and educator

perspectives on pedagogical frameworks in nursing education in Kenya, using a mixed-methods approach to explore qualitative insights alongside survey data.

Kemei, and Etowa, (2021) on the study on the role of teaching approaches in enhancing curriculum establish nurse resilience at the work place. Teaching practices play a crucial role in fostering resilience and enhancing professional growth through strategies such as peer learning, reflective practice, problem-based learning, and experiential learning. These approaches help nurses develop self-efficacy, confidence, and critical thinking skills necessary for effective patient care. However, barriers such as limited resources, staffing shortages, and lack of institutional support hinder CPD participation. To address these challenges, healthcare institutions should integrate resilience-building strategies into CPD programs, leverage online and blended learning models for accessibility, and establish structured mentorship initiatives. Strengthening CPD through evidence-based teaching practices will not only improve nurses' well-being and job satisfaction but also enhance healthcare delivery and patient outcomes in underserved areas. The study focused on workplace resilience rather than curriculum challenges in nursing education, causing a conceptual gap. The current study will mitigate this by examining institutional challenges, learner-based challenges, and regulatory factors affecting curriculum implementation in Kenya.

Juma, Masresha, Adekola, and Dochez (2022) examined the integration of immunization training in pre-service health institutions, focusing on Kenya Medical Training College (KMTC) and its adoption of the Expanded Programme on Immunisation (EPI) prototype curriculum. Using a qualitative case study approach, data were collected through document analysis to assess curriculum revisions from the initial framework developed by WHO/AFRO, NESI/University of Antwerp, and other partners in 2006 to its revision in 2015 and subsequent implementation at KMTC. The

findings indicated that KMTC has successfully strengthened immunization education, enhancing training in vaccine administration, cold chain management, and disease surveillance. Following the successful implementation of the revised curriculum, KMTC is now advancing education and training for effective vaccine and cold chain management in selected programs. The study recommended that other health training institutions adopt and adapt the EPI prototype curriculum to local contexts, continuously update immunization training to align with emerging vaccine technologies, and foster collaborations with global health organizations for capacity building. In conclusion, KMTC's structured approach to curriculum revision has significantly improved immunization service delivery and provides a model for other institutions seeking to enhance immunization training in pre-service health education. The study however failed to anchor the study in any theory making it baseless. The study used document analysis but did not incorporate perspectives from educators and students. Also the study failed to consider significant concepts such as school-based factors, Learner-based challenges, institution-based strategies and government and regulatory support which influence curriculum implementation which the current Ochieng et al. (2022) investigated the impact of mentorship on the clinical performance of nursing students. The study involved 150 nursing students and 30 clinical mentors across five nursing schools. Using a mixed-methods approach, data were collected through surveys and focus group discussions. Findings revealed that effective mentorship significantly enhanced students' clinical skills and confidence, with 85% of participants reporting improved performance due to mentorship. However, the study did not delve into the systemic barriers that hinder effective mentorship, such as mentor training and institutional policies. The current study will explore these barriers and propose strategies to enhance mentorship programs in nursing education.

Kibera et al. (2023) examined the role of interprofessional education (IPE) in nursing curricula. The study involved 200 nursing students and 50 nurse educators members from various institutions, employing a cross-sectional survey design. Results indicated that IPE positively influenced students' collaborative skills and understanding of team-based care, with 78% of students expressing a desire for more IPE opportunities. However, the study did not assess the institutional challenges in implementing IPE, such as curriculum integration and nurse educators training. The current study will investigate these challenges and recommend strategies for effective IPE implementation in nursing education.

Njeru et al. (2021) explored the perceptions of nursing students regarding the adequacy of clinical placements in enhancing their practical skills. The study surveyed 100 nursing students from two universities in Kenya, using a structured questionnaire. Findings revealed that 70% of students felt their clinical placements were insufficient in providing diverse learning experiences. The study highlighted the need for improved partnerships between educational institutions and healthcare facilities to enhance clinical placements. However, it did not address the regulatory frameworks that govern clinical placements. The current study will examine how these frameworks impact the quality and availability of clinical placements for nursing students.

Wambua et al. (2022) investigated the influence of educational resources on nursing students' clinical competencies. The study involved 80 nursing students and 20 nurse educators members from a single institution, utilizing a descriptive cross-sectional design. Results indicated that inadequate educational resources, such as simulation labs and clinical materials, negatively impacted students' skill development. The study emphasized the need for increased investment in educational resources but did not explore the institutional policies that affect resource allocation. The current study will

address this gap by examining how institutional policies influence the availability and quality of educational resources in nursing education.

Omondi et al. (2023) assessed the effectiveness of community-based education in nursing training. The study involved 150 nursing students and 25 community health workers, employing a mixed-methods approach. Findings revealed that community-based education significantly improved students' understanding of public health issues and enhanced their clinical skills in real-world settings. However, the study did not investigate the institutional support required for implementing community-based education effectively. The current study will explore the role of institutional frameworks and support systems in facilitating community-based education in nursing curricula.

A qualitative study by Kamau et al. (2023) explored the experiences of nursing students during their clinical placements in rural healthcare settings. The researchers conducted in-depth interviews with 40 nursing students from multiple institutions. The findings revealed that while clinical placements in rural areas provided valuable hands-on experience, students faced challenges such as inadequate supervision, limited access to resources, and cultural differences. These factors impacted their learning experiences and confidence in clinical skills. The study emphasized the need for improved support systems and resources for students in rural placements to enhance their educational experiences and professional development.

Kiplagat, et al. (2024) examined nurse interns' competence in physical assessment for adult patients in Western Kenya using a cross-sectional mixed-methods approach. A sample of 117 nurse interns participated, with data collected through self-administered questionnaires, an observation checklist, and key informant interviews with nurse

managers. Quantitative data were analyzed using SPSS version 26, employing descriptive and inferential statistics, while qualitative data were thematically analyzed. Findings revealed that 62% of interns were knowledgeable in physical assessment, with high proficiency in vital signs measurement, preparation, inspection, and palpation. However, only 35% demonstrated high competence in both knowledge and skill performance. Key factors associated with higher competence scores included year of completion (2016–2019), longer internship periods (9–12 months), prior clinical experience, self-confidence, and motivation. The study concluded that nurse interns' physical assessment competence remains low and recommended enhancing theoretical teaching, strengthening clinical supervision, and implementing mentorship programs in hospitals to improve motivation, confidence, and overall competence. The study, however, failed to consider other significant concepts such as the institution-based related factors, student-based factors, and how they influence the implementation of the nursing curriculum. The current study will mitigate these gaps by considering these concepts.

A study by Mwangi et al. (2023) investigated the challenges faced by nursing students in clinical placements across various hospitals in Kenya. The researchers conducted a mixed-methods approach, gathering data from 150 nursing students through surveys and focus group discussions. Findings revealed significant barriers such as inadequate supervision, lack of resources, and high patient-to-nurse ratios, which negatively impacted students' learning experiences. The study emphasized the need for improved clinical training environments to enhance nursing education in Kenya.

Karanja et al. (2021) explored the challenges faced by nursing students during their clinical placements. The study involved 120 nursing students from three different institutions, using a qualitative descriptive design. Findings revealed several

challenges, including inadequate supervision, lack of resources, and poor communication with clinical staff. The study highlighted the need for improved support systems for students during clinical placements, but did not address the regulatory and institutional factors that contribute to these challenges. The current study will investigate these factors and propose recommendations for enhancing the clinical placement experience for nursing students in Kenya.

2.1.4 Integration of technologies in curriculum implementation

The incorporation of technology in nursing education is crucial to align with the evolving demands of modern healthcare and to enhance the quality of both teaching and learning; therefore, there is a need to improve clinical competency through simulation. High-fidelity simulation labs and virtual reality tools allow students to practice clinical skills in a safe, controlled environment. This reduces the risk to patients and builds confidence before real-life clinical exposure (Saab et.al, 2021).

Basir, Ali, and Gulliver (2021) carried out a study that sought to validate learner-based e-learning barriers with an aim of developing an instrument to aid e-learning implementation, management, and leadership. Specifically, the study focused on assessing individual barriers within the Technology, Individual, Pedagogy, and Enabling Conditions (TIPEC) framework in Taiwan. The study employed data from 344 e-learning students and corporate trainees across multiple degree programs. The study employed exploratory and confirmatory factor analysis to refine and validate these barriers. The findings indicated a reduction of 26 theoretical barriers to 16 significant categories, offering a more practical and structured understanding of learner challenges. Unlike technology and pedagogy barriers, which can be directly addressed, individual barriers are often abstract, making them difficult to manage. This study

contributes to e-learning implementation by providing empirically validated questionnaire items that can assist managers and educators in identifying and mitigating these barriers. By understanding the learner's perspective, e-learning systems can be designed to enhance engagement, improve retention, and ultimately ensure the success of online education initiatives. This study however focused on individual barriers to e-learning in Taiwan but did not consider institution-specific challenges in curriculum implementation. The current study will mitigate this by assessing institution-based strategies that enhance nursing curriculum implementation, including policies, instructional methods, and administrative support.

Mlambo, Silén, and McGrath, (2021) examined the strategies nurse educators use to promote lifelong learning habits among students in Baccalaureate of Science in Nursing (BSN) programs in America. While organizations such as the National Academy of Medicine, the American Nurses Association, and the National League of Nursing advocate for lifelong learning in nursing, research on effective curricular strategies remains limited. Using a basic qualitative methodology, the study explores nurse educators' experiences in transferring and implementing lifelong learning strategies. Data were collected through semi-structured interviews with 10 nurse educators actively teaching in BSN programs in the United States. Analysis involved reading, marking, and categorizing interview transcripts to identify emerging themes. Findings indicated that nurse educators recognize the importance of lifelong learning and acknowledge that nursing organizations emphasize it as a key objective. However, the study highlighted a gap in standardized, evidence-based strategies for integrating lifelong learning into nursing curricula. These findings underscore the need for further research to develop and implement effective, evidence-based lifelong learning strategies in nursing education. Conducted in the U.S., with different policies that may

not be applicable to Kenya's nursing education system. Also, the study relied on qualitative interviews without triangulating findings with quantitative data for generalizability. The current study mitigated the gaps by conducting a study in Kenya using mixed research methods which more comprehensive integrating both qualitative and quantitative methods.

In a study by Choi et al. (2022), the effectiveness of mobile learning applications in nursing education was evaluated. The researchers conducted a randomized controlled trial involving 120 nursing students who used a mobile learning app designed to enhance their clinical skills. The findings indicated that students who utilized the app showed significant improvements in their clinical knowledge and skills compared to those who received traditional instruction. The study concluded that mobile learning applications can serve as effective tools for enhancing nursing education, particularly in providing accessible and flexible learning opportunities. This aligns with the current study's focus on integrating emerging technologies into nursing curricula to improve educational outcomes.

A study by Zhang et al. (2023) explored the use of gamification in nursing education to enhance student engagement and learning outcomes. The researchers implemented a gamified learning platform for 100 nursing students, incorporating elements such as points, badges, and leaderboards to motivate participation. Results showed that students who engaged with the gamified platform reported higher levels of motivation and satisfaction, as well as improved knowledge retention compared to those in a traditional learning environment. The study highlighted the potential of gamification to create a more interactive and enjoyable learning experience, which is relevant to the current study's objective of assessing innovative teaching strategies in nursing education.

In a systematic review by Alshahrani et al. (2023), the impact of artificial intelligence (AI) on nursing education was examined. The review analyzed 15 studies that investigated the integration of AI tools in nursing curricula. Findings revealed that AI applications, such as virtual patient simulations and intelligent tutoring systems, significantly enhanced students' critical thinking and clinical decision-making skills. The review concluded that incorporating AI into nursing education can prepare students for the future of healthcare, where technology plays an increasingly vital role. This study supports the current research's aim to explore how emerging technologies can be effectively integrated into nursing curricula.

A study by Lee and Kim (2024) investigated the role of online learning communities in nursing education. The researchers surveyed 150 nursing students who participated in an online learning community designed to facilitate peer interaction and support. The findings indicated that students who engaged in the online community reported higher levels of satisfaction, collaboration, and knowledge sharing compared to those who did not participate. The study emphasized the importance of fostering a sense of community in online learning environments, which aligns with the current study's focus on enhancing student engagement through technology integration.

In a qualitative study by Nguyen et al. (2023), the experiences of nursing nurse educators in integrating technology into their teaching practices were explored. The researchers conducted interviews with 20 nurse educators to understand the challenges and successes they faced in adopting technology. Findings revealed that while nurse educators recognized the benefits of technology in enhancing learning, they also encountered barriers such as lack of training and institutional support. The study highlighted the need for comprehensive professional development programs to equip

educators with the skills necessary for effective technology integration, which is a key focus of the current study.

Patel and Desai (2023) examined the use of telehealth simulations in nursing education. The researchers implemented a telehealth training program for 80 nursing students, focusing on virtual patient interactions and remote care management. Results indicated that students who participated in the telehealth simulations reported increased confidence and competence in providing care through telehealth platforms. The study concluded that incorporating telehealth training into nursing curricula is essential for preparing students for the evolving landscape of healthcare delivery. This finding is particularly relevant to the current study's objective of assessing institution-based strategies for integrating emerging healthcare technologies into nursing education.

De Raeve (2024) the study assessed the mapping exercise conducted by the European Federation of Nurses to assess advanced practice nursing frameworks and developments across Europe. Using an online, cross-sectional questionnaire, data were collected from 35 national nurses' associations in March 2021. The findings revealed that there are significant variations in the definition, competencies, and scope of practice associated with advanced practice nursing across Europe. Results also noted that the differences were also noted in the educational and training requirements, with only 11 countries having national legislation establishing minimum educational standards. The study concluded that further research is needed to determine whether these variations result from context-specific models or if a standardized regulatory framework could enhance the growth of advanced practice nursing in Europe.

Saab et.al (2021) explored nursing students' perspectives of incorporating virtual reality in nurse education in a public university in Ireland among undergraduate nursing

students who were recruited using purposive and snowball sampling methods. Students (n = 26) participated in face-to-face semi-structured individual interviews and focus groups. Nursing students believed that virtual reality affords an innovative, fun, memorable, inclusive, and engaging means of learning. Many believed that virtual reality would complement current teaching and learning approaches, help build learners' confidence, and provide nursing students with a safe space for trial, error, and problem-solving. The use of virtual reality was recommended to practice various nursing skills and learn about human anatomy, physiology, problem-solving, and clinical decision-making. Nursing students acknowledged the cost of acquiring the technology as a major challenge to implementing virtual reality in nurse education and stressed the need for continuous face-to-face feedback. The researchers concluded that the findings of the study demonstrate that virtual reality technology has the potential to facilitate learning, complement current educational approaches, and provide nurse educators with innovative and engaging means of content delivery.

Harerimana, and Mtshali, (2021) explored the integration of e-learning in nursing education in Rwanda. The study emphasizes the need for innovative teaching strategies due to rapid technological advancements and the shift to online learning following the COVID-19 pandemic. Using Strauss and Corbin's grounded theory approach, data were collected from 40 participants, including nurse educators, students, ICT managers, and e-learning experts. The findings identified e-learning as a means to advance Rwanda's higher education agenda, widen access to nursing education, and promote student-centered learning. Its implementation was influenced by institutional support, e-readiness, partnerships, policies, and efforts to bridge the digital divide. The study concluded that adopting technology-enabled nursing education models could enhance

training quality, increase competent graduates, and create a sustainable learning network in a rapidly evolving healthcare environment.

Kithuci (2022) in the study aimed to develop a model for integrating Interprofessional Education (IPE) into the training of health professionals at the College of Health Sciences, JKUAT main campus. Using an explanatory sequential mixed-methods design, data were collected from 71 respondents across five schools in Phase 1, followed by focus group discussions (FGDs) with nurse educators and students, and key informant interviews (KIIs) with college leadership in Phase 2. Phase 3 involved developing and validating an IPE integration model with input from seven experts. Quantitative data were analyzed using SPSS Version 25.0, while qualitative data were processed using NVIVO Version 12. Findings indicated that nurse educators had good knowledge of IPE, with 59% defining it as shared learning. However, while overall attitudes toward IPE were positive, attitudes toward IPE in academic settings were negative. Nurse educators members willing to support IPE initiatives were 2.3 times more likely to have positive attitudes. Identified challenges to IPE integration included curricular rigidity, regulatory body demands, scheduling constraints, professional stereotypes, and limited resources. To enhance IPE adoption, the study recommended early introduction of IPE in training, blended learning approaches, shared courses across disciplines, joint research projects, and embedding IPE into curricula. A prescriptive model summarizing key content areas, strategies, and modalities for IPE integration was developed. The study further suggested sensitization training, the appointment of IPE champions, and synchronization of curricula to facilitate sustainable IPE implementation.

The integration of emerging healthcare technologies into nursing education is essential for preparing future nurses to meet the demands of a rapidly evolving healthcare

landscape. A study by Kearney et al. (2022) investigated the impact of mobile health (mHealth) applications on nursing students' learning outcomes. The study involved 150 nursing students who utilized mHealth applications for clinical simulations and patient management scenarios. The findings indicated that students who engaged with mHealth tools demonstrated improved clinical decision-making skills and higher levels of confidence in their abilities. The study highlighted the importance of incorporating technology into nursing curricula to enhance learning experiences and prepare students for real-world challenges. Furthermore, the research emphasized the need for nurse educators training in technology integration to ensure effective implementation. This aligns with the current study's objective of assessing institution-based strategies that enhance nursing curriculum implementation, as it underscores the necessity of equipping educators with the skills to effectively integrate technology into their teaching practices.

In a similar aspect, a study by Lee et al. (2023) explored the use of augmented reality (AR) in nursing education, focusing on its effectiveness in teaching anatomy and physiology. The research involved 80 nursing students who participated in AR-enhanced lessons compared to a control group receiving traditional instruction. The results revealed that students exposed to AR demonstrated significantly higher retention rates and engagement levels. The study concluded that AR technology not only enhances understanding of complex concepts but also fosters a more interactive learning environment. This finding is particularly relevant to the current study, as it highlights the potential of innovative technologies to improve nursing education outcomes. By integrating AR into the nursing curriculum, educators can create immersive learning experiences that cater to diverse learning styles, ultimately enhancing students' clinical competencies and preparedness for practice.

Another relevant study by Thompson et al. (2023) examined the role of telehealth training in nursing education, particularly in light of the COVID-19 pandemic. The study involved 120 nursing students who participated in a telehealth training program designed to enhance their skills in virtual patient interactions. The findings indicated that students who underwent telehealth training reported increased confidence in conducting virtual assessments and managing patient care remotely. The study emphasized the importance of incorporating telehealth training into nursing curricula to prepare students for the growing demand for remote healthcare services. This aligns with the current study's objective of assessing institution-based strategies, as it underscores the need for nursing programs to adapt to changing healthcare delivery models. By integrating telehealth training, nurse educators can ensure that graduates are equipped with the necessary skills to thrive in a technology-driven healthcare environment.

A study by Patel et al. (2024) focused on the effectiveness of simulation-based learning in nursing education, specifically examining high-fidelity simulation labs. The research involved 200 nursing students who participated in simulation scenarios designed to replicate real-life clinical situations. The findings revealed that students who engaged in high-fidelity simulations demonstrated improved critical thinking skills and clinical judgment compared to those who received traditional instruction. The study concluded that simulation-based learning is a valuable pedagogical approach that enhances students' preparedness for clinical practice. This finding is particularly relevant to the current study, as it highlights the importance of incorporating simulation into nursing curricula to improve clinical competencies. By utilizing high-fidelity simulations, nurse educators can create realistic learning environments that foster skill development and confidence among students, ultimately leading to better patient outcomes.

In a study conducted by McCoy et al. (2021), the impact of clinical simulation on nursing students' preparedness for real-world practice was examined. The researchers utilized a quasi-experimental design involving 150 nursing students across three institutions. The study found that students who participated in high-fidelity simulation training reported feeling more confident and competent in their clinical skills compared to those who received traditional clinical training. The findings emphasized the importance of integrating simulation into nursing curricula to enhance students' readiness for practice. However, the study did not explore the institutional barriers that may hinder the implementation of simulation-based learning, which the current study aims to address by investigating the support required from educational institutions.

Ziba, Yakong, and Ali, (2021) conducted a study to examine the experiences and perceptions of nursing students regarding clinical competence teaching and learning in Ghana. This study employed a qualitative descriptive research design using maximum variation purposive sampling, 55 participants were 40 diploma nursing students and 15 post-registration nurses were recruited from six research sites for focus group discussions. Data were analyzed using a thematic framework approach with ATLAS.ti software, revealing three key themes: institutional factors in nursing education, challenges in clinical placement design and implementation, and obstacles in clinical teaching and learning. Findings recommended that overreliance on clinical placements and teacher-centered teaching approaches limit the development of clinical competence. The study recommended a curriculum review incorporating evidence-based simulation modalities and increased investment in nursing education to enhance clinical competency training in Ghana. The study was conducted in Ghana, which has different healthcare and educational policies compared to Kenya. Also, the study used qualitative methods but lacked quantitative validation of findings. The current study

will assess both training and policy-level factors influencing curriculum implementation in Kenya, using a mixed-methods approach to enhance the reliability and applicability of findings.

Mokua et al. (2021) conducted a study to evaluate the effectiveness of simulation-based learning in enhancing clinical skills among nursing students in Kenya. The study involved 120 nursing students from three different training institutions, utilizing a quasi-experimental design. Pre- and post-tests were administered to assess students' clinical competencies before and after the simulation training. Results indicated a significant improvement in students' clinical skills, with a 30% increase in competency scores post-intervention. The study highlighted the importance of integrating simulation into nursing curricula to bridge the gap between theoretical knowledge and practical skills. However, it did not explore the institutional support required for implementing such innovative teaching methods, which the current study aims to address by examining the role of institutional frameworks in supporting simulation-based learning.

Kaisara, and Bwalya, (2021) employed a phenomenographic approach to study the E-learning challenges faced by students during COVID-19 in Namibia. Further, the data was collected using 38 semi-structured interviews and three focus group discussions with nursing students, lecturers, clinical educators, and nurses at teaching hospitals. Findings revealed four levels of involvement: initiating, supporting, becoming part of, and owning the teaching and learning role, with variations in responsibility, priorities, and collaboration. The study recommended the need for greater accountability and stronger partnerships between theoretical and clinical training environments to enhance nursing education, ensuring that all stakeholders recognize their roles and work collaboratively to improve student learning outcomes. This study, however, focused on

individual barriers to e-learning in Namibia but did not consider institution-specific challenges in curriculum implementation. The current study will mitigate this by assessing institution-based strategies that enhance nursing curriculum implementation, including policies, instructional methods, and administrative support.

A study carried out in Tanzania to assess the experience of nurse educators on the implementation of the competency-based curriculum for nursing and midwifery programmes in Tanzania using a mixed-method study design found that the nurse educators did not understand the competency-based curriculum. Majority struggled with differentiating credit hours from notional hours, and some lacked clarity on core CBC elements. Some nurse educators had difficulty preparing lesson plans aligned with CBC, they were not able to translate CBC theory into classroom and skills lab activities. Most of the nurse educators had six years' experience of teaching; however, many educators could not interpret the scheme of work that should guide lesson planning and assessment. The findings further revealed limited use of participatory teaching methods, 57% used simulation compared to 97% using the lecture method. The researchers noted that overcrowded classrooms, lack of teaching resources and equipment, and insufficient training and mentorship hampered the implementation of CBC curriculum in the selected nurse and midwifery training institutions. In conclusion, the researchers stated that without a strong foundation in curriculum interpretation, lesson planning, and teaching methodology, CBC goals will not be met (Vumilia et.al, 2020)

Rutledge et al. (2021) described the development of telehealth competencies for education and practice in United States. The study used the Four P's of Telehealth framework planning, preparing, providing, and performance evaluation a modified

Delphi technique was employed to identify, develop, and assess these competencies. The competencies were structured around telehealth domains, expected activities, and outcomes, demonstrating their relevance in guiding curriculum development, practice, and future research. The study concluded that aligning telehealth education with the Four P's framework would equip learners with the necessary skills to take on leadership roles in telehealth implementation, delivery, and continuous improvement.

A study by Ndung'u et al. (2024) investigated the role of simulation-based learning in enhancing clinical skills among nursing students in Kenya. Utilizing a quasi-experimental design, the researchers compared the clinical performance of students who participated in simulation training with those who received traditional instruction. The findings revealed that students exposed to simulation-based learning demonstrated significantly improved clinical skills and confidence levels. However, the study also noted challenges such as limited access to simulation facilities and the need for nurse educators training in simulation pedagogy. The authors recommended increased investment in simulation resources and nurse educators development to optimize the benefits of simulation in nursing education.

In a comparative study by Mwangi et al. (2023), the effectiveness of different teaching methodologies in nursing education was assessed across several institutions in Kenya. The researchers employed a quasi-experimental design, comparing traditional lecture-based teaching with problem-based learning (PBL) and simulation-based learning. The findings indicated that students exposed to PBL and simulation-based learning demonstrated significantly higher levels of engagement, critical thinking, and clinical competence compared to those in traditional lecture settings. The study emphasized the need for nursing programs to adopt innovative teaching methodologies that align with

contemporary educational practices and better prepare students for real-world challenges in healthcare.

A systematic review by Otieno et al. (2023) focused on the integration of technology in nursing education in Kenya. The review analyzed 15 studies that explored the use of e-learning platforms, mobile applications, and virtual simulations in nursing curricula. The findings revealed that while technology has the potential to enhance learning experiences and accessibility, many institutions face challenges such as inadequate infrastructure, limited internet access, and resistance to change among nurse educators. The authors called for strategic investments in technology and training for educators to effectively integrate digital tools into nursing education, thereby improving curriculum implementation and student outcomes.

In a systematic review of literature, Harerimana et al., (2022) explored the role of nursing informatics embedded in the undergraduate nursing curricula in Australia before COVID-19 - the study examined 26 articles from multiple databases, including CINAHL Plus, EMCARE, MEDLINE Ovid, Scopus, ERIC ProQuest, and Web of Science. The findings revealed that few studies directly addressed nursing informatics as a distinct concept, with only two studies detailing curriculum development approaches, such as educational scaffolding and the Community of Inquiry Framework. Instead, most research focused on the use of nursing informatics tools in teaching and learning, employing strategies like online learning, blended learning, and technology-enabled simulations. The review also found that the key barriers to integration included inconsistencies in informatics content, a lack of guidelines and frameworks, and poor digital literacy among students and educators. This review established a foundational understanding of how nursing informatics was incorporated into nursing education in

Australia before the pandemic, highlighting a predominant emphasis on technological tools rather than structured curricular integration.

Evidence review done by Koukourikos et.al, (2021) in Bosnia, revealed that simulation serves as a powerful teaching and training method in the education of healthcare professionals. It facilitates the acquisition and enhancement of indispensable knowledge, practical skills, and professional values at all stages of healthcare training. By involving students in realistic clinical scenarios that closely replicate actual hospital environments, simulation enables them to develop competence and confidence in a safe, controlled setting. This practical approach to learning has been shown to significantly reduce the chances of clinical errors when students transition to real-world patient care. Simulation equipment and the operation of a modern laboratory demand quite large expenditures. Evidently, most of the nurse training institutions lack simulation equipment due to inadequate funding; consequently, nursing students have fewer opportunities to develop and refine essential clinical skills before entering real-world healthcare settings

Lastly, a study by Johnson et al. (2023) investigated the impact of online collaborative learning platforms on nursing students' engagement and learning outcomes. The study involved 100 nursing students who participated in an online collaborative project aimed at addressing a healthcare issue. The findings indicated that students who engaged in collaborative online learning reported higher levels of engagement, satisfaction, and knowledge retention compared to those who participated in traditional learning methods. The study emphasized the importance of fostering collaboration and communication among nursing students, particularly in an increasingly digital learning environment. This aligns with the current study's objective of assessing institution-based strategies, as it highlights the need for nursing programs to incorporate

collaborative learning approaches that leverage technology. By integrating online collaborative platforms, nurse educators can enhance student engagement and prepare graduates for effective teamwork in diverse healthcare settings.

2.2 Summary of Research gaps identified

The analysis of the reviewed studies reveals significant results in the outlined study objectives. These gaps include contextual, methodological, and empirical dimensions, which were appraised. Contextually, it is noteworthy that numerous studies have concentrated on diverse high income settings such as Canada (Dabravolskaj et al., 2020), Sweden (Richter et al., 2022), and the UK (Walsh et al., 2020), and a few in low-and-middle-income settings such as Ghana (Adomako et al., 2024), including Kenya (Kipkulei et al., 2022). This reflects a variety of environmental and cultural factors that influence research findings. This current study aims to address some of these identified gaps, offering new insights and perspectives that enhance the understanding of the topic at hand. By bridging these gaps, the research not only contributes to the body of knowledge but also fosters a more refined understanding of different contexts and methodologies employed across various studies. However, it is noteworthy to acknowledge that high income settings may have different policies in operations, limiting their applicability to local context such as Kenya's nursing education.

In Kenya, some studies examined broader health programs (Muriithi, 2020) or workplace resilience (Kemei & Etowa, 2021) rather than curriculum implementation. Methodologically, qualitative and secondary data approaches (Adomako et al., 2024; Walsh et al., 2020) restrict generalizability. The current study fills these gaps by employing a mixed-methods design, focusing on diploma nurse training curriculum implementation.

Several studies have explored learner-based challenges in curriculum implementation. For instance, Basir et al. (2021) identified key e-learning barriers but did not examine institutional challenges in nursing education; Cant et al. (2021) highlighted assessment-related challenges but overlooked broader regulatory factors; Woo and Newman (2020) focused on new nurses' transitions rather than student learning challenges and/or difficulties; Gassas (2021) examined the knowledge-practice gap but lacked primary data from students; Zhang et al. (2022) and Ziba et al. (2021) studied clinical learning environments, thereby not highlighting the broader aspects of curriculum implementation. While Najjuma (2024) and Juma et al. (2022) highlighted aspects of curriculum implementation, the context was not specific to nursing education.

Regarding the institution-based strategies, several studies have explored various educational strategies in healthcare and general education, revealing key gaps relevant to nursing curriculum implementation - Dempsey et al. (2024) highlighted limited awareness of Universal Design for Learning (UDL) in anatomy curricula, while Mlambo et al. (2021) found a lack of standardized lifelong learning strategies in U.S. nursing education. In Nepal, Bhat et al. (2024) emphasized the benefits of reflective writing in nursing but did not address the broader institutional strategies in curriculum implementation.

In Africa, Munangatire and McInerney (2022) examined stakeholder roles in Namibian nursing education; and Mustafa et al. (2022) evaluated short courses for healthcare educators in Sudan. Although these authors highlight key issues in nurse training, these were not specific to curriculum implementation strategies.

In a quasi-experimental design, comparing traditional lecture-based teaching with problem-based learning (PBL) and simulation-based learning in Kenya, Mwangi et al.

(2023), highlighted the effectiveness of different teaching methodologies in nursing education. The study recommended the need for nursing programs to adopt innovative teaching methodologies that blend with existing educational practices to effectively prepare students for professional practice. Similarly, a systematic review (analysis of 15 studies) by Otieno et al. (2023) on the integration of technology in nursing education in Kenya highlighted that technology has the potential to improve learning experiences. However, the authors (Otieno et al., 2023) noted that many institutions face challenges such as inadequate infrastructure, limited internet access, and resistance to change among nurse educators, citing the need for strategic investments in technology and training for educators to effectively integrate digital tools into nursing education so as to improve curriculum implementation and student teaching and learning outcomes.

In view of the above gaps, this study sought to holistically evaluate diploma nurse-training curriculum implementation in selected institutions.

2.3. Theoretical framework

The theoretical framework is defined as a blueprint of the research that is based on an existing theory in the particular field of inquiry, which the researcher adopts and uses as a foundation upon which the research is developed (Adom, Joe & Hussein, 2018).

The theoretical framework for this study stems from the works of John Dewey's theory, which asserted that knowledge is constructed based on personal experiences and hypotheses of the environment. John Dewey stressed the significance of hands-on or experiential learning and further argued that the lecturer in the classroom should act as a facilitator and guide. He also argued that the lecturer should observe students' interests and help them acquire problem-solving skills. Regarding the curriculum, John Dewey's theory posits that the curriculum should be relevant to students' lives and

further opined that the curriculum should focus on connecting multiple subjects in a multidisciplinary setting that is aimed at eventually producing students who would be able to deal effectively with the contemporary world (Schweisfurth, 2013). This theory is applicable for this study as it does not focus only on the highest-potential students but emphasizes making sure that all students (or as many as possible) achieve essential competencies to allow them to practice in dynamic environments. It is also concerned with different tools, targets, and process indicators (Rai and Lama, 2020).

2.3.1 The Principles of John Dewey's experiential learning theory

According to John Dewey's experiential learning theory, there are four key principles: First learning occurs through hands-on experiences, second, learning requires active engagement, third, learning should take place within a social context, and fourth, reflecting on experience is essential for achieving meaningful learning outcomes.

i. Learning by experience or 'hands-on'

John Dewey discouraged passive learning and claimed that learners learn best through active participation rather than inactive reception of information. This means engaging in hands-on activities, projects, and real-life problem-solving tasks. He postulated that there is a symbiotic relationship between experience and education. This is because experience that require a hands-on approach facilitates the learners to obtain information that will contribute to building knowledge and new skills.

ii. Learning requires active engagement,

John Dewey asserted that for tangible learning to occur, it is essential for learners to actively engage in the educational process. This engagement is facilitated through their

interaction with the environment and participation in activities designed to enhance their skills development. Such involvement fosters deeper comprehension and cultivates critical thinking and problem-solving abilities essential for holistic educational advancement.

iii. Learning should take place within a social context.

John Dewey emphasized that learning should be contextual, meaning that knowledge should be connected to real-world situations and relevant to the learners' lives. He believed that learning process is fundamentally social, meaning that it flourishes within a collaborative environment where interactions with peers and instructors enhance the development of knowledge and skills.

iv. Reflecting on experience to drive meaningful learning outcomes.

Reflecting refers to looking back at previous experiences, analyzing them, and drawing lessons or insights. By reflecting, the learner can identify patterns, understand the impact of their actions, and discover emotions related to those experiences. Additionally, reflection nurtures personal growth and development, as it encourages a deeper understanding of oneself and improves critical thinking skills. Eventually, the process of reflecting transforms past experiences into powerful tools for learning and improvement.

2.3.2. Application of John Dewey's experiential learning theory in diploma nurse training curriculum implementation.

Although John Dewey's experiential learning theory dates back to the late 19th Century, it is still applicable to the current educational practices, and so it is appropriate for use in this study.

- i. Learning by doing. KRCHN curriculum, diploma program implementation involves a series of sequences in the acquisition of knowledge and the development of nursing practice skills. This process involves nursing students acquiring knowledge through classroom teaching, followed by learning in the skills lab through demonstrations and return demonstrations. The development of the actual skills occurs in the clinical placement sites, where the nursing students perform nursing procedures under instruction and close supervision by the qualified nurses and nurse educators. By repeatedly performing these procedures, the students perfect their nursing clinical skills progressively and eventually attain competence, which was one of the focus area for this study.
- ii. Active engagement for nursing students is fundamental to their learning process, as articulated by John Dewey. For meaningful learning to occur, nursing students must actively participate both in the classroom activities as well as clinical practical sessions within their environment, which in this case is the clinical placement sites. This engagement is facilitated by having the nursing students engage in specific progressive activities in the classroom as well as clinical placement sites.
- iii. Contextual learning John Dewey articulated the concept that effective learning must be contextualized, positing that knowledge should be intrinsically linked to real-world experiences and pertinent to the learners' lives. For nursing

students, the learning process is fundamentally social because they learn within a collaborative environment where interactions among peers and instructors foster the development of knowledge and skills, this was relevant in determining the scope of this study, where qualitative and quantitative data was collected from nursing students, nurse educators as well as nurse managers.

- iv. Regarding reflection, engaging in reflective practice to foster significant learning outcomes necessitates a systematic examination of prior experiences. This process involves not only revisiting and recounting past events but also critically analyzing them to derive meaningful insights and lessons. This is applicable to this study because, by scrutinizing the details of their experiences, nursing students can identify patterns, recognize achievements, and identify opportunities for improvement. Consequently, such reflective activities serve as influential mechanisms for changing experiential learning into practical knowledge, thereby advancing both personal and professional growth.

2.3.3 . Limitation of application of John Dewey's experiential learning theory in diploma nurse training curriculum implementation

The application of John Dewey's experiential learning to nursing education is basically hindered by the high-stakes demands of patient safety and professional regulation. Although Dewey's philosophy champions discovery, nursing pedagogy must enforce behaviorist mastery and standardized protocols to prevent the lethal consequences of clinical error. Additionally, the requirement for extensive pre-clinical knowledge in sciences like pharmacology necessitates a theoretical foundation that precedes practice, as premature integration leads to fragmented technical understanding. Resource limitations and the prevailing nurse educator shortage further necessitate a shift toward simulation and competency based education. These structured frameworks effectively

prioritize measurable technical proficiency over the qualitative moral growth and student led exploration central to Dewey's educational vision.

2.4 Conceptual framework

Conceptual framework is a structure that the researcher believes best explains the progression of the phenomenon in question, and it brings about the link between the concepts, variables, and theories adopted for the study (Adom, Joe & Hussein, 2018). For this proposed study, the conceptual framework was constructed by the researcher as depicted in **Figure 2.1**. In the diagram, the dependent variables are teaching resources, the level of preparedness of the nurse educators, capacity of the clinical placement sites to support nursing students' skills, and integrating emerging technologies. The dependent was competent Kenya Registered Community Health Nurse. The intervening variables are the Nursing Council of Kenya and Ministry of Health guidelines. Nurse training is a regulated course, therefore, the regulatory body and the ministry of health play crucial role. Conceptual framework depicts that successful implementation of KRCHN curriculum require adequate teaching and learning resources, well trained and prepared nurse educators, clinical placement sites with capacity to support skills development among nursing students, and integration of modern technology in its delivery.

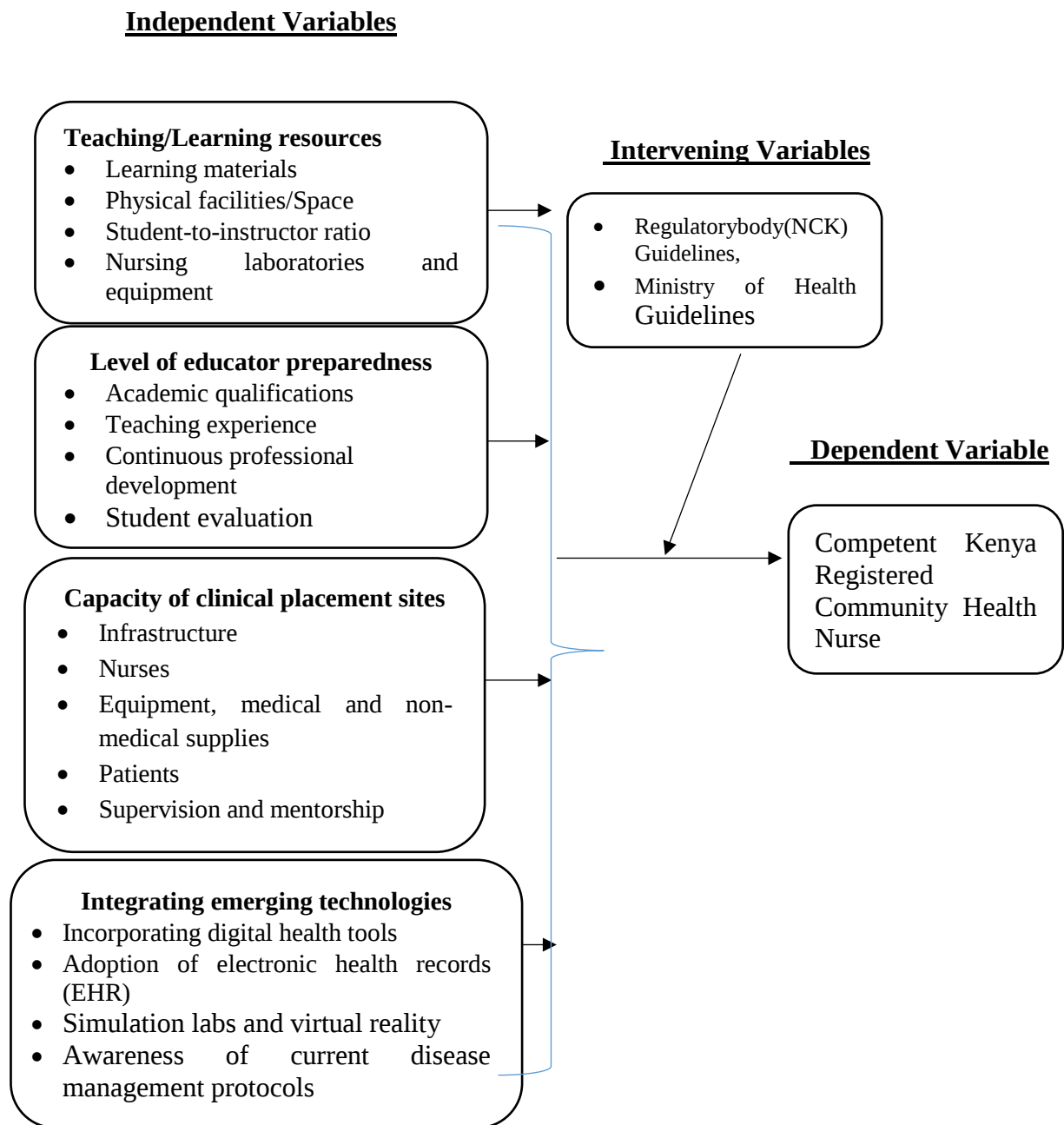


Figure 2.1: Conceptual Framework

Source: Self-conceptualization (2025)

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Introduction

This chapter describes the methodological approach employed in the conduct of the study. It encompasses an exposition of the strategies utilized in the research process, including a detailed discussion of the philosophical worldview underpinning the study, the overarching research design, and the specific research methods. Additionally, this chapter provides a comprehensive description of the study site, the target population, outlining the sampling procedures implemented. Further, the chapter gives details of the instruments and procedures used for data collection, explains the data analysis process, and addresses the ethical considerations that guided the research. data collection instruments and procedure, data analysis process, and ethical considerations.

3.1 Research philosophical worldview

A philosophical worldview in research encompasses the foundational beliefs and assumptions that underpin the inquiry process. This framework influences how researchers conceptualize and interpret reality as well as guides the generation of knowledge and the selection of the methodologies appropriate for investigation (Creswell & Plano Clark, 2011). The aforementioned paradigms significantly impact every stage of research design and are essential for maintaining internal coherence among the research problem under investigation, the formulated research questions, and the methodologies employed. The predominant philosophical worldviews include positivism, post-positivism, constructivism, interpretivism, critical realism pragmatism. Each of these paradigms embodies distinct ontological and epistemological stances, thereby guiding the researchers in their inquiry processes and

shaping the interpretation of empirical data (Žukauskas, Vveinhardt & Andriukaitienė, 2018). Recognizing and articulating one's research philosophy is essential for ensuring coherence and alignment in research design, as well as for critically assessing the appropriateness, strengths, and limitations of different methodological approaches. The philosophical research worldviews are highlighted and summarised hereafter:

3.1.1 Positivism

Positivism is a research philosophy grounded in the belief that reality is objective, singular, and can be observed and measured through scientific methods (Walekhwa & Suge, 2023). It emphasizes the collection of objectives, quantifiable data, often relying on structured tools and statistical analysis to test hypotheses and draw conclusions. Positivist research is closely aligned with the natural sciences and has been widely adopted in the social sciences, particularly in fields that value measurable outcomes and generalizable findings. While this approach provides clarity and precision, it has been critiqued for its limitations in capturing the complexity and subjectivity inherent in human behavior and social interactions.

3.1.2 Post-positivism

Post-positivism builds upon the foundations of positivism but introduces a more critical and detailed understanding of the nature of reality and knowledge. Scholars operating within a post-positivist paradigm strive to maintain objectivity and rigor in their research, often using structured methodologies and quantitative methods. However, unlike positivists, post-positivists acknowledge that absolute objectivity is unattainable. They argue that all observation is fallible and theory-laden, and that researchers are influenced by their own contexts, biases, and limitations of human cognition. Post-positivists believe in an objective reality, but they maintain that our understanding of it

is always partial and subject to revision. As a result, post-positivist research often incorporates critical reflection, triangulation, and falsifiability to enhance the credibility of findings. This paradigm is widely used in social science research where a balance between scientific rigor and human complexity is necessary (Okumu et.al, 2022).

3.1.3 Constructivism

Constructivism in education is a theory that suggests that learners do not passively acquire knowledge through direct instruction, they construct their understanding through experiences and social interaction, integrating new information with their existing knowledge (Walekhwa & Suge,2023).

3.1.4 Interpretivism

Interpretivism, also known as the interpretive research philosophy, contrasts with positivism by prioritizing the understanding of meaning and the subjective experiences of individuals. It posits that reality is socially constructed and best understood through the perspectives of those experiencing it. Interpretivist researchers often employ qualitative methods such as interviews, focus groups, and participant observation to gather rich, contextual data. This philosophy is particularly prevalent in the social sciences, where understanding the nuances of human behavior, culture, and social contexts is critical. Interpretivism acknowledges the active role of the researcher in interpreting data and emphasizes the co-construction of knowledge between researcher and participants (Okumu et.al, 2022)

3.1.5 Critical realism

Critical realism offers a middle ground between positivism and interpretivism. It accepts that an objective reality exists independently of human perception, but also

recognizes that our understanding of this reality is shaped by social, cultural, and historical contexts. Critical realism posits a stratified reality consisting of the empirical (experiences), the actual (events), and the real (causal mechanisms). Researchers adopting this philosophy often use a combination of qualitative and quantitative methods to investigate both observable outcomes and the deeper structures or mechanisms that produce them. This makes critical realism especially valuable in exploring complex social systems and informing both theoretical insight and practical intervention.

3.1.6 Pragmatism

Pragmatism is a flexible, results-oriented research philosophy that emphasizes practical solutions to research problems over strict adherence to a single ontological or epistemological perspective. Pragmatist researchers prioritize what works in a given context and often use mixed methods approaches, integrating both qualitative and quantitative techniques to comprehensively address research questions. This philosophy is particularly suited to applied research and studies with real-world implications. Pragmatism allows for adaptability in method selection, encouraging researchers to draw from diverse philosophical traditions and methodological tools in pursuit of meaningful and actionable findings (Walekhwa & Suge, 2023)

3.1.7 Philosophical stance of the study

Following the critical review of the above research paradigms, the chosen research philosophical approach thought to be most suitable for this study was pragmatism philosophy. Pragmatism is well-suited for research that integrates both qualitative and quantitative approaches, as it focuses on practical problem-solving and allows

flexibility in research design. This study sought to evaluate the implementation of diploma nurse training curriculum by examining multiple factors, including teaching resources, nurse educators level of preparedness, the capacity of the clinical placement sites to facilitate clinical learning, and the integration of modern technology in teaching and learning. Given the complexity of these factors, a single philosophical stance (either positivism or interpretivism) was not sufficient to capture the depth of the study.

Pragmatism was deemed appropriate because it recognizes that both objective (quantitative) and subjective (qualitative) perspectives contribute to a comprehensive understanding of curriculum implementation. The quantitative aspect of the study involved measuring structured variables such as adequacy of teaching resources. This aligned with the positivist view, which assumes that reality is measurable and can be studied objectively. Conversely, the qualitative component explored the perspectives of nurse educators and students, and nurse managers through interviews and open-ended survey questions. This aligns with interpretivism, which acknowledges the role of human experience and perception in shaping reality.

Additionally, pragmatism was justified in this study because it emphasizes problem-solving and real-world application, which are essential in evaluating the effectiveness of curriculum implementation. The study sought to provide actionable recommendations for improving nursing education, making a practical and flexible research approach necessary. By using pragmatism, the study was able to integrate multiple sources of data, enhance validity through triangulation, and generate findings that were both theoretically sound and practically relevant.

Pragmatism, which underpins this study, emphasizes practical solutions to real-world problems. It is a worldview that prioritizes the research problem over strict adherence

to any one philosophical tradition or method. Developed from the works of John Dewey, Charles Peirce, and William James, pragmatism holds that knowledge is derived from experience and is judged by its usefulness in addressing concrete issues (Creswell, 2009; Hall & Roussel, 2014). This approach affirms the compatibility of both quantitative and qualitative methods and supports methodological pluralism as a means of producing rich, actionable insights (Patton, 2015).

Given the multifaceted nature of this study, which sought to assess the adequacy of teaching resources, evaluate nurse educators' level of preparedness, examine the capacity of clinical sites to support students' clinical skills development, and determine the integration of emerging healthcare trends in the implementation of KRCHN curriculum, pragmatism provides an ideal philosophical foundation. Each of these objectives requires both objective measurement and subjective interpretation to fully understand the structural, pedagogical, and regulatory dynamics influencing curriculum effectiveness.

For instance, quantitative data gathered through structured questionnaires offers measurable insights into resource adequacy and educator competencies, while qualitative data from Key Informant Interviews (KII) and Focus Group Discussions (FGDs) provides contextual understanding of how curriculum practices are interpreted and applied across training institutions in Kericho and Bomet counties. Pragmatism supports this integrative logic, recognizing that complex educational phenomena are best understood through the convergence of numeric data and narrative evidence (Tashakkori & Teddlie, 2010).

By adopting pragmatist approach, this study aimed at comprehensively examining the intricate interplay among institutional resources, nurse educators' preparedness, the

capacity of the clinical placement sites to support students' nursing clinical skills development, and the integration of emerging medical trends and modern technology in the implementation of the KRCHN curriculum, diploma program. Furthermore, pragmatism is fundamentally aligned with the objectives of the study, which sought to generate evidence-based recommendations capable of directly influencing policy reforms, curriculum modification, and strategic investments in nursing education. This alignment underscores the commitment to producing actionable insights that directly impact the evolution of educational practices and policies in the nursing field.

3.2 Research design

Research design serves as a blueprint that systematically outlines the procedures for data collection, measurement, and analysis in a study (Kothari, 2004). This study adopted a concurrent mixed-methods design, integrating both quantitative and qualitative approaches simultaneously to provide a comprehensive understanding of diploma nurse training curriculum implementation in selected nurse-training institutions in Bomet and Kericho Counties. The mixed-methods approach was chosen because it allowed for the collection of complementary data that, when triangulated, enhanced the reliability and depth of the study findings. This design aligns with the pragmatist philosophical worldview, which supports methodological pluralism to best address complex research problems (Hall & Roussel, 2014).

In this study, both qualitative and quantitative strands were given equal priority, implying a [QUAN + QUAL] parallel design. Quantitative data were gathered through structured questionnaires administered to lecturers, senior nursing students, and nurse managers to assess variables such as adequacy of teaching resources, competence of nurse educators, clinical training exposure, and integration of emerging healthcare

technologies. The design facilitated statistical measurement of these variables, allowing the researcher to describe patterns and infer relationships. In contrast, qualitative data was collected using Key Informant Interviews (KIIs) and Focus Group Discussions (FGDs), enabling deeper exploration into participants' lived experiences, contextual realities, and perceptions regarding the implementation of the KRCHN curriculum, diploma program.

The qualitative aspect followed a phenomenological and narrative inquiry approach. Phenomenology was employed to understand how nurse educators, students, and managers interpret their roles and challenges in curriculum implementation. Narrative inquiry was used to explore individual stories and institutional experiences that shape and influence perceptions and behaviors. This allowed the study to capture the richness and complexity of the human experiences behind the quantitative measures.

The quantitative aspect of the study adopted a descriptive cross-sectional design, enabling the researcher to describe the current state of curriculum implementation at a specific point in time across multiple institutions. This approach was useful in obtaining statistically generalizable findings regarding curriculum components and stakeholder involvement.

Mixing of the two strands was achieved during the interpretation phase, where findings from qualitative and quantitative analyses were compared, contrasted, and integrated to enhance meaning. This convergent parallel mixing strategy facilitated the triangulation of results, thus strengthening the validity of the study. Both strands were accorded equal importance in shaping the interpretation of the results and drawing conclusions.

3.3 Study area

The research was undertaken within Bomet and Kericho counties, situated in the South-Rift region of the former Rift Valley Province. The South Rift region includes Kericho, Bomet and Narok Counties. Kericho County covers an area of 2,479 square kilometers and consists of six sub-counties. The county borders Uasin Gishu to the northwest, Baringo to the north, Nandi to the northwest, Nakuru to the east, Bomet to the south, and shares southwestern borders with Nyamira and Homa Bay, and Kisumu County to the west. The selected hospitals and diploma nurse training institutions in Kericho County included: Kericho County Referral Hospital (Level 5), with a bed capacity of 250, and that serves as the main referral center for the county, which has a population of approximately 970,000; Kapkatet Sub-County Hospital and Kapkatet Campus Kenya Medical Training College; and Africa Inland Church Litein Hospital (Level 5 faith-based hospital) with a 240-bed capacity.

Bomet County has a population of approximately 875,689, and is bordered by Kericho County to the west, Nakuru County to the northwest, and Narok County to the southeast. The selected facilities in Bomet County included: Longisa County Referral Hospital (Level 4) and Bomet KMTTC; Tenwek Hospital (Level 6 hospital with a 400-bed capacity) and Tenwek Hospital College of Health Sciences; and St. Clare's Kaplong Mission Hospital, a 220-bed capacity hospital, and St. Clare's Kaplong School of Nursing.

The study sites were the selected hospitals and nurse-training institutions in Bomet and Kericho Counties in Kenya. The researcher purposively selected County Referral, Sub-County, and faith-based hospitals that have nurse-training institutions affiliated with them because they had desired characteristics, implementation of Kenya Registered Community Health Nursing curriculum, diploma program..

3.4 Target and study population

The target population comprised of all health facilities in Bomet and Kericho counties which support diploma nurse training. The study population comprised of Level 4 to 6 hospitals with affiliated diploma nurse training institutions in the counties as highlighted in Section 3.3 above. The study population included Nurse educators, senior Student nurses, and Principals of the training institutions, and nurse managers in the selected hospitals. The participation of Principals from selected nurse training institution was considered critical in providing leadership perspectives on the educational framework/ curriculum implementation. The Nurse managers from selected health facilities were also key since their insights were considered valuable for understanding the practical implications of the curriculum implementation in clinical settings. Seniors nursing students were selected due to their experience with curriculum implementation in classroom and clinical placement sites, they provided valuable information of the implementation of the curriculum.

3.4.1 Inclusion criteria

The inclusion criteria for the study included: all lecturers, all Principals and senior nursing students from the selected nurse-training institutions, and nurse managers from selected hospitals.

3.4.2 Exclusion criteria

The exclusion criteria were: nurse educators, principals, nurse managers, and senior nursing students who were absent at the time of data collection, for example those who were on leave.

Table 3.1 Study population & distribution

County	Hospitals & Nurse training institutions	Senior student nurses	Nurse educators	Principals	Nurse managers
Bomet	Bomet KMTC & Longisa County Referral	78	12	1	1
	Kaplong Mission Hospital & St. Claire Kaplong Nursing School	52	8	1	1
	Tenwek Hospital & College of Health Sciences	69	10	1	1
Kericho	Kericho County Referral. Hospital & Kapkatet Subcounty Hospital Kapkatet KMTC	78	9	1	2
	Litein Mission Hospital & Litein MTC	59	6	1	1
	TOTAL (N)	336	45	5	6

3.6 Sampling techniques

Sampling is a technique that involves selecting a representative sample from a large population for investigation and generalization of findings to a larger sample. According to Kothari (2017), sampling is a statistical process of selecting a subset (sample) from a population of interest to make observations and statistical inferences about the population. When conducting research, studying the entire population of interest is often infeasible, time-consuming, and resource-intensive. Therefore, researchers use sampling procedures to select a representative sample for observation and analysis.

For the student participants simple random sampling method was used to pick the eligible participants using a set of papers marked 1 and 2 whereby 1=eligible participant and 2=non-eligible participant with replacement in case an initially eligible participant

declined consent. The replacement was done from the initially non-eligible participants until the desired sample size was attained for each student site.

Purposive sampling was used for the other groups of participants (principals, nurse educators and nurse managers).

3.5 Sample size determination and distribution

To determine the sample size for the senior nurse students, Taro Yamane Formula was used, with 95% confidence interval and an error margin of 5% as outlined below. This formula was appropriate due to the finite population of senior nursing students in the selected nurse-training institutions.

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

Where: n = sample size required, N = Number of people in the population [in this case, the 336 nursing students], e = allowable error (%) - 0.05.

Substituting

$$n = \frac{336}{1 + 336(0.05)^2} = 183$$

Thus, the sample size for senior student nurses is 183.

For the other participants (nurse educators, principal, and nurse managers), a census technique was used since their population sizes were small (45, 5, and 6, respectively). This ensured that all potential respondents in these groups were included in the study, allowing for an indepth evaluation of curriculum implementation issues across all participant groups. The summary of the sample size calculation (student nurses group) for the quantitative data, and for the KIIs and FGDs participants (nurse educators, principal, and nurse managers) is presented in Table 3.2

Table 3.2: Sample size

County	Hospital	Senior student nurses	Nurse educators	Principals	Nurse managers
Bomet	Bomet KMTC & Longisa County Referral	<u>78</u> 336 x183=42	12	1	1
	Kaplong Mission Hospital & MTC	<u>52</u> 336 x183=28	8	1	1
	Tenwek College of Health Sciences & Hospital	<u>69</u> 336 x183=38	10	1	1
Kericho	Kericho County Referral Hospital	<u>78</u> 336 x183=42	9	1	2
	Kapkatet KMTC & Hospital				
	Litein Mission Hospital & KMTC	<u>59</u> 336 x183=32	6	1	1
TOTAL (N)		183	45	5	6

3.7 Data collection tools

The study used three data collection instruments, namely a questionnaire, a key informant interview, and a focus group discussion guide.

3.7.1 Questionnaire

A structured self-constructed questionnaire was designed to collect quantitative data from nursing students and educators (Appendix II & III). The introduction part of the questionnaire included brief instructions to guide the respondents on how to approach each item and it was split into five sections. The first section obtained data regarding the demographic characteristics of the respondents and their respective colleges. The second section obtained data on the specific objectives of the study; that is; adequacy of teaching resources, level of preparedness for nurse educators, capacity of clinical placement sites to support nursing students' development of clinical skills, and the

extent of integration of emerging healthcare trends. Kothari (2017) recommends the use of standard questionnaires because they enable the researcher to collect standardized responses for easy comparison and statistical analysis, and they ensure anonymity to encourage honest feedback from the respondents (students and educators).

3.6.2 Key informant interviews

Key informant interviews were carried out with the principals of the selected nurse training institutions and nurse managers from selected hospitals. The interview questions focused on curriculum oversight, resource allocation, policy challenges, and areas for improvement.

3.6.3 Focus Group Discussions

FGDs were held with senior nursing students and nurse educators to gain an indepth understanding of their perspectives in the KRCHN curriculum implementation. The discussions centred adequacy of learning and teaching resources, hands-on learning, competency development, supervision quality, and clinical placement challenges. The use of FGDs helped the researcher to uncover hidden challenges that would not have emerged in individual surveys and/or interviews. In addition, it allowed the participants to discuss and compare experiences for richer insights.

3.7 Pre-testing of research instruments

Pre-testing of research instruments was carried out before the actual study to assess and enhance the validity and reliability of the data collection tools. This helped in identifying potential issues or areas of failure for the main research project, as well as any protocol violations or overly complicated techniques or instruments. The pretesting of data collection tools was carried out at Mosoriot Kenya Medical Training College and Mosoriot Sub-county Hospital in Nandi County. It involved 10% of the sample size

of the study. According to Kothari (2017), the sample for a pretesting data collection tools should have similar features and should be 10% of the sample anticipated for the main study.

3.7.1 Reliability of the instruments

Reliability is the ability of the research instrument to provide consistent scores or results each time the instrument is put into use under the same conditions or using similar participants (Dubey & Kothari, 2022). According to Collis and Hussey (2021), the instrument's reliability can be measured through examining its internal consistency. An assessment of the instruments internal consistence establishes the extent to which the items within the instrument measure the same concept or construct. This was done by use of Cronbach's alpha coefficient with the aid of SPSS Version 26.

The questionnaire was evaluated for reliability through use of test re-test technique to determine the Cronbach coefficient. Kothari (2017), suggests that a threshold of Cronbach coefficient of 0.7 and above is considered sufficient reliability. For this study, the Cronbach coefficient reliability test was above 0.7 in all the four thematic areas tested by the questionnaire (adequacy of teaching and learning materials-0.79, nurse educators preparedness-0.82, capacity of the clinical placement sites-0.73 and technology integration-0.72), indicating that the tool was reliable.

3.7.2 Validity of the instruments

According to Taherdoost (2016), the instrument's validity indicates the extent to which the instrument measures what it intends to measure accurately. Therefore, assessing the validity of an instrument is critical in research as it ensures that valid and reliable data is collected. The study examined content, construct, and face validity. Content validity examined the extent to which the items in the research instrument represent the entire

content that was being measured; this form of reliability was enhanced by carrying out an extensive literature review from past studies on curriculum implementation in registered community health nursing. Construct validity examined the extent to which the research instruments measured the underlying theoretical constructs that were supposed to be measured. Overall, the validity was enhanced through consultation with Supervisors.

3.7.3 Rigour in Qualitative research

Rigour in qualitative research is measured by their trustworthiness of the tools. Taherdoost (2016) postulates that qualitative data should possess credibility, confirmability, dependability, and transferability to be considered reliable. Credibility refers to the extent to which the findings of a qualitative study accurately represent the experiences and perspectives of the participants. The credibility of the interview was enhanced through prolonged engagement with the interviewees during the interview session. This enabled the researcher enough time to review and verify the information provided and compare the data obtained with that obtained from other sources (triangulation).

Confirmability is the objectivity or neutrality of the findings, indicating that they are not influenced by the researcher's biases. This attribute was enhanced by reflecting on and acknowledging the researcher's perspective, employing an external peer review, and documenting the decision-making process. Dependability entails assessing the stability and consistency of the research findings under different conditions over time. This was achieved by maintaining a detailed interview process record and using an additional researcher (research assistant) to ensure consistency.

Transferability refers to the degree to which the research findings can be transferred or applied to other settings or contexts. The researchers enhanced the transferability of the research findings by giving a detailed context of the study, the research participants, and the research process. To ensure the trustworthiness of the data collection instruments, the current study adopted mixed research methods, which allow for data triangulation. This served as the foundation for the validity and reliability of the data collection instruments.

3. 8 Data collection procedures

Before data collection, the researcher obtained the necessary ethical approvals from relevant institutional review boards, National Commission for Science, Technology and Innovation (NACOSTI) and permissions from nurse-training institutions and affiliated hospitals. Once approvals were granted, the researcher coordinated with institutional administrators to schedule appropriate dates and times for data collection, ensuring minimal disruption to academic and clinical activities.

3.8.1 Quantitative data

The quantitative data collection procedure was structured to ensure systematic, reliable, and valid acquisition of numerical data relevant to the implementation of the KRCHN curriculum. The study employed structured questionnaires as the primary tool for gathering quantitative data. These questionnaires were designed based on the study objectives and reviewed by subject matter experts to ensure content validity.

The questionnaires were administered in person to nursing students in their final year of study, and nurse educators. A brief orientation session was conducted with each group of respondents to explain the purpose of the study, emphasize voluntary

participation, and address any questions or concerns. Respondents were assured of confidentiality and anonymity to encourage honest and unbiased responses.

Data collection occurred over a period of two months, during which the researcher, assisted by trained research assistants, distributed and supervised the completion of questionnaires to maximize response rates and clarify any ambiguities in real time. Completed questionnaires were collected immediately to reduce the risk of loss or tampering.

3.8.2 Qualitative data

To complement the quantitative findings and provide deeper contextual insights, qualitative data was collected through Key Informant Interviews (KIIs) with principals of selected nurse training institutions, and nurse managers from selected affiliated hospitals. These participants were purposively selected based on their strategic roles, knowledge of institutional operations, and direct involvement in the implementation of the KRCHN curriculum.

Prior to the interviews, formal permissions were obtained from the respective institutions and ethical clearance was secured. Potential participants were contacted in advance and invited to participate in the study. An interview guide, aligned with the study objectives, was developed to facilitate consistency while allowing flexibility for probing deeper into emerging themes. The guide covered areas such as adequacy of teaching resources, educator preparedness, capacity of the clinical placement sites to support nursing students' clinical skills development, and integration of emerging healthcare trends and technologies.

The interviews were conducted face-to-face in a private and conducive settings, either at the participants' offices or at mutually agreed locations within the institutions. Each

session began with a briefing on the study's purpose, confidentiality assurances, and the voluntary nature of participation. With informed consent, the interviews were audio-recorded to ensure accuracy in data capture, and detailed field notes were taken concurrently to record non-verbal cues and immediate impressions.

The interviews were semi-structured, lasting approximately 45 to 60 minutes, and encouraged open dialogue to elicit rich, descriptive responses. The data collected from these KIIs were later transcribed verbatim and subjected to thematic analysis. This qualitative approach allowed for the exploration of nuanced experiences, institutional practices, and perceptions that are often not captured through structured questionnaires.

3.9 Data analysis

This section presents the procedures used to analyze the quantitative and qualitative data collected in the study. A mixed-methods approach was adopted, allowing for both statistical and thematic analysis to comprehensively address the research objectives. The specific procedures for analyzing each type of data are outlined in the subsections below.

3.9.1 Quantitative data

Quantitative data was cleaned, analyzed using the SPSS Version 26. The analysis process began with data preparation, which included editing, coding, entry, and cleaning to ensure completeness and accuracy, in line with the recommendations of Lutabingwa and Auriacombe (2018). Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize data on adequacy of teaching resources, level of nurse educators' preparedness, clinical placement sites capacity, and integration of emerging healthcare trends in nurse-training institutions. These summaries provided a foundational understanding of the implementation status

of the Kenya Registered Community Health Nursing (KRCHN) curriculum, diploma program

3.9.2 Qualitative data

Qualitative data was analyzed using NVivo software. NVivo is a widely used qualitative data analysis tool that facilitates the organization, coding, and thematic interpretation of unstructured textual data (Kent State University, 2020). In line with best practices in qualitative research, data preparation and analysis occurred concurrently. This is consistent with the view that qualitative data analysis is an iterative and cyclical process that begins during data collection and continues through data transcription, coding, and theme development (Peel Region Evaluates Platform, 2018).

The researcher employed Thematic Analysis as the primary analytical framework, guided by Braun and Clarke's (2006) approach. This involved a systematic process of familiarization with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the final report. In addition to thematic analysis, content analysis techniques were applied to quantify certain repeated patterns, while narrative analysis supported the interpretation of participant stories where applicable (Joffe & Yardley, 2004). This multi-layered approach ensured a rigorous and nuanced understanding of the qualitative data.

3.10 Ethical considerations

Before commencement of the study, approval was sought and received from the Moi University Institutional Review and Ethics Committee (IREC). Further, a license to carry out the study was also sought from the National Commission for Science, Technology and Innovation (NACOSTI). These two permits enabled the researcher to

seek permission to carry out the study from the Leadership of the County Medical Departments from the selected counties, and Principals of the selected nurse training institutions. During the study, the researcher ensured that the confidentiality and anonymity of the respondents were upheld. The identity of all participants was protected by neither giving their names when presenting research results nor including identifying details such as names, registration data, class stream, and workstation, which could reveal their identity. Participants were not required to put names on questionnaires, sign any leaf of the questionnaire, or leave a thumbprint. The interview and FGD were conducted in a private location where there was no other person who could influence the behavior and response of the respondent. Finally, responsible reporting of the results was adhered to. The findings of this study will be published in refereed journals in order to make it accessible to the public and academic audiences, presented in seminars and conferences attended by target audiences, and copies of the research findings will also be made available for the Counties involved in the study.

Data management: Data was protected using strong password, hard copies had no names of the respondents in order to protect their privacy, filled questionnaires were kept under lock and key. Participants were assured that there were not going to be paid for participating in the study, they were informed that the findings of the study will be used to improve the implementation of the curriculum. The participants were informed that participation in the study was voluntary and they were free to withdraw from the study anytime they did not wish to continue participating in the study. Justice was achieved in the study through random sampling of the participants, senior nursing students from the selected nurse training institutions were given equal opportunity to participate in the study.

CHAPTER FOUR

RESULTS

4.0 Introduction

This chapter covers the findings from the qualitative and quantitative data collected in selected hospitals and nurse-training institutions in Bomet and Kericho Counties in Kenya. Both qualitative and quantitative data was collected from the nurse educators, senior nursing students, the principals of nurse training institutions and nurse managers from selected clinical placement sites. The statistical tests conducted was determined by the type of the data and the research objective. For the quantitative data, the descriptive statistics performed based on the objectives are frequency, percentage, mean and mode while for qualitative data, thematic analysis was performed. The findings on this chapter are presented in narratives, tables and figures beginning with the demographic information of the respondents followed by the findings on each objective.

4.1 Response rate

The total sample size of respondents was 238 distributed as follows; 45 nurse educators , 6 nurse managers, 183 senior nursing students, and 5 principals from selected nurse training institutions.

As shown in **Table 4.1**, below, the total data collected was from 214 respondents giving a response rate of 89.5% which is adequate for data analysis.

Table 4.1 Response rate

Respondents	Target sample	Actual sample	Response rate
Senior Nursing Students	183	159	97.7%
Principals	5	5	100%
Nurse Educators	45	44	84.4%
Nurse managers	6	6	100%
Total	239	214	89.5%

4.2 Demographic characteristics

The demographic characteristics captured from the respondents and presented in this section include: the gender, the age, and the education level. Additional demographic information captured from the nurse educators only is the position,

4.2.1. Gender of Respondents

Gender comparison of the participants shows there were more male nurse educators at 55.6% compared to female nurse educators at 44.4%. On the contrary, the female respondents in the other clusters of respondents were more than their male counterpart; female nursing students were more than half at 69.5% the males at 30.5%, while female nurse managers were at 54.5% compared to males 45.5%, and the female school principals were three quarters at 75% compared to their male counterparts at 25%.

This shows that the nursing profession is female-dominated, as presented in **Figure 1**.

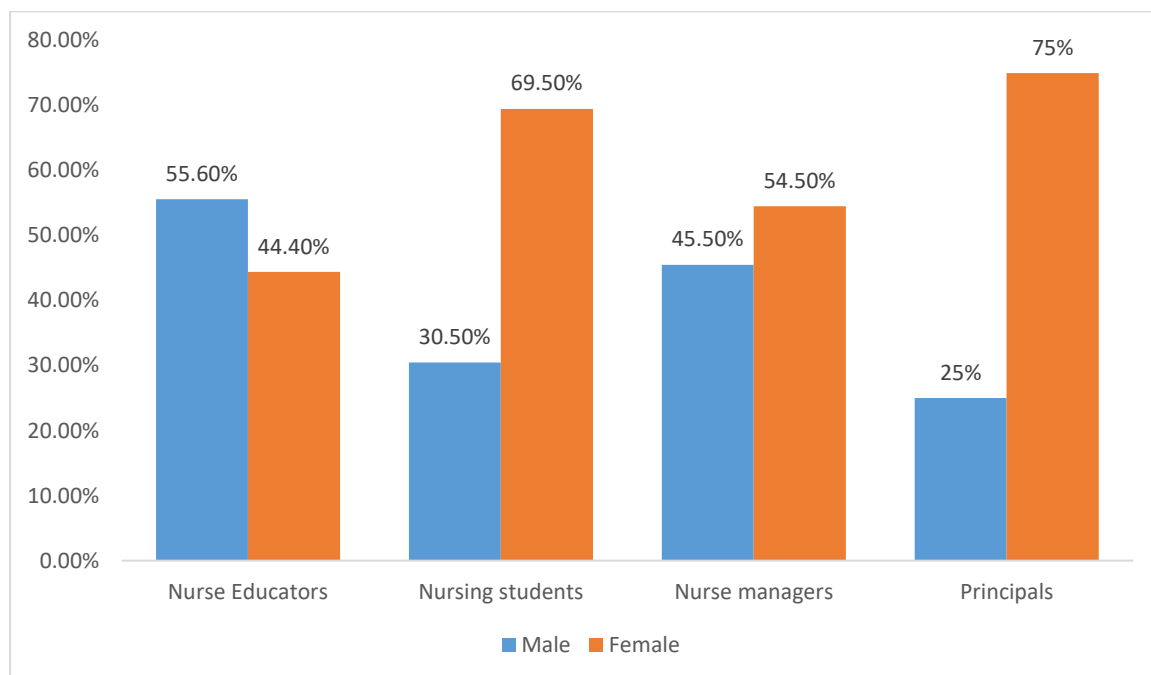


Figure 1 Gender of Respondents

4.2.2. Age of Respondents

The age distribution of all the nurse educators, nurse managers, and school principals respondents shows a unique distribution. The nurse managers were the majority in the lowest age category 25-29, at 23.1% and 30-34, at 32.7%. The nurse educators were the leading at the middle age category 40-44 at 41.7% while the school principals were the most at the highest age category of 45-49 at 33.3%, and 50 and above at 66.7%. The distribution is a clear picture which shows more than half (55.8%) of the nurse managers are young (<35years), more than half (66.7%) the nurse educators in nurse training institutions were 30-44 years, while all (100%) of the school principals were above 45 years' old which can be attributed to the number of years of service before being appointed as the principal.

The findings in **Figure 2** below show the distribution of the age of respondents.

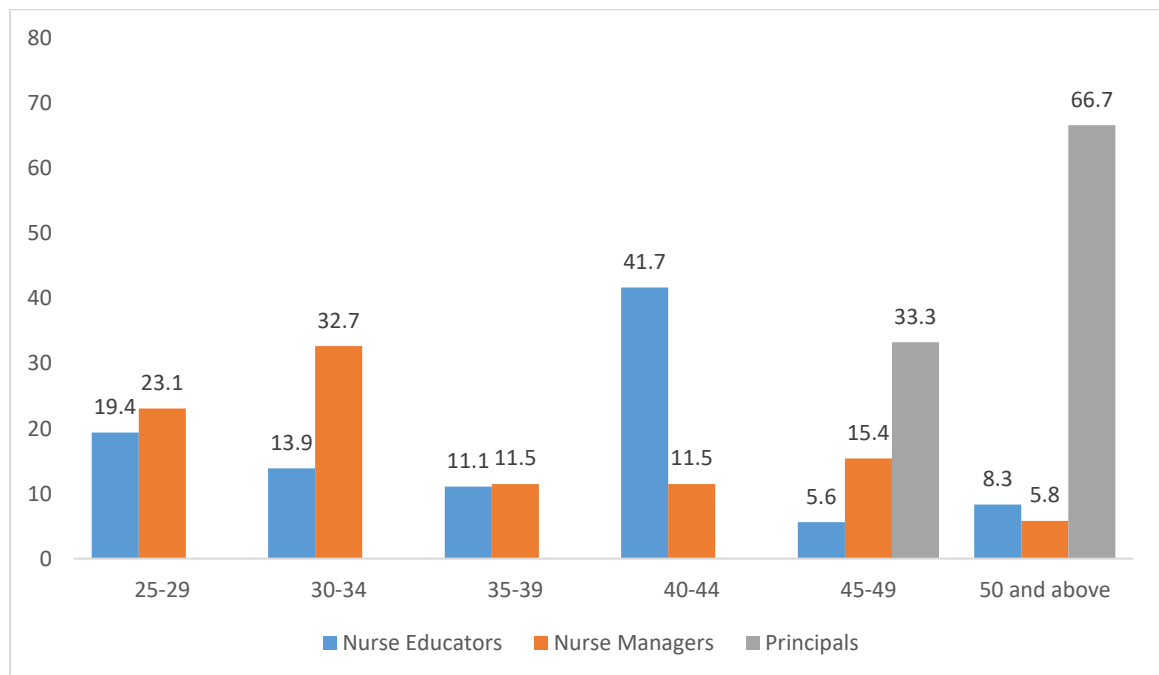


Figure 2. Age of Respondents

4.2.3. Education Level of Respondents

On the education level of the nurse managers, half of the respondents (50.9%) were higher diploma holders, followed by bachelor's degree holders (43.6%), and the master's degree holders were the least at 5.5%. For the nurse educators, more than three-quarters (77.8%) were bachelor's degree holders, 16.7% had obtained master's degrees, and less than 10% were diploma holders; higher diploma (2.8%) and diploma (2.8%). Comparison of the education level of the principals shows more than half (57.1%) were master's degree holders, followed by those with a bachelor's degree at 28.6% and the least had a higher diploma at 14.3%. **Figure 3** shows the education level of the nurse educators and principals.

For the students, more than half (67.9%) of the respondents were 3rd year students, followed by the 2nd year students at 28.4% and others were 3.7%. The average age was

23 years, with the majority being 22 years old. The youngest was 19 years old, and the highest being 32 years old. The target respondents were the 2nd-year and 3rd-year nursing students, representing 96.3% of the respondents, which increases the validity of the data.

Data on the education level showed that all the respondents' literacy level was high, hence they could read and understand the questions, and were able to give valid responses. Furthermore, the high literary level of the nurse managers and nurse educators revealed attainment of the minimum qualification required to work in hospitals and nurse-training institutions, respectively, as presented in **Figure 3** below.

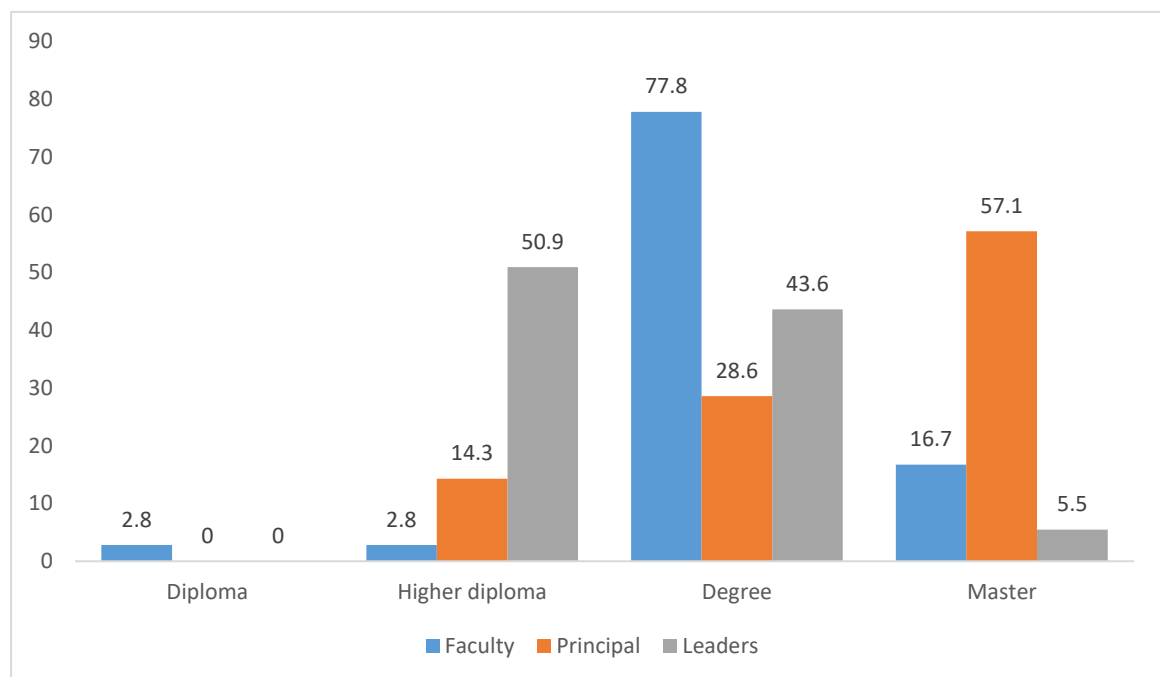


Figure 3. Education Level of Respondents

4.3 Findings Based on Specific Objectives

The study sought to assess the adequacy of teaching resources for KRCHN curriculum implementation, evaluate the level of preparedness of the nurse educators to facilitate

KRCHN curriculum implementation, assess the capacity of the clinical placement sites in supporting the development of nursing students' clinical skills, and investigate the integration of emerging healthcare trends and technologies into the KRCHN curriculum implementation in selected nurse-training institutions.

4.3.1 Adequacy of teaching resources and curriculum implementation

This was the first objective of the study. The researcher explored several categories of teaching resources that influence implementation of KRCHN curriculum, including but not limited to the number of qualified nurse educators per student ratio, availability of learning materials, adequacy of physical facilities, availability of simulators, Laboratories, and equipment for practical learning.

4.3.1.1 Senior nursing students' responses regarding the adequacy of teaching resources

When asked to rate the adequacy of teaching resources, the nursing students reported varied ratings for the classroom adequacy, sufficiency of library resources, availability of laboratories and whether the laboratories were well equipped and also availability of simulators.

Frequencies and percentages for adequacy of teaching resources by senior students are presented in **Table 4.2**

Table 4.2 Frequencies and percentages for Adequacy of Teaching Resources for senior students

Availability of T/L resources	N	Min	Max	Mean	Std. Deviation
The institution has adequate classrooms that support effective learning.	159	1.00	5.00	3.7722	1.06
The library resources (textbooks, reference materials, e-learning platforms) are sufficient for my academic needs.	159	1.00	5.00	3.4843	1.17
Laboratory facilities are well-equipped to support practical learning.	159	1.00	5.00	3.8616	1.17
The institution provides simulation equipment to enhance clinical skills before hospital placements.	159	1.00	5.00	3.5031	1.43
There are sufficient clinical placement opportunities for students to gain hands-on experience.	159	1.00	5.00	3.7484	1.17
Teaching resources are regularly updated to align with current nursing education requirements.	159	1.00	5.00	3.9874	0.93
Valid N (listwise)	159				

The results in **Table 4.2** showed that classroom adequacy received a mean score of 3.77 with a standard deviation of 1.06, suggesting that most students generally agreed that their training institutions provided them with sufficient classrooms to support effective learning. However, the standard deviation indicated some variability, implying that while a majority of senior nursing students felt satisfied, a significant proportion may have concerns regarding classroom space or quality.

Regarding the sufficiency of library resources, including textbooks, reference materials, and e-learning platforms, the mean score was 3.48, indicating a moderate agreement. The relatively higher standard deviation of 1.18 suggests that students have differing experiences with library resource availability, possibly due to variations in institutional facilities or access to updated materials. This variability may indicate the need for enhanced investment in library resources to ensure equitable access to learning materials for all students.

The availability of well-equipped laboratory facilities received a mean score of 3.86, showing that students generally agree that laboratories support practical learning. The standard deviation of 1.18 suggests some level of inconsistency in responses, which could be attributed to differences in equipment availability across institutions or disparities in laboratory access among students. Since laboratory training is essential in nursing education, institutions may need to evaluate and standardize the quality of laboratory resources to ensure uniform learning experiences.

A notable area of concern is the adequacy of simulation equipment, which had a mean score of 3.50 with the highest standard deviation of 1.43. This suggests that while some students feel that simulation tools effectively enhance clinical skills before hospital placements, others have experienced limitations in access or usage. The significant

variability in responses highlights the potential disparity in simulation resources across institutions, emphasizing the need for increased investment in technology-driven learning tools such as simulation mannequins and virtual training platforms.

The study also examined the availability of clinical placement opportunities, which received a mean score of 3.75 with a standard deviation of 1.17. The findings suggest that most students agree that they receive sufficient clinical exposure during their training. However, the variation in responses could be linked to differences in hospital affiliations, student placements, and the availability of clinical supervisors in different institutions. To enhance practical learning experiences, institutions may need to strengthen partnerships with healthcare facilities to ensure that all students receive adequate and standardized clinical exposure.

Finally, the highest-rated aspect of teaching resource adequacy was the regular updating of teaching resources, which had a mean score of 3.99 with the lowest standard deviation of 0.93. This suggests that most students consistently agreed that their institutions strive to update learning materials in line with evolving nursing education requirements. The lower variability in responses indicates a shared perception among students, suggesting that resource updates are more uniformly implemented across institutions.

The results imply that while most students agreed that teaching resources are generally adequate, some areas showed considerable variability, particularly in the sufficiency of library resources, simulation equipment, and clinical placement sites. The high standard deviations in some indicators suggest disparities among institutions, pointing to a need for standardization in resource allocation. Improvements in library resources,

simulation tools, and clinical placement structures could enhance the overall learning experience and better equip nursing students with practical nursing competencies.

To further assess the adequacy of teaching resources from the perspective of the senior nursing students, qualitative data from the 10 FGDs comprising 2 FGD groups from each of the five selected nurse training institutions were analyzed. The membership of each group ranged from 8 to 10 senior nursing students. The discussions were guided by structured questions aligned with the study objectives. Thematic analysis was used to categorize and interpret the responses, ensuring that key concerns, suggestions, and emerging trends were effectively captured.

On the adequacy of teaching resources in the KRCHN curriculum implementation, the senior nursing students expressed concerns about inadequate teaching resources in their institutions. Three themes emerged from the discussions with senior nursing students namely: materials and physical infrastructure, time, and human resource.

a. Materials and physical infrastructure

Many noted that while theoretical instruction was well structured, the availability of essential materials and physical facilities such as classrooms, up-to-date textbooks, anatomical models, and medical equipment was limited. Overcrowding in classrooms was also cited as a significant issue, making it difficult for students to actively engage with lecturers. Below are extracts from FGD

Nursing student 3. *Library is a small building, no space for discussion or reading, books are available,you just borrow them and leave because there is no adequate space in the library to studying (FGD 4)*

Additionally, they highlighted challenges with e-learning, stating that digital learning platforms were either unavailable or difficult to access due to unstable internet connectivity and lack of institutional support for online education.

Nursing student 9., sometimes you have assignments to do in the library but the internet is not working so..... it is a challenge....(FGD 3)

Some students mentioned that their institutions lacked well-equipped simulation labs, forcing them to rely heavily on theory rather than practical training. Below is an extract from FGD

Student 2 the skills lab is not well equipped, yah ... no simulators, sometimes one shared by many students (FGD 1)

Nursing student 4. ..., but skills lab is small no, enough space for demonstration and practice,....(FGD 6)

b. Time allocation for theory and clinical teaching

Nursing students reported that the training duration was reduced from three and a half years to three years, yet the course content remained the same. This means that students struggle both in class and in clinical placement to cover the expected course objectives against compressed time allocation. Also, time allocation for available learning resources like the library is limited and may not be aligned with the availability of the students. Below is an extract from FGDs

Nursing student 1. for the KRCHN program, at first it was a three and a half year, so the time was enough, but now, three years, I think the topics to be covered, or units to be covered is much more compared to that time given (FGD 2)

***Nursing student 5.** The library services are only here from 8 am to 5 pm and you will also find out that you are in class from 8 to five to give suggestions, there is need to extend library time to night in order to accommodate all the students including those in class during the day (FGD 8).*

c. Human resource

During the discussion, nursing students raised concerns on the number of nurse educators citing that they are few compared to the student population and the number of classes they are allocated. Below are extracts from FGD.

***Nursing student 2**Sometimes we have inadequate teachers for example right now in school, yes, yes, less, teachers, lecturers.....(FGD 7)_*

***Nursing student 6.** Lecturers are few, less than ten, about seven against a population of about 500 of students, lecturers play the role of clinical instructors because there are no clinical instructors (FGD 10).*

4.3.1.2 Nurse educators' responses regarding adequacy of teaching resources

When assessed on the adequacy of teaching resources, nurse educators gave diverse responses regarding the adequacy of classrooms, availability of library resources, availability of laboratories and whether they were well equipped and also availability of simulators.

Nurse educators' responses are presented in **Table 4.3** below.

Table 4.3 Frequencies and percentages for adequacy of teaching resources for nurse educators

	N	Min	Max	Mean	Std. Deviation
The institution has sufficient classrooms to facilitate effective teaching.	44	3.00	5.00	3.9545	0.43
The library provides adequate learning materials (textbooks, journals, and online resources) for nursing students.	44	2.00	5.00	3.2500	0.68
Laboratory facilities are well-equipped to support nursing practical sessions.	44	3.00	5.00	4.1364	0.59
Simulation-based learning resources are adequate for students to develop clinical skills.	44	3.00	5.00	4.4318	0.62
The institution provides adequate clinical placement opportunities for students.	44	4.00	5.00	4.1818	0.39
Teaching materials and resources are regularly updated to align with current nursing education standards.	44	4.00	5.00	4.3864	0.49
Valid N (listwise)	44				

The findings in **Table 4.3** above present findings from the assessment of the adequacy of teaching resources in the selected nurse-training institutions based on the perceptions of nurse educators. The adequacy of classroom facilities for effective teaching received a mean score of 3.95 with a standard deviation of 0.43, indicating that nurse educators generally agree that classroom space is sufficient for instructional purposes. The low variability suggests a consistent perception across institutions, implying that most educators feel that classroom resources are adequate for facilitating effective teaching. Regarding library resources, the mean score was 3.25, the lowest among the indicators, with a standard deviation of 0.69. This suggests that nurse educators have mixed perceptions about the sufficiency of learning materials such as textbooks, journals, and online resources. The moderate variability in responses indicates that some institutions may have well-equipped libraries, while others face challenges in resource availability. Given the critical role of libraries in nursing education, institutions may need to invest in expanding and updating their collections to ensure students and educators have access to relevant academic materials.

The availability of well-equipped laboratory facilities was rated highly, with a mean score of 4.14 and a standard deviation of 0.59. This indicates that most nurse educators agree that laboratory resources support practical training effectively. The relatively low standard deviation suggests consistency in responses, indicating that laboratory facilities across institutions generally meet the required standards for nursing education. The adequacy of simulation-based learning resources received one of the highest ratings, with a mean score of 4.43 and a standard deviation of 0.62. This suggests strong agreement among nurse educators that simulation tools are sufficient to help students develop clinical skills before their hospital placements. The low variation in responses

further indicates that simulation-based learning is well-integrated across institutions. However, continued investment in simulation technology can enhance experiential learning opportunities for students.

The availability of clinical placement opportunities for students was also rated highly, with a mean score of 4.18 and a standard deviation of 0.39. This suggests that nurse educators strongly agree that students receive sufficient hands-on training through hospital placements. The minimal variation in responses implies a shared perception across institutions, highlighting a well-structured approach to clinical exposure for nursing students.

Finally, the regular updating of teaching materials had a mean score of 4.39, one of the highest in the dataset, with a standard deviation of 0.49. This indicates strong agreement among nurse educators that instructional resources are frequently revised to align with current nursing education standards. The relatively low standard deviation suggests consistency in these updates across different institutions, reflecting an ongoing effort to integrate emerging healthcare trends into nursing training.

Overall, the descriptive statistics suggest that nurse educators perceive teaching resources in their institutions as generally adequate, with particularly strong ratings for simulation-based learning, laboratory facilities, and clinical placement opportunities. However, concerns about the sufficiency of library resources indicate a potential gap in access to academic materials. Addressing this issue by expanding and modernizing library materials and online databases could enhance the learning experience for both students and educators. The consistency in updating teaching materials is a positive indicator that nursing institutions are committed to maintaining high educational standards, which is critical for preparing competent nursing professionals.

To complement the quantitative and qualitative findings of this study, focus group discussions (FGDs) were conducted with nurse educators and key informant interviews for the principals of the nurse training institutions. These discussions aimed to gain deeper insights into the, experiences, perspectives and challenges related to the implementation of the KRCHN curriculum, the adequacy of teaching resources, the level of preparedness of the nurse educators, the capacity of the clinical placement sites in supporting students' skills development, and the integration of emerging healthcare technologies in the implementation of the KRCHN curriculum. The findings from the FGDs are presented separately for nurse educators to highlight their unique perspectives. For the nurse educators, one FGD group comprising 6 to 8 members was conducted in each of the five selected nurse training institution. Organizing for nurse educators, and nurse managers to participate in separate FGDs, and KIIs allowed for a comprehensive exploration of their distinct experiences.

From the interviews with the principals, it was revealed that the current KRCHN curriculum was developed through a collaborative effort involving multiple stakeholders, including the Nursing Council of Kenya (NCK), Ministry of Health, nursing professional bodies, nurse educators, clinical placement sites, and representatives from accredited nurse-training institutions. The curriculum undergoes periodic reviews to ensure it remains relevant, evidence-based, and aligned with emerging healthcare trends. However, the frequency of these reviews varies across institutions, with some training centers reporting delays in curriculum updates due to bureaucratic and logistical constraints.

Although most principals acknowledged that the curriculum reflects the overall goals of the KRCHN program, some expressed concerns regarding its applicability in real-world healthcare settings. Specifically, the principals noted that curriculum revisions

are often reactive rather than proactive, limiting their ability to keep pace with technological advancements, emerging diseases, and evolving patient care needs. Further, it was revealed that the implementation of the Kenya Registered Community Health Nursing curriculum faces several systemic challenges and institutional variations. Some of these challenges included the variation of availability of teaching and learning resources across institutions.

While well-established faith-based training institutions had modern libraries, simulation laboratories, and access to e-learning materials, others such as those managed by the government lacked essential infrastructure such as updated textbooks, medical equipment, and simulation models. Principals also noted that resource disparities directly affect the quality of nursing education, with students in under-resourced institutions receiving limited exposure to advanced clinical procedures. To address these challenges, institutional leaders suggested that the management should increase funding to upgrade learning facilities and learning institutions should form stronger partnerships with hospitals to facilitate hands-on training.

Nurse educators acknowledged that resource constraints were a major challenge in implementing the KRCHN curriculum effectively. Responses from the five FGDs involving nurse educators from selected nurse training institutions yielded four themes namely: Material and Physical infrastructure, Human resource, Time, and clinical placement sites concerns as discussed below.

Materials and physical infrastructure

Many nurse educators reported that budget limitations affected the procurement of essential teaching materials such as updated textbooks, simulation lab equipment, and digital learning tools. Some educators noted that while institutions were making efforts

to improve infrastructure, progress was slow due to financial constraints. Below are extracts from FGDs.

Nurse educator 2.there are a number of challenges It includes inadequate infrastructure for example we have less classrooms compare to the number of nursing students which is even getting worse because the number is progressively increasing. (FGD 4)

Nurse educator 1. . We also have inadequate teaching resources like LCDs (FGD 4)

Nurse educator 6.Because we have a challenge of inadequate rooms, it will help if we have more infrastructure classroom which allow training institution to be able to accommodate our growing number of students, bigger and more library space, then skills lab separately to create up space, will be able, at least to manage....

Nurse educator 8.Yes to create more space will help to enforce the curriculum implementation, also the materials, the learning materials, also should be procured. So that, all students can have the learning material with them every time they need (FGD 1)

Nurse educator 3. Again.....so we are lacking appropriate skills labs, I mean the....ideal ones, because you find that you have a skills lab, “which is like an example of a skills lab” because all after most of the equipment are not working. For example, if I want to demonstrate something on, for example, taking vital signs. You find that I'm supposed to use the clinical thermometer to see, to show the students how to do, how to read the temperature. But now that clinical thermometer is not available, I'm supposed to use the Mercury, the mercury blood pressure machine. It's not there. So it's like we've moved from what is documented in the curriculum to now becoming digital (FGD 2).

Human resource

Nurse educator 8. *Okay, we have a real shortage of lecturers, especially in campuses where we don't have enough KMTC lecturers. For my campus, you have to teach across you are, say, a nursing lecturer, for example. But again, we are the same people teaching in orthopedics. We are teaching community health department. So you find that for the nursing, if we were to do nursing alone, then the ratio is adequate. But now that we are cutting across, it becomes a bit tricky.*

Nurse educator 1.....*the shortage issues to do with shortage, okay, we have shortage of the lecturers (FGD 1).*

Nurse educator 2. *We are...., we are up to the standard of a lecturer for every 10 students. And we have made it very clear even to the employer. So even the human resources office, they know that when we are below that something is wrong. Occasionally, because of turnover, we may for some few months probably reduce the ratio, but usually when somebody leaves, we should work hand in hand with the HR department to make sure that we are there. So for classroom we are where we are supposed to be for clinicals (FGD 5).*

Nurse educator 4. *No. for clinicals, the ratio is still lower. But the beauty of our curriculum is that it is holistic. And then we don't want our students in the clinical experience rotation to be labeled as students. So we usually encourage them to work side by side by the qualified nurses. So indirectly, even clinicals. We meet that ratio, because of how we have planned it.*

Time

Nurse educators reported that owing to the shortage of educators for other programs offered in KMTC, for example Community Health and Orthopaedics, they are assigned to teach these other programs in addition to the workload in the nursing department. This makes them rush through the course content based on the short duration that they have against a wide scope of their teaching responsibilities. *Below is an extract from FGD.*

Nurse educator 3.....*Our attention is divided between the nursing students and the other students in KMTC, because we can't, we can't leave the other students, so we have also to support them, sure. This compromises the implementation of KRCHN curriculum, because we have to accelerate the process in order to cover given course contents within the shortest time possible due to overwhelming workload (FGD3).*

Clinical placement site concerns

Additionally, they highlighted challenges in securing clinical placement opportunities for students, stating that hospitals and healthcare facilities were often overwhelmed with large numbers of trainees from multiple institutions. Some educators suggested that institutions should seek partnerships with external stakeholders to improve access to training resources. Below are extracts from FGD.

Nurse educator 1.*also there is a lack of specialty in mostly in clinical areas, including, like psychiatry area psychiatry units (FGD 4)*

Nurse educator 5. *And also, there is a lack of specialty mostly in the clinical areas, including, like psychiatry area, psychiatry units we do not have in the County referral hospital. And also there is congestion in the clinical areas. There are very many students in clinical areas. Some of those challenges (FGD 5).*

Nurse educator 4.....there is also shortage in terms of clinical in terms of the clinical placement, whereby we cannot have enough spaces for the students to maybe to, to practice (FGD 2).

4.3.1.3 Nurse managers responses regarding adequacy of teaching resources for the krchn curriculum implementation

A recurring theme in the interviews with nurse managers was the disparity in infrastructure across clinical training sites. While some institutions benefit from well-equipped county referral and mission hospitals, others especially those affiliated with sub-county and rural hospitals face significant infrastructural limitations. These include inadequate ward space, outdated medical equipment, and limited access to essential nursing technology. Nurse Managers acknowledged that these disparities contribute to unequal learning experiences among students, with those placed in under-resourced facilities receiving less exposure to advanced clinical procedures. To address this, nurse managers recommended increased investment in hospital infrastructure, acquisition of modern equipment, and fostering partnerships with private healthcare facilities to enhance learning opportunities.

From the six KIIs carried out with the nurse managers from the six selected clinical placement facilities, it was revealed that a number of challenges involving human resource, infrastructure and time allocation for clinical placements existed as discussed below. .

a. Human resource:

Nurse managers noted that clinical teaching was majorly assigned to the clinical instructors yet some of the nurse training institutions had very few clinical instructors

that was not commensurate with the students' population. This implies that for these students, they will not have sufficient instructions. Below are extracts from KIIs.

Nurse Manager 1. *The school has one clinical instructor versus many students for three years. So, you see they have two intakes that make two classes per year, approximately 100, then the program of three years. So, you find one clinical instructor versus all those number of students, this is not good (KII 1).*

Nurse manager 6. *...Usually, clinical instructors report to the school, then they come back over. Okay? So, when I observed that was a problem in that so they are not able to meet, we had a meeting, and we call them that they are supposed to report here to supervise the student. Okay? Because of one number one, we say clinical instructors are inadequate, and secondly because the perception that it is only the nurse in-charges who are responsible for student supervision and mentorship (KII 6)*

b. Physical infrastructure:

Availability of physical facilities for students' clinical placement was raised by the nurse managers as one of the major constraints for support of the nursing students in their clinical learning environment. This lack of facilities was attributed to the huge number of students and the fact that multiple nurse training institutions share these clinical placement sites together with other students from other programs related to health sciences. Below are extracts from KIIs.

Nurse Manager 2. *currently, the infrastructure is adequate to accommodate the number of nursing students we have, but with the increasing number nursing students it might not be enough, and so, some might miss learning opportunities, yet they have to accomplish their learning clinical objectives. And again, patients with specific*

conditions are missing, therefore students will not achieve their clinical learning objectives (KII 2).

Nurse Manager 3..... when it comes to the infrastructure in the clinical setting in relation to the implementation of clinical teaching, what is happening now is that the infrastructure is not enough because, the number of students we receive from various training institution has gone up. So you find the departments are really very congested, for instance, MCH. There was a day I went around when I was going doing my usual supervision. I realized that the students who were allocated to MCH on that particular day was 57 comprising of nursing and clinical medicine students and we have got only four rooms. Those are different specialties. We had nursing students and clinical medicine students. I think those are the two. In total, they were 57 so I was imagining for these four rooms because that we have family planning, antenatal care, immunization and sick child rooms, the four rooms divided by the number of students. It's like they expected to be having around 17 students in one room, and sincerely, it will not be enough for them to learn (KII 3).

Nurse manager 4,it's congested. No one is able to scrub in the operation cases in theatre to meet the required skills, because of,... there are many students, and you have the inadequate rooms for operation, okay, especially NBU, also, we don't have all who like, NBU, KMC, those are challenging, as the institution is not adequate. Okay, Inadequate, because of the challenging number of students, the students are many and rooms are few (KII 4).

Nurse manager 3. Departments affected most by congestion of students are: operating theatre, Newborn unit, having in mind that these are the units that have strict controls for traffic for purposes of IPC (KII 3)

c. Time allocation for clinical placement:

When nursing students are rotating in their clinical placement sites, they work closely with the nurse managers. Through these interactions, nurse managers have identified that the time allocated for clinical placements is not sufficient for the nursing students to accomplish the stipulated objectives for each clinical rotation.

Below are extracts from the KIIs.

Nurse manager 1 ...the content verses the time, yes, we feel that the time allocated for clinical placement is not adequate, okay, yeah, considering that they change from three and a half to three, okay, so, yeah. So from our experience, yes, we've noted that you'll find students that they spend less time in the hospital unlike the other time. So you find that they might not complete their objectives, but sometimes you find they are rotating, and then all of a sudden they are called back to class. So you find that they didn't complete their objectives (KII 1)

Nurse manager 2. My view the time allocated for clinical practicum is not sufficient for the student to apply the knowledge learned from class to skills, like, for instance, when you post a student to maternity or labor ward the time allocated for antenatal care and management of labor second stage is not sustainable for the normal deliveries (KII 2)

Nurse manager 6. My view is that the time allocated is not sufficient enough for the student to translate the theoretical knowledge already obtained from class to skills, like, for instance, when you post a student to maternity or labor ward. Yes, the time allocated for antenatal care and management of labor second stage is not sustainable for the normal deliveries live alone. Theme: duration of the training: time allocated for clinical

practicum will not allow students to translate the knowledge learned from class to practical skills. For example managing a mother in labour (KII 6)

4.3.2 Level of preparedness of the nurse educators and curriculum implementation

The second objective was to assess the Level of Preparedness of the Nurse Educators on KRCHN curriculum implementation. The level of preparedness expected of the nurse educators encompasses a multidimensional approach that includes fundamental domains. These domains are: understanding adult learning principles, curriculum development, nursing practice knowledge, research skills, communication and collaboration abilities, and ethical and legal awareness

4.3.2.1. Senior nursing students' responses regarding the level of preparedness of the nurse educators for implementation of KRCHN curriculum.

The findings on the competency of nurse educators suggest a generally positive perception among senior nursing students regarding their instructional effectiveness, but also revealed critical areas requiring improvement to enhance curriculum implementation and student preparedness.

The frequencies and percentages for senior nursing students are presented in **Table 4.4** below.

Table 4.4 Frequencies and percentages for senior nursing students' responses regarding the level of preparedness of the nurse educators for implementation of KRCHN curriculum.

	N	Min	Max	Mean	Std. Deviation
My lecturers demonstrate strong knowledge of nursing concepts and practices.	159	1.00	5.00	3.7421	1.12
Educators use effective teaching methodologies that enhance understanding.	159	1.00	5.00	4.1824	1.06
Nurse educators integrate practical examples into their teaching.	159	1.00	5.00	4.0063	1.08
I receive adequate mentorship and guidance from my instructors.	159	1.00	5.00	3.5597	1.13
Educators provide timely and constructive feedback on assessments and practical skills.	159	1.00	5.00	3.9748	1.24
The nurse educators encourage evidence-based practice in nursing education.	159	1.00	5.00	3.7107	1.24
Valid N (listwise)	159				

The highest-rated aspect, effective teaching methodologies ($M = 4.18$, $SD = 1.06$) indicates that nurse educators employ pedagogical approaches that facilitate learning, reinforcing the importance of instructional strategies in knowledge acquisition. Additionally, the integration of practical examples ($M = 4.00$, $SD = 1.09$) and timely

feedback on assessments ($M = 3.97$, $SD = 1.25$) highlights the emphasis placed on experiential learning and performance evaluation.

However, the lower ratings for mentorship and guidance ($M = 3.55$, $SD = 1.13$) signal a significant gap in student support systems, which is crucial for competency development in nursing education. Similarly, the moderate scores for knowledge of nursing concepts ($M = 3.74$, $SD = 1.13$) and encouragement of evidence-based practice ($M = 3.71$, $SD = 1.24$) suggest variability in the depth of subject mastery and application of research-based learning among nurse educators.

The relatively high standard deviations across responses indicate inconsistencies in instructional delivery, likely influenced by differences in nurse educators' experience, institutional resources, and pedagogical training.

These findings underscore the need for a more structured development approach for nurse educators, including targeted training in evidence-based practice, mentorship programs, and standardized instructional strategies to ensure uniformity in curriculum delivery. Strengthening these areas will not only improve the competency of nurse educators but also enhance student preparedness for clinical practice, ultimately contributing to the quality of nursing graduates entering the healthcare workforce.

4.3.2.2 Nurse educators' responses regarding their Level of reparedness to implement the KRCHN Curriculum

Nurse educators' responses regarding their level of preparedness are presented in **Table 4.5** below.

Table 4.5 Frequencies and percentages for the level of preparedness of nurse educators for nurse educators

	N	Minim um	Maxim um	Mean	Std. Deviation
I have received adequate training to teach the Kenya Registered Community Health Nursing (KRCHN) curriculum effectively.	44	3.00	5.00	3.9545	0.57
I integrate evidence-based practices in my teaching methodology.	44	3.00	5.00	4.2727	0.66
I regularly update my knowledge and skills to stay current with advancements in nursing education.	44	3.00	5.00	4.2500	0.57
I incorporate practical case studies and real-life scenarios in classroom teaching.	44	4.00	5.00	4.5682	0.50
I receive adequate institutional support for professional development and training.	44	3.00	5.00	3.8864	0.86
I provide effective mentorship to students during their clinical training.	44	4.00	5.00	4.2500	0.44
Valid N (listwise)	44				

The findings on the level of preparedness of the nurse educators, as self-reported by nurse educators, suggest a generally high level of preparedness and engagement in teaching the Kenya Registered Community Health Nursing (KRCHN) curriculum. Nurse educators demonstrated strong confidence in their ability to integrate practical case studies and real-life scenarios into classroom teaching ($M = 4.56$, $SD = 0.50$), indicating a commitment to experiential learning, which is critical for bridging theoretical knowledge with clinical practice. Similarly, high ratings in evidence-based teaching methodologies ($M = 4.27$, $SD = 0.65$) and continuous professional development ($M = 4.25$, $SD = 0.57$) highlight a culture of lifelong learning among nurse educators, ensuring that instructional content remains aligned with current advancements in nursing education.

However, areas of concern emerge in institutional support for professional development ($M = 3.88$, $SD = 0.86$) and adequacy of training to teach the KRCHN curriculum ($M = 3.95$, $SD = 0.56$). While these scores indicate general satisfaction, the relatively lower means and higher standard deviations suggest variability in access to nurse educators' development opportunities across different institutions. This inconsistency may affect the uniformity of curriculum implementation and the overall quality of nursing education.

The findings also highlight a strong commitment to student mentorship ($M = 4.25$, $SD = 0.44$), which aligns with best practices in nursing education. However, to further strengthen nurse educators competency, institutions should enhance structured training programs, provide more robust support for continuous professional development, and ensure equitable access to resources that enable educators to effectively deliver the KRCHN curriculum.

By addressing these gaps, institutions can improve the overall quality of nursing education, thereby producing more competent nursing graduates ready for professional practice.

The study further carried out key informant interviews with the principals and nurse managers regarding the level of preparedness of the nurse educators within their institutions. The responses from the interviews were grouped into themes and analyzed thematically. The main themes from the interviews were alignment between written and delivered curriculum, nurse educators allocation of classes in line with the nurse educators member's area of specialization, course preparation and nursing educator's preparedness in curriculum delivery.

The study revealed that while most institutions strive for alignment between the written curriculum and actual instruction, challenges such as nurse educators shortages, inconsistent instructional approaches, and inadequate clinical infrastructure often lead to gaps in curriculum implementation. Some principals highlighted discrepancies between the theoretical content of the curriculum and practical applications. The principals noted that certain clinical competencies emphasized in the curriculum were not fully integrated into training sessions due to resource constraints and thus a lack of enough capacity for the nurse educators to effectively implement the written curriculum.

The principals identified several factors that contributed to misalignment between the written curriculum and actual instruction. These included insufficient training for lecturers on the revised curriculum and emerging instructional methodologies, instructor autonomy in delivery, leading to variations in how different nurse educators members interpret and implement curriculum content, and limited institutional

resources, which restricted full implementation of some practical. The majority of the institutional heads recommended for preparation of structured nurse educators development programs, the standardization of instructional guidelines, and increased monitoring of curriculum implementation. In addition, nurse educators members should update their knowledge and skills to stay current with advancements in nursing education through seminars and from institutional support through professional development practices.

On nurse educators allocation and course preparation, most principals noted that nurse educators were assigned specific courses based on their area of expertise. Additionally, most nurse educators members developed course outlines derived from the official course descriptions issued by the learning institution, thus ensuring that instructional content was aligned with curriculum expectations. However, some principals indicated that their institutions especially public colleges had challenges with nurse educators shortages, requiring lecturers to handle multiple courses beyond their specialization, which affects the quality of instruction. When asked what should be done to overcome the noted challenges, the principals unanimously singled out the need to have specialized nurse educators recruitment to ensure balanced workload distribution, frequent workshops and refresher courses for lecturers to enhance their instructional delivery and adoption of digital learning platforms to supplement face-to-face teaching.

To complement the quantitative and qualitative findings of this study, focus group discussions (FGDs) were conducted with senior nursing students and nurseeducators. This provided more insight to the effect of the competency of the nurse educators on curriculum implementation. From the discussions, students had mixed opinions about the competency of their nurse educators. Some students appreciated the vast theoretical knowledge of their lecturers, while others felt that practical application was not

emphasized enough. Many students observed that some educators struggled to demonstrate clinical procedures effectively, which they attributed to either limited clinical experience or a lack of refresher training. Some students also reported inconsistencies in teaching methodologies, noting that certain educators were more effective in delivering content than others. Additionally, they emphasized the need for standardized instructional approaches to ensure that all students receive the same level of training and preparation.

Lecturers generally expressed confidence in their ability to deliver the KRCHN curriculum but acknowledged some challenges. Many educators reported that they regularly participated in professional development programs, workshops, and self-directed learning to stay updated on emerging nursing practices. However, some admitted that keeping up with healthcare advancements was challenging due to limited institutional support for continuous training. Some lecturers also noted that workload pressures and large class sizes sometimes affected their ability to provide individualized attention to students. They emphasized the need for more structured mentorship programs and standardized teaching methodologies to enhance consistency in content delivery

Nurse educator 3. The Lecturers are inducted in the role of curriculum implementation. One is by being oriented on the new curriculum, yes, and the second one is they are also reviewing on job trainings. Also they can do workshop on learning and teachings to the lecturers. They also have to facilitate. They also record facilitation in headquarters like KMTC quarters, and also recorders can be using curriculum in preparation for teaching and training. With this elaborate induction program, lecturers are ready and well prepared to implement KRCHN curriculum(FGD 3)

Once you get employed, yes, one thing, you go through a process of induction, on all the activities are expected to perform as a lecturer in KMTC. So, in that process, you are given highlights of what is expected of teaching staff. The induction process prepares the lecturers well for their teaching roles

I can say the level of preparedness of the lecturers is around 75%, according to me, okay, because the reason why I am giving it to 75% is that you can be prepared in general, you have not been prepared maybe specific areas you are going to teach, you know, in the KMTC, that is, they usually say you can teach cross you can teach across, so meaning that 25% You can miss in the subject, maybe you are not well versed, that is according to me..

Some teachers, especially part-timers, do not implement curriculum as stipulated, for example a course that is to be covered in 30 hours, 10 hours theory and 20 hour lab practical. But for the part -timers, you find that they do 30 theory hours so there is no that blended learning between the theory and the practical. This will affect the learning, students are disadvantaged.

Nurse educator 1 So personally, and personally, I will, I will say for generally for for the lecturers here, in a scale of one to 10, I will give them an eighth, the preparation is usually good.

4.3.2.3 Nurse managers' responses regarding the level of preparedness of the nurse educators for implementation of the KRCHN curriculum.

***Nurse manager 1** Some nurse educators have a knowledge gap, for example where a teacher is sent to guide students and assess them in an area which is not their specialty. The teacher might end up not doing the right thing because of the knowledge gap. And those nurses who are seconded from the counties to the nurse-training institutions, you*

find they had issues, and they're being pushed away from the clinical setting to the other end. They will not be motivated to give their best in teaching, they are very problematic in KMTC (KII I)

4.3.3 Capacity of the Clinical placement sites to support clinical skills development of the nursing students.

The third objective was to assess the capacity of the clinical placement Sites in Supporting Students' Development of Clinical Nursing Skills. Clinical placement sites play a vital role because they provide the practical experience necessary to translate theoretical knowledge into real-life skills. This is attributed to the fact that these placements facilitate the development of competence, confidence, as well as professional identity among nursing students.

4.3.3.1 Senior nursing students' responses regarding the capacity of the clinical placement sites in supporting students' development of clinical nursing skills.

The findings of senior nursing students' responses regarding the capacity of the clinical placement sites in supporting students' development of clinical nursing skills indicate a generally positive perception of clinical training, though with some areas for improvement as presented in **Table 4.6** below.

Table 4.6 Frequencies and percentages of senior nursing students' responses regarding the capacity of the clinical placement sites in supporting students' development of clinical nursing skills

	N	Minimum	Maximum	Mean	Std. Deviation
My clinical placements provide adequate exposure to real patient care.	159	1.00	5.00	3.7107	1.14
I receive effective supervision from clinical instructors during practical sessions.	159	1.00	5.00	3.7862	1.37
I feel confident in performing basic nursing procedures due to clinical training.	159	1.00	5.00	4.0314	1.18
The institution provides opportunities for case discussions and debriefing after clinical experiences.	159	1.00	5.00	4.0063	1.11
Clinical training has helped me develop critical thinking and decision-making skills.	159	1.00	5.00	3.7673	1.17
My clinical learning experiences reflect real-life nursing practice scenarios.	159	1.00	5.00	3.9874	1.06
Valid N (listwise)	159				

From the findings in **Table 4.6** above, it is evident that the highest-rated statement, "I feel confident in performing basic nursing procedures due to clinical training" ($M = 4.03$, $SD = 1.18$), suggests that most students gain essential hands-on skills through their clinical experiences. Similarly, the opportunities provided for case discussions and debriefing after clinical experiences ($M = 4.00$, $SD = 1.11$) indicate a structured

approach to reflective learning, which is critical for reinforcing theoretical knowledge and improving practical application.

However, the adequacy of exposure to real patient care during clinical placements ($M = 3.7107$, $SD = 1.13821$) and the effectiveness of supervision from clinical instructors ($M = 3.7862$, $SD = 1.37502$) received slightly lower ratings. The relatively high standard deviation in these areas suggests variations in the quality of clinical training experiences across different institutions, potentially due to disparities in instructor availability, patient caseload, or institutional resources. Additionally, the development of critical thinking and decision-making skills ($M = 3.76$, $SD = 1.17$) was moderately rated, implying that while students benefit from clinical training, there may be gaps in fostering higher-order cognitive skills necessary for autonomous nursing practice.

The overall findings highlight that while clinical training in nursing institutions contributes significantly to competence development, inconsistencies in supervision and exposure to real-life nursing scenarios are possible challenges that hinder the full realization of learning objectives.

From the qualitative data, the senior nursing students reported dissatisfaction with the capacity of the clinical placement site, citing an overwhelming number of students within specific areas against a limited number of clients and patients, hence challenging their ability to meet their clinical learning objectives. Below are extracts from FGDs.

Senior Nursing Student 1 *Clinical learning environment is poor. It's poor, because at some point, we find there are almost three classes that are in the same rotation. Let's say, for example, labor ward, there are three classes and three classes rotating there, and the patients are few, yes, so they are not able to learn(FGD 1).*

Senior Student 2 there are many nursing students against few patients and clients. Especially in maternity. Generally, departments are overwhelmed by the number of nursing students (FGD 2).

4.3.3.2 Nurse educators' responses regarding the capacity of the clinical placement sites in supporting students' development of clinical nursing skills

Findings from the nurse educators regarding the capacity of the clinical placement sites for supporting the development of clinical nursing skills of the nursing students indicate that the health facilities generally can support the clinical learning of the nursing students. Additionally, nurse educators rated the adequacy of clinical placements, supervision, and collaboration with healthcare facilities highly, suggesting a structured and supportive learning environment.

The frequencies and percentages are presented in **Table 4.7** below.

Table 4.7 Frequencies and percentages nurse educators' responses regarding the capacity of the clinical placement sites in supporting students' development of clinical nursing skills

	N	Minimum	Maximum	Mean	Std. Deviation
Students receive sufficient clinical exposure during their training.	44	3.00	5.00	3.7955	0.63
Clinical placements are well-structured to ensure students gain hands-on experience.	44	3.00	5.00	4.1364	0.59
I provide continuous supervision and feedback to students during clinical rotations.	44	4.00	5.00	4.2500	0.44
Students demonstrate confidence and competency in performing basic nursing procedures.	44	2.00	5.00	4.1591	1.01
The current clinical training model adequately prepares students for real-world nursing practice.	44	4.00	5.00	4.1818	0.39
My institution collaborates with healthcare facilities to enhance student learning experiences.	44	3.00	5.00	4.4545	0.69
Valid N (listwise)	44				

The findings on clinical competence development from the perspective of nurse educators indicate a generally favorable evaluation of the clinical training framework.

The highest-rated statement, "My institution collaborates with healthcare facilities to

enhance student learning experiences" ($M = 4.45$, $SD = 0.69$), highlights the critical role of partnerships between training institutions and clinical sites in enriching students' practical exposure. Additionally, educators reported providing continuous supervision and feedback to students ($M = 4.25$, $SD = 0.43$), which is essential for skill development and professional growth.

Clinical placements were perceived as well-structured to facilitate hands-on learning ($M = 4.13$, $SD = 0.59$), and students were seen as demonstrating confidence and competency in performing basic nursing procedures ($M = 4.15$, $SD = 1.01$). However, the standard deviation in this area suggests variability in student preparedness, potentially influenced by differences in training quality across institutions. Moreover, while educators agreed that the current clinical training model adequately prepares students for real-world nursing practice ($M = 4.18$, $SD = 0.39$), the sufficiency of clinical exposure received a comparatively lower rating ($M = 3.79$, $SD = 0.63$). This suggests that while structured learning opportunities exist, factors such as patient availability, instructor workload, and institutional constraints may limit students' clinical experiences.

The descriptive results from nurse educators highlight a generally positive evaluation of clinical sites' capacity to support students' competence development, though some gaps remain. Nurse educators rated the adequacy of clinical placements, supervision, and collaboration with healthcare facilities highly, suggesting a structured and supportive learning environment. However, students' responses indicated variability in their clinical exposure and confidence levels, with slightly lower mean scores in areas such as supervision and real-life applicability of training. This discrepancy suggests that while institutions provide well-structured training, factors such as resource limitations and inconsistent mentorship may affect students' overall preparedness.

Therefore, strengthening practical exposure, enhancing instructor-student engagement, and standardizing clinical supervision could help bridge these gaps.

The qualitative data collected through FGDs involving nurse educators revealed gaps in the capacity of placement sites in supporting students' skills development. Below are extracts from FGDs.

Nurse educator 1 *So therefore it can force you to maybe your objective was maybe to make the student go for MCH reaching there, you can find 101 students, you cannot check those students. So it means you have to change a bit, maybe you go to another objective. So meaning you cannot implement the curriculum the way it is supposed to be. So, you have to at least that flex, but by the end of the day, you make sure that you have achieved the objectives.*

Nurse educator 2 *on top of that, again, when you know, the clinical placement sites are few, and the numbers are swollen, it means that there are those students who will be joy riders us, because you are not able to get some of them hands-on, then the number of patients again, at that moment might not be adequate enough for the training of the students. And so, you know, again, people have different attitudes when it comes to work. So if these students are not all that those students who want to, to partake in this course, like they, this is what they want, they might say, always lose on the skills. And that is why there is a gap. Yes, the major gap is from number two, most of the hospitals again, don't have the basics you teach like something like bed making there are no linen, then there are no appliances that can take the students to that level of integrating the knowledge and the practical. So it can come even to treatment. It's almost like there is even issues like doing the correct thing like trays, prepare a tray for this and that. You want to have something as little setup over training, your whatever you teach in*

class is not what is in the hospital. So everything is like shortcut, you look for a delivery path to deliver, where you have the drapes, you have everything and you find it is only a scissor, and maybe two clumps or you use the cord clumps and as razor blade. So that is one of the gap is. There is a disconnect between the training institution and the first the hospital, in

4.3.3.3 Nurse managers' responses regarding the capacity of the clinical placement sites in supporting students' development of clinical nursing skills

To gain further insight into the relationship between clinical competence development and the implementation of KRCHN curriculum. The study conducted interviews with the leadership of the selected institution and the nursing students' coordinators. From the interviews, the majority of the principals raised concerns regarding the limited time allocated for clinical practice within the KRCHN curriculum. Most principals agreed that students undergo structured rotations across various hospital departments, however, the allocated duration was considered insufficient to fully develop essential clinical skills. Principals emphasized that the low student-to-instructor ratio and overburdened hospital environments further limit the effectiveness of clinical training. Additionally, it was noted that some training institutions prioritize theoretical coursework over practical exposure, which negatively affected the students' transition into clinical settings.

Further, principals reported that clinical placements in their institutions were well-structured, but in most cases faced logistical challenges that limited their effectiveness. One of the primary concerns raised was the high student-to-instructor ratio in clinical settings, which reduces the level of individualized supervision students receive. The majority of the principals acknowledged that while partnerships with hospitals and

healthcare facilities provided valuable hands-on experience, overcrowded wards and limited clinical instructors made it difficult to ensure each student gets adequate practical exposure. The principals further highlighted that some institutions had introduced mentorship programs and structured clinical rotations to improve student training experiences. However, they emphasized the need for increased investment in hiring and training clinical instructors. They also called for policy interventions to standardize clinical placement procedures and ensure that all nursing students receive equitable training opportunities.

Interview feedback from nurse managers revealed that most students gain valuable exposure to patient care during clinical placements, however, majority of the students feel unprepared to carry out their duties due to inadequate supervision and mentorship. The nurse managers noted that students often rely on senior nurses in hospital settings for guidance, which is not always structured or consistent. Additionally, the lack of standardized assessment tools for clinical training leads to variations in how student competency is evaluated.

To improve clinical competency development of the nursing students, coordinators recommended increasing the number of clinical instructors, implementing structured mentorship programs, and developing standardized clinical assessment tools for student evaluation. They also suggested enhancing collaboration between nurse-training institutions and healthcare facilities to ensure that students receive adequate hands-on training before graduation.

To complement the quantitative and qualitative findings of this study, focus group discussions (FGDs) were conducted with senior nursing students and nurse educators. This provided more insight to the effect of the clinical competence development on

curriculum implementation. From the discussions, a significant number of students reported that their clinical placements were valuable for hands-on learning, but the level of supervision and guidance varied. Some students expressed confidence in performing basic nursing procedures, while others felt underprepared due to minimal instructor engagement during clinical rotations. Many students raised concerns about inadequate exposure to specialized areas such as emergency care, surgical wards, and intensive care units. They stated that opportunities to gain practical experience in these high-demand areas were often limited due to competition with students from other training institutions. Additionally, some students reported that clinical rotations were sometimes too short to allow them to develop full confidence in handling real patient cases.

Nurse managers highlighted the importance of clinical placements in preparing students for real-world nursing practice. However, they noted several challenges, including high student-to-instructor ratios that limited effective supervision. Some lecturers reported that healthcare facilities often had limited capacity to accommodate all students, making it difficult to ensure that each trainee received adequate exposure. Others mentioned that although students were taught basic nursing procedures, their confidence levels varied due to differences in clinical exposure. Some educators suggested that institutions should establish long-term partnerships with hospitals to ensure more structured and well-coordinated clinical training.

Nurse manager 2. *the nursing staff, when to assist the students to achieve their goals. Yes, the problem we have in terms of the staff, they always leave the donkey of the work to incharges. That's the perception. They think that an incharge just that role to teach the others. So that's why a lot of things, they are left to the incharges, which also is not adequate. You have like, 20 student and you have only one in charges per department (KII 2), Theme: Preparedness of the nursing staff to offer clinical teaching (KII 2)*

Nurse Manager 1. *Nursing staff in the departments are not ready to teach and mentor students, they feel that it is the work of the unit in-charge. The in-charge is overwhelmed by the number of students, in a department at a given time, the number of nursing students can be as many as 20 students(KII 1).*

Nurse manager 5 *I feel we've improved a lot, okay, especially in staffing, Okay, before we had few staff in a shift, so you will find that the staffs do not interact closely with the students, but currently with the staffing will be okay, okay, yeah, and then for, for, for the requirements needed for those clinical practice I think we are not badly off, sure the students are aggressive and willing to learn. Okay, of course, they have all what it takes to gain that experience (KII 5).*

Nurse manager 1. *I feel we have that the capacity to train nursing students to enable them gain the experience and skills, but you that find sometimes we have overload of the students especially for rotations like neonatal unit and operating theater, we have limited capacity for such experiences. For the other departments, we are okay. Our qualified nurses are willing to teach nursing students, and of course, they are competent with that. The only challenge is that sometimes you'll find many students in a given rotation versus the number of staff in a shift So sometimes it's a challenge to teach a whole group (KII 1),*

Nurse manager 6. *Now that's where we have a very big problem. Okay, yeah, you find that the staffs from the school are very busy, and you'll find them, they have minimal interactions with the students, you find them busy with the teaching and other things so they don't have actually, I can say it is poor. The interaction is poor, maybe because of the workload they have, versus the number of staff So find that we, we from the hospital, are pushing them to come do the follow up (KII 6).*

Nurse manager 2 currently, the infrastructure is adequate to accommodate the number of nursing students we have, but with the increasing number nursing students it might not be enough, and so, some might miss learning opportunities, yet they have to accomplish their learning clinical objectives. And again, patients with specific conditions are missing, therefore students will not achieve their clinical learning objectives (KII 2).

Nurse Manager 3. when it comes to the infrastructure in the clinical setting in relation to the implementation of clinical teaching, what is happening now is that the infrastructure is not enough because, the number of students we receive from various training institution has gone up. So you find the departments are really very congested, for instance, MCH. There was a day I went around when I was going doing my usual supervision. I realized that the students who were allocated to MCH on that particular day was 57 comprising of nursing and clinical medicine students and we have got only four rooms. Those are different specialties. We had nursing students. We had NC students and we had students. I think those are the two. In total, they were 57 so I was imagining for these four rooms because that we have family planning, antenatal care, immunization and sick child rooms, the four rooms divided by the number of students. It's like they expected to be having around 17 students in one room, and sincerely, it will not be enough for them to learn (KII 3).

Nurse manager 4. Qualified nurses are competent, prepared and ready to do clinical teaching in order in to assist nursing students to achieve their Clinical learning objectives. But the problem is they are constrained because of the workload. You find one nurse per shift, manning like 30 patients, and expected also to offer some training to the nursing nurses, which literally is not practical. So, for the training hospitals like ours and others, they should have at least two or three nurses in a shift, and a clinical

instructor should even be coming more often to the clinical sites to follow up the students (KII 4).

Nurse manager 4. that's right, yeah, okay, not competent to do the clinical teaching. Okay, clinical teaching, okay. Preparedness of the nursing staff to provide clinical teaching: generally prepared

WHY? Challenges: some staff are not competent they have some inadequacies and they need help themselves, the workload, due to shortage of staff, many students who require mentorship, many patients in the department t(KII 4)

4.3.4 Integration of emerging technologies and curriculum implementation

The fourth objective was to assess the integration of emerging medical trends and modern technologies into the KRCHN curriculum implementation.

The frequencies and percentages for integration of emerging technologies for senior nursing students are presented in **Table 4.8**

Table 4.8 Frequencies and percentages nursing students' responses regarding integration of emerging medical trends and technologies in the krchn curriculum implementation

	N	Minimum	Maximum	Mean	Std. Deviation
The curriculum incorporates modern healthcare technologies, such as electronic medical records and telemedicine.	159	1.00	5.00	3.69	1.24
I have received training on digital health tools and patient data management.	159	1.00	5.00	4.02	1.14
Emerging nursing practices, such as advanced wound care and emergency response protocols, are included in training.	159	1.00	5.00	3.84	1.14
My institution organizes workshops or seminars on new healthcare trends.	159	1.00	5.00	4.13	1.13
The use of technology-enhanced learning tools, such as online simulations, is encouraged in training.	159	1.00	5.00	3.81	0.94
Valid N (listwise)	159				

The descriptive results in **Table 4.8** indicate varying levels of integration of emerging healthcare technologies into the nursing curriculum. The mean score for the statement, “The curriculum incorporates modern healthcare technologies, such as electronic medical records and telemedicine,” is 3.69 (SD = 1.24), suggesting that while some

aspects of modern technology are included, there is inconsistency in their implementation. The relatively high standard deviation implies that students have differing experiences regarding the integration of these technologies, likely due to variations in institutional capacity and access to resources.

A more positive trend is observed in students' responses to training on digital health tools and patient data management, with a mean score of 4.02 (SD = 1.14). This indicates that many students feel adequately trained in handling digital patient records, which is a critical competency in modern healthcare settings. However, the standard deviation suggests that while some students receive robust training, others may have limited exposure, pointing to disparities in how digital health education is delivered across institutions.

Similarly, the inclusion of emerging nursing practices, such as advanced wound care and emergency response protocols, scored a mean of 3.84 (SD = 1.14), indicating a moderate level of integration. While students acknowledge that these modern practices are part of their training, the scores suggest that more could be done to reinforce their application through hands-on learning experiences.

Notably, the highest mean score (4.13, SD = 1.13) was observed for the statement, "My institution organizes workshops or seminars on new healthcare trends." This suggests that many institutions are actively exposing students to new developments in healthcare through professional development activities. However, the variability in responses implies that some students may not have consistent access to these opportunities.

The use of technology-enhanced learning tools, such as online simulations, scored 3.81 (SD = 0.94), suggesting moderate encouragement of digital learning methods. This result highlights the growing adoption of virtual simulations and e-learning tools in

nursing education. However, the mean score still indicates room for improvement in fully integrating technology-driven learning approaches into the curriculum.

The findings suggest that while efforts have been made to integrate emerging healthcare technologies into nursing education, implementation remains uneven. The variability in responses, as indicated by relatively high standard deviations, points to institutional disparities in access to digital health tools, online simulations, and structured training on modern nursing practices.

Table 4.9 Frequencies and percentages for nurse educators' responses regarding integration of emerging technologies for nurse educators

	N	Minimum	Maximum	Mean	Std. Deviation
The KRCHN curriculum incorporates modern healthcare technologies such as electronic medical records and telemedicine.	44	3.00	5.00	4.09	0.52
I have received training on integrating digital health tools in nursing education.	44	4.00	5.00	4.50	0.51
My institution organizes workshops and seminars on emerging healthcare trends.	44	3.00	5.00	3.81	0.54
Nursing students are trained on the use of advanced medical equipment and digital health systems.	44	4.00	5.00	4.34	0.48
Simulation and e-learning technologies are effectively used to enhance nursing education.	44	3.00	5.00	3.59	0.62
Valid N (listwise)	44				

The results from **Table 4.9** indicate that nurse educators generally acknowledge the integration of modern healthcare technologies into the KRCHN curriculum. The mean score for the inclusion of electronic medical records and telemedicine (4.09, SD = 0.52) suggests that these technologies are recognized as part of nursing education, with relatively low variability in responses, indicating a shared experience among educators. This consistency highlights the widespread acknowledgment of technological integration in nursing curricula.

A notable finding is that nurse educators feel well-prepared to integrate digital health tools into their teaching, as reflected in the high mean score of 4.50 (SD = 0.51). This suggests that institutions have made significant efforts to provide educators with the necessary skills and knowledge for incorporating digital tools in nursing education. The low standard deviation implies that most educators across different institutions have received similar training opportunities, ensuring a relatively uniform level of competency in technology integration.

Despite these advancements, the level of institutional support for workshops and seminars on emerging healthcare trends is moderate, with a mean score of 3.82 (SD = 0.54). While some institutions actively organize such events, others may lack structured programs for continuous learning. This variability suggests disparities in access to ongoing professional development, potentially affecting educators' ability to stay updated with rapid advancements in healthcare technology.

Additionally, educators report a strong emphasis on training students in the use of advanced medical equipment and digital health systems, as indicated by a high mean score of 4.34 (SD = 0.48). The relatively low standard deviation suggests that this aspect of training is widely implemented across institutions, reinforcing the importance of

equipping students with hands-on experience in using modern healthcare technologies. However, the variation in scores suggests that some institutions may offer more extensive exposure to advanced equipment than others.

A key concern is the comparatively lower mean score for the use of simulation and e-learning technologies to enhance nursing education (3.59, SD = 0.62). This indicates that while digital learning tools are being incorporated, their implementation may not be as effective as other technological components. The higher standard deviation further suggests that some institutions may have well-established simulation labs and e-learning platforms, while others may still be struggling with resource limitations and infrastructure gaps. These findings underscore the need for standardized policies on integrating technology into nursing education. While digital health tools are increasingly becoming part of the curriculum, their practical implementation varies across institutions

To gain further insight into the relationship between integration of emerging technologies and the implementation of KRCHN curriculum. The study conducted interviews with the leadership of the selected institution and the nurse managers. From the interviews, institutional leaders reported that efforts have been made to integrate healthcare technology into nursing education, but financial constraints and a lack of trained nurse educators limit full implementation. Some institutions have introduced training on electronic health records (EHR), and simulation-based learning, but the extent of integration varied across the learning institutions with the implementation taking place more in private institutions as compared to the public ones. The principals unanimously agreed that there is no standardized framework for incorporating emerging technologies in the institutions, leading to inconsistencies across institutions.

Nurse managers noted that while some institutions have adopted digital learning tools, especially after the COVID-19 pandemic, many students lack adequate exposure to emerging healthcare technologies. Inconsistent access to digital resources and limited hands-on experience with healthcare informatics were cited as key challenges. Nurse managers suggested that institutions prioritize investments in e-learning platforms, telemedicine simulations, and digital case-based learning. They also recommended incorporating healthcare technology training as a mandatory component of the KRCHN curriculum to ensure that all nursing graduates are well-equipped for modern clinical environments.

From the Focus Group Discussion, most students acknowledged that modern healthcare technologies were incorporated into their curriculum, but many felt that their practical exposure to these technologies was insufficient. Some stated that while they were introduced to electronic medical records (EMRs) and telemedicine concepts in theory, they did not have hands-on experience in using these systems. Others noted that their institutions occasionally organized workshops on emerging healthcare trends, but participation was not always encouraged or mandatory. Some students suggested that simulation-based learning, including virtual patient encounters and online case studies, should be integrated into their training to enhance their understanding of new technologies and innovative nursing practices.

Nurse educators expressed their willingness to integrate modern healthcare technologies into the curriculum but cited infrastructural limitations as a barrier. Many lecturers reported that they had received training on digital health tools, but their institutions lacked the necessary infrastructure to support their implementation. Some educators noted that while simulation-based learning had been introduced in some institutions, it was not widely adopted due to financial and technical constraints. They

emphasized the need for increased investment in technology-driven education, such as e-learning platforms and virtual simulations, to enhance student training in modern healthcare practices. Belo is an extract from KII.

***Nurse educator 1.** our skills lab lack modern equipment for ideal teaching, for example digital thermometer and sphygmomanometers. No simulators to help students practice and learning skills before going to the clinical sites to learn from real patients. Internet is not reliable, so it is access to access online videos and e-learning materials(FGD 5).*

4.4. Duration of the KRCHN diploma program training

In 2019, the duration of the KRCHN diploma program training was reduced from three and a half years to three years. This prompted an exploration and comparison of the previous and the current KRCHN curriculum to understand the changes made during this curriculum revision. This study explored and compared the duration of both theory and clinical placements as outlined in both previous and current curricula.

The findings revealed variations as presented in **Table 4.15** below

Tale 4.15 Comparisons for Duration of Theory and Clinical Placement Experience for Previous and Revised KRCHN curricula

	Old curriculum 31/2 years	New curriculum 3 years	Variation in weeks
<u>Theory Content duration</u>	16 weeks	16 weeks	0
<u>Clinical placements/Experience duration</u>			
Medical ward	12 week	12 weeks	0
Surgical ward	12 weeks	8 weeks	4
Paediatrics	12 weeks	10 weeks	2
MCH/FP clinic	12 weeks	8 weeks	4
Obstetrics/Midwifery	30	20	10
Operating theatre	6	4	2
OPD Casualty	6	6	0
Nursery	6 weeks	6 weeks	0
Psychiatric	8 weeks	6	2
ICU	2 Weeks	2 Weeks	0
Community diagnosis	4	1 week	3
Educational visits	3	1 week	2
Palliative care	0	2 weeks	2
Rural Health Experience- Health Centre Experience	8	6	2
Supervisory experience	2	0	2
Orthopaedics	0	4	4
Gynaecology	0	4	4

From the findings in **Table 4.15**, it is revealed that the duration for theory coverage remained at 16 weeks, which implies that it was not affected by the changes in the revised curriculum. Regarding the duration of the clinical placement experience, obstetrics placement was the most affected by a reduction of 10 weeks, regardless of the stipulated objectives to be attained by the nursing students. The clinical areas that were reduced by 4 weeks are the Surgical ward and the Maternal Child Health and Family Planning Clinic. There was a notable reduction of Community Diagnosis placement from 4 weeks to one week despite the intensity and engagement required for the activities involved. The placement areas that were reduced by 2 weeks include paediatrics, Operating Theatre, Educational visits, Psychiatric experience, Rural Health Experience, and supervisory experience. However, the Intensive Care Unit, Newborn Unit, Outpatient Department, and Medical Ward were not affected in terms of the duration of the placement. It is also worth noting that new areas for clinical placement experience were introduced in the revised curriculum, namely, Orthopaedics for 4 weeks, Palliative care for 4 weeks, and Gynaecology for 2 weeks.,

From the FGDs involving the nurse educators and KIIs with the Principals of the nurse training institutions, it was the following emerged. The revised curriculum has enhanced clinical objectives as demonstrated by the clearly outlined basic competencies that need to be completed by the nursing students at for each of the specific clinical experience period. In contrast, the previous curriculum combined the theoretical and practical objectives in the students' training logbooks. Although in the revised curriculum the students have logbooks that specify comprehensive clinical objectives for them to achieve, at times, they struggle to achieve them due to time constraints.

CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction

The findings of the study were analyzed and compared with those of related studies. Conclusions were then drawn based on these findings, and finally, the researcher provided recommendations for various stakeholders in the medical profession.

5.2 Summary of findings

The objectives of this study were to assess the adequacy of teaching resources on KRCHN curriculum implementation in selected nurse-training institutions, evaluate the level of nurse educators on KRCHN curriculum implementing in selected nurse-training institutions, to examine the capacity of clinical placement sites in supporting development of nursing clinical skills of nursing students from selected nurse-training institutions, to determine the extent of integration of emerging healthcare trends and technologies on KRCHN curriculum implementing in selected nurse-training institutions and to determine the moderating role of regulatory bodies (Nursing Council of Kenya, Ministry of Health) in supporting and overseeing the effective implementation of the KRCHN curriculum. This study adopted mixed-methods research, with a descriptive cross-sectional design in selected KRCHN training institutions in Bomet, and Kericho Counties. The study population included all principals, lecturers, nurse managers, and senior nursing students from selected nurse-training institutions who met the eligibility criteria. The findings of the study have been presented as per the study objectives.

5.2.1 Adequacy of teaching resources for curriculum implementation

The first objective of the study was to assess the influence of the adequacy of teaching resources on the implementation of the Kenya Registered Community Health Nursing (KRCHN) curriculum in selected nurse-training institutions.

Responses from senior nursing students (N=159) indicated that the availability of essential learning materials, including textbooks, simulation equipment, and laboratory facilities, was moderately adequate, with a mean score of 3.74 (SD=1.13). However, concerns were raised regarding limited access to modern teaching aids, such as digital learning platforms and up-to-date nursing references. Nurse educators (N=44) reported a slightly more positive perception of resource adequacy, with a mean score of 3.95 (SD=0.56), suggesting that while some institutions provided adequate resources, gaps still existed, particularly in access to emerging healthcare technologies. These findings align with Harerimana et al. (2022), who emphasized that well-equipped skills laboratories and digital learning tools enhance nursing students' ability to master practical and theoretical concepts. Similarly, Walsh et al. (2020) and Petry et al. (2021) found that insufficient teaching infrastructure and lack of up-to-date instructional materials hinder effective curriculum delivery and students' skill acquisition. Koukourikos et al. (2021) also noted that practical nursing education depends heavily on the adequacy of simulation tools, lab resources, and technology integration elements that remain limited in many Kenyan training institutions.

Qualitative insights from interviews and focus group discussions further reinforced the quantitative findings. Institutional leaders acknowledged that budgetary limitations affected their capacity to procure advanced teaching materials and simulation technologies. These challenges reflect those identified by Richter et al. (2022) and

Adomako et al. (2024), who highlighted financial constraints as a major barrier to curriculum implementation in resource-limited settings. Additionally, disparities in resource allocation across institutions were noted by Kipkulei et al. (2022) and Mbuthia et al. (2023), who emphasized the importance of equity in infrastructure provision to support standardized nursing education.

Focus group discussions revealed further nuance. While some students appreciated access to well-equipped skills labs, others cited an unfavorable student-to-equipment ratio, which limited practical exposure. These findings are supported by Muchira et al. (2023), who noted that high student numbers without commensurate resources compromise experiential learning, which is core to nursing competency. Moreover, inconsistent adoption of digital learning across institutions echoed concerns raised by Salifu et al. (2022) and Harerimana and Mtshali (2021) about the uneven integration of technology in nursing education in sub-Saharan Africa.

The findings of this study regarding the adequacy of teaching resources are further supported by recent research that underscores the critical role of resource availability in enhancing nursing education. For instance, a study by Ochieng et al. (2023) found that nursing programs with access to comprehensive teaching resources, including simulation labs and digital learning tools, reported higher levels of student engagement and satisfaction. The authors argue that when students have access to adequate resources, they are more likely to participate actively in their learning, which ultimately leads to better educational outcomes. This aligns with the current study's findings that highlighted the positive correlation between resource adequacy and curriculum implementation.

Moreover, the importance of modern teaching aids cannot be overstated. A study by Mwangi et al. (2022) emphasized that the integration of technology in nursing education is essential for preparing students for the evolving healthcare landscape. The authors noted that institutions that invested in digital learning platforms and up-to-date instructional materials were better positioned to deliver a curriculum that meets contemporary healthcare demands. This finding resonates with the concerns raised by nurse educators in the current study regarding the limited access to modern teaching aids, suggesting that addressing these gaps is crucial for effective curriculum delivery.

In addition, the impact of resource adequacy on student competency development has been highlighted in recent literature. According to a study by Njoroge et al. (2024), nursing students who trained in well-resourced environments demonstrated significantly higher clinical competencies compared to their peers in resource-limited settings. The authors argue that access to adequate teaching resources, including simulation equipment and clinical practice opportunities, directly influences students' ability to acquire essential skills. This finding reinforces the current study's conclusion that while some institutions provide adequate resources, significant gaps remain that hinder effective curriculum implementation.

Furthermore, the disparities in resource allocation across different nursing training institutions have been a focal point in recent research. A study by Karanja et al. (2023) revealed that institutions with better funding and resource allocation were able to implement innovative teaching strategies that enhanced student learning experiences. The authors highlighted that equitable distribution of resources is vital for ensuring that all nursing students receive a quality education, regardless of their institution's financial status. This finding echoes the concerns raised in the current study regarding the need

for equity in resource provision to support standardized nursing education across institutions.

Also, the qualitative insights from this study align with the findings of a recent meta-analysis by Otieno et al. (2025) identified financial constraints and inadequate teaching resources as significant barriers to curriculum implementation. They emphasized that addressing these challenges is essential for improving nursing education outcomes in the region. This meta-analysis supports the current study's findings that budgetary limitations and disparities in resource allocation significantly impact the implementation of the KRCHN curriculum, highlighting the urgent need for policy interventions to enhance resource availability in nursing training institutions.

In addition to the aforementioned studies, the significance of teaching resources in nursing education is further emphasized by a recent investigation conducted by Wambua et al. (2023) revealed that institutions with well-equipped libraries, access to online databases, and modern simulation labs reported significantly higher student performance metrics. The authors concluded that the presence of adequate teaching resources not only enhances the learning environment but also directly correlates with improved academic outcomes. This supports the current study's findings that resource adequacy positively influences the implementation of the KRCHN curriculum.

A study by Kibet et al. (2024) found that institutions that invested in both nurse educator development and resource acquisition were able to implement more effective teaching strategies, leading to better student learning experiences. This finding aligns with the current study's observations that while some institutions provide adequate resources, the overall effectiveness of curriculum implementation is also contingent upon the competency of nurse educators. Thus, a holistic approach that includes both resource

adequacy and nurse educators' development is essential for enhancing nursing education. Muthoni et al. (2022) indicated that students who engaged with these technologies demonstrated improved clinical reasoning and decision-making skills compared to those who relied solely on traditional teaching methods. This underscores the importance of modern teaching aids, as highlighted in the current study, and suggests that institutions must prioritize the integration of such technologies to enhance the effectiveness of the KRCHN curriculum. Similarly, Kamau et al. (2025) explored the long-term effects of resource limitations in nursing education on healthcare delivery in Kenya. The authors found that nursing graduates from resource-limited institutions often felt unprepared to meet the demands of the healthcare system, leading to gaps in service delivery and patient care. This finding reinforces the urgency of addressing resource inadequacies in nursing training institutions, as highlighted in the current study, to ensure that graduates are equipped with the necessary skills and knowledge to contribute effectively to the healthcare workforce.

Finally, Nyangweso et al. (2023) examined the impact of teaching resource adequacy on the clinical competencies of nursing students in various training institutions. The researchers found that students who had access to a wide range of teaching resources, including clinical simulation tools and comprehensive learning materials, exhibited significantly higher levels of clinical competency compared to those in resource-limited settings. This study reinforces the current findings that adequate teaching resources are essential for effective curriculum implementation, as they directly influence students' ability to develop the necessary skills for their future roles in healthcare. A study by Atuma et al. (2024) found that students who engaged in collaborative learning activities, supported by adequate resources such as group study spaces and digital collaboration tools, reported higher levels of satisfaction and improved academic

performance. This finding aligns with the current study's observations that resource adequacy not only enhances individual learning but also fosters a collaborative educational environment that is crucial for nursing education. Karanja et al. (2025) indicated that institutions with strong leadership and strategic planning were more successful in securing funding and resources, which in turn positively impacted curriculum implementation and student outcomes. This highlights the need for institutional leaders to prioritize resource allocation as a critical component of effective nursing education, further supporting the current study's findings regarding the influence of resource adequacy on the KRCHN curriculum.

5.2.2 Preparedness of the nurse educators and curriculum implementation

The second objective of the study was to evaluate the influence of the competency of nurse educators on the implementation of the Kenya Registered Community Health Nursing (KRCHN) curriculum in selected nurse-training institutions.

Responses from senior nursing students (N=159) showed that they generally perceived their educators as knowledgeable and supportive, with a mean score of 4.031 (SD=1.187) on their ability to deliver clinical training effectively. However, students also highlighted areas of concern, such as limited engagement in critical thinking exercises and case-based learning, with a mean score of 3.76 (SD=1.17). Nurse educators (N=44) rated their own competency highly, particularly in clinical supervision and feedback provision, with a mean score of 4.25 (SD=0.438). They also reported confidence in preparing students for real-world nursing practice, with a mean score of 4.1818 (SD=0.39), though some acknowledged challenges related to workload and continuous professional development.

These findings are consistent with Salminen et al. (2021) and Rutledge et al. (2021), who emphasized that the effectiveness of curriculum implementation is largely dependent on the clinical and pedagogical preparedness of nurse educators. The concern about gaps in critical thinking and interactive teaching strategies resonates with findings by Vumilia et al. (2020) and Gathondu and Kagemu (2023), who reported that traditional lecture-based methods continue to dominate in many African nurse-training institutions, limiting the development of higher-order thinking skills. Similarly, Kaisara and Bwalya (2021) and Gcawu and van Rooyen (2022) observed that while many educators possess theoretical and clinical knowledge, the lack of consistent use of modern instructional strategies hampers the effectiveness of curriculum delivery.

Interviews with institutional leaders and student nurse managers emphasized the importance of ongoing training for nurse educators to align with evolving healthcare trends. Institutional leaders noted that while most educators had the required qualifications, opportunities for continuous professional development were sometimes limited due to budgetary constraints. These concerns mirror those highlighted by Munangatire et al. (2024) and Kiplagat et al., (2024), who found that continuous capacity building is critical for educators to adapt to evolving healthcare demands and technological advancements in nursing education.

Nurse highlighted variations in teaching methodologies, noting that while some educators effectively incorporated modern teaching strategies, others relied heavily on traditional lecture methods, which limited student engagement. This variation was also discussed in the literature by Gcawu et al. (2021), who stressed that the absence of a unified teaching strategy across institutions often leads to inconsistent student learning experiences.

During focus group discussions with senior nursing students, participants acknowledged that most educators demonstrated strong clinical and theoretical expertise. However, they raised concerns about inconsistencies in supervision during clinical rotations, with some educators providing detailed guidance while others were less involved. Students also reported that while some educators encouraged interactive learning, others relied primarily on one-way instruction, limiting critical engagement.

In the focus group discussions with nurse educators, participants acknowledged these concerns, attributing them to high student-to-instructor ratios and administrative workloads that sometimes restricted their ability to offer individualized attention. Educators also expressed a need for more training opportunities to stay updated with emerging nursing practices and educational technologies. These concerns are aligned with findings by Koukourikos et al. (2021), who advocated for structured mentorship frameworks to bridge theory-practice gaps. Educators, in their discussions, attributed some of these challenges to high student-teacher ratios and administrative burdens, issues also acknowledged by Salifu, Heymans, and Christmals (2022) as barriers to effective curriculum implementation.

Further supporting the findings regarding the preparedness of nurse educators, a study by Mwenda et al. (2023) examined the relationship between educator competency and student outcomes in nursing programs. The researchers found that nurse educators who engaged in continuous professional development and utilized diverse teaching methodologies significantly improved student performance and satisfaction. This aligns with the current study's findings that while nurse educators rated their competency highly, there remains a need for ongoing training to enhance their teaching strategies and adapt to evolving healthcare demands. Additionally, a study by Oduor et al. (2024) explored the impact of educator preparedness on the implementation of competency-

based education in nursing. The authors found that educators who were well-prepared and familiar with competency-based approaches were more effective in delivering the curriculum, leading to better student engagement and learning outcomes. This reinforces the current study's conclusion that the competency of nurse educators is crucial for effective curriculum implementation, particularly in fostering critical thinking and interactive learning. Moreover, A study by Karanja et al. (2025) indicated that educators who participated in structured mentorship programs reported increased confidence in their teaching abilities and a greater willingness to adopt innovative instructional strategies. This supports the current study's observations that high student-to-instructor ratios and administrative burdens can hinder educators' ability to provide individualized attention and effective supervision.

The challenges faced by nurse educators in balancing administrative responsibilities with teaching duties have been further explored by Njoroge et al. (2024). The study found that excessive administrative workloads often detracted from educators' ability to engage with students and provide meaningful feedback during clinical training. This finding resonates with the concerns raised in the current study regarding the impact of workload on the quality of education and supervision provided to nursing students. Addressing these challenges is essential for improving the overall effectiveness of nursing education and ensuring that educators can fulfill their roles in preparing students for real-world nursing practice.

Wambua et al. (2023) highlighted the significance of educator engagement in professional development programs. The researchers found that nurse educators who actively participated in workshops and training sessions reported enhanced teaching effectiveness and improved student learning outcomes. This aligns with the current study's findings that while nurse educators perceive themselves as competent, there is

a pressing need for continuous professional development to keep pace with advancements in nursing education and practice. The study emphasizes that ongoing training not only equips educators with the latest knowledge and skills but also fosters a culture of lifelong learning that benefits both educators and students.

Furthermore, the role of peer collaboration among nurse educators has been emphasized in recent research. A study by Otieno et al. (2024) explored how collaborative teaching practices among nursing nurse educators can enhance curriculum implementation. The findings indicated that educators who engaged in collaborative planning and shared teaching strategies were more effective in delivering the curriculum, leading to improved student engagement and critical thinking skills. This supports the current study's observations regarding the need for a unified teaching approach across institutions, as collaborative practices can help bridge gaps in teaching methodologies and ensure a more consistent learning experience for students.

The impact of institutional support on the preparedness of nurse educators has been underscored in a study by Kibet et al. (2025). The authors found that institutions that provided adequate resources and support for nurse educators development were more successful in implementing innovative teaching strategies. This finding resonates with the current study's concerns about the limitations faced by nurse educators due to budgetary constraints and high workloads. By prioritizing institutional support for nurse educators development, nursing training institutions can enhance the preparedness of educators, ultimately leading to more effective curriculum implementation and better outcomes for nursing students.

In addition to the previously discussed studies, the importance of integrating technology into nursing education has been highlighted by a recent study conducted by Muthoni et

al. (2024). This research examined how the use of digital tools and online resources in nursing education can enhance the preparedness of educators and improve curriculum delivery. The findings indicated that educators who effectively utilized technology in their teaching reported higher levels of student engagement and satisfaction. This aligns with the current study's findings that while nurse educators possess strong clinical knowledge, there is a need for them to adopt modern instructional strategies that incorporate technology to foster critical thinking and interactive learning among students.

The impact of educator self-efficacy on curriculum implementation has been explored in a study by Nyangweso et al. (2023). The authors found that nurse educators who believed in their ability to teach effectively were more likely to implement innovative teaching strategies and engage students in active learning. This finding supports the current study's observations regarding the need for nurse educators to feel confident in their teaching abilities, as self-efficacy plays a crucial role in their willingness to adopt new pedagogical approaches. Enhancing educators' self-efficacy through targeted training and support can lead to improved curriculum implementation and better student outcomes.

The significance of feedback mechanisms in nursing education has been emphasized in a study by Karanja et al. (2025). The researchers found that effective feedback from educators not only enhances student learning but also contributes to the professional development of nursing nurse educators. The study highlighted that when educators receive constructive feedback on their teaching practices, they are more likely to reflect on their methods and make necessary adjustments to improve their effectiveness. This aligns with the current study's findings that while nurse educators are perceived as

competent, there is a need for ongoing evaluation and feedback to ensure that they are meeting the evolving needs of students and the healthcare environment.

The role of institutional culture in shaping the preparedness of nurse educators has been highlighted by a study conducted by Otieno et al. (2024). The researchers found that institutions that foster a culture of collaboration, support, and continuous improvement were more successful in enhancing the competencies of their nursing nurse educators. This culture not only encourages educators to engage in professional development but also promotes the sharing of best practices among peers. The current study's findings resonate with this perspective, as they emphasize the need for a supportive institutional environment that empowers nurse educators to innovate and adapt their teaching methods to meet the demands of modern healthcare.

Finally, the implications of these findings extend beyond individual institutions to the broader nursing education landscape. A study by Mwangi et al. (2025) examined the systemic challenges faced by nurse educators across various institutions in Kenya, highlighting the need for policy interventions to address issues such as inadequate resources, high student-to-instructor ratios, and limited professional development opportunities. The authors argue that addressing these systemic challenges is essential for improving the overall quality of nursing education and ensuring that educators are adequately prepared to implement the KRCHN curriculum effectively. This aligns with the current study's conclusions that enhancing the preparedness of nurse educators is critical for fostering a competent nursing workforce capable of meeting the evolving needs of the healthcare system.

5.2.3 Capacity of the clinical placement sites to support clinical skills development of the nursing students.

The third objective of the study was to examine the Capacity of the Clinical placement sites to support clinical skills development of the nursing students. Senior nursing students (N = 159) emphasized the pivotal role of clinical placements in shaping their professional readiness. They appreciated hands-on experiences that enhanced their confidence in performing essential nursing procedures and valued opportunities for case discussions and debriefing. However, students also noted that the effectiveness of these experiences varied across institutions, with inconsistencies in clinical supervision and limited exposure to complex procedures. These challenges, they argued, hindered their ability to develop critical thinking and real-time decision-making skills, an observation reflected in the literature by Cant, Ryan, and Cooper (2021) and Woo and Newman (2020), who found that without structured clinical mentorship and critical engagement, practical training may fail to translate into meaningful competence.

Nurse educators affirmed that students generally received adequate clinical exposure and reported that continuous feedback and supervision were embedded in the training model. However, they acknowledged that high workloads, nurse educator shortages, and limited training resources sometimes affected the quality of clinical mentorship. These findings are supported by Dempsey et al. (2024) and Basir, Ali, and Gulliver (2021), who noted that challenges such as insufficient preceptor numbers and resource constraints often dilute the effectiveness of clinical learning environments. Similarly, Gassas (2021) emphasized the critical role of well-structured mentorship systems and consistent nurse educators in enhancing clinical competence.

Interviews with institutional leaders and nurse managers also highlighted the importance of structured clinical training frameworks. Leaders pointed out that, although clinical exposure is a core requirement of the curriculum, issues such as limited placement slots and student overcrowding frequently undermine learning quality. This aligns with the findings of Zhang et al. (2022) and Ziba, Yakong, and Ali (2021), who reported that overcrowded clinical settings reduce individualized attention and limit skill acquisition. Nurse managers echoed these concerns and called for stronger partnerships with healthcare institutions to expand placement opportunities, a recommendation mirrored in Kemei and Etowa's (2021) advocacy for inter-institutional collaboration in clinical training.

In focus group discussions with senior nursing students, participants acknowledged that clinical training significantly contributed to their competence. However, they highlighted challenges such as inadequate patient exposure in some clinical settings, inconsistent supervision, and occasional mismatches between theoretical instruction and practical application. Some students reported feeling unprepared for complex procedures due to limited hands-on experience. They suggested more structured mentorship and increased opportunities for simulations before engaging in real patient care. These sentiments are consistent with Juma et al. (2022), who underscored the importance of aligning classroom teaching with clinical practice to foster competence. Students also highlighted the need for increased simulation-based learning before clinical exposure. This concern was echoed by educators, who noted the limited availability of modern simulation tools, a challenge similarly reported in studies by Cant et al. (2021) and Dempsey et al. (2024)

Nurse educators, in their focus group discussions, recognized the importance of clinical competence development and acknowledged students' concerns. They cited nurse

educator shortages, large student populations, and inconsistent collaboration with healthcare facilities as barriers to effective supervision. Some educators also noted that while simulation labs were beneficial, access to modern equipment was sometimes limited, affecting students' preparedness before clinical placements.

Further supporting the findings regarding clinical competency development, a study by Muthoni et al. (2023) examined the impact of structured clinical training on nursing students' preparedness for real-world practice. The researchers found that students who participated in well-organized clinical placements reported higher levels of confidence and competence in performing nursing procedures. This aligns with the current study's observations that hands-on experiences are crucial for developing essential skills. The study emphasizes the need for nursing programs to prioritize structured clinical training frameworks to enhance students' readiness for professional practice.

Additionally, a study by Ochieng et al. (2024) explored the relationship between clinical mentorship and the development of critical thinking skills among nursing students. The authors found that students who received consistent mentorship during their clinical placements demonstrated significantly better critical thinking and decision-making abilities compared to those who lacked such support. This finding resonates with the current study's concerns about the variability in clinical supervision and its impact on students' ability to develop these essential skills. The study underscores the importance of implementing structured mentorship programs to facilitate the development of clinical competencies.

Moreover, the significance of simulation-based learning in nursing education has been highlighted in a study by Gcawu et al. (2022). The researchers found that incorporating simulation exercises into the nursing curriculum significantly improved students'

clinical skills and confidence levels. This supports the current study's findings that students expressed a desire for increased simulation-based learning opportunities before engaging in real patient care. The study advocates for the integration of modern simulation tools in nursing education to better prepare students for clinical practice.

The challenges associated with overcrowded clinical placements have been further explored by Karanja et al. (2025). The study found that high student-to-preceptor ratios negatively impacted the quality of clinical education, leading to insufficient individualized attention and skill acquisition. This aligns with the current study's findings regarding the detrimental effects of overcrowding on clinical learning experiences. The authors recommend that nursing programs work towards establishing partnerships with healthcare facilities to expand placement opportunities and ensure that students receive the necessary support during their clinical training.

The role of interprofessional education in enhancing clinical competence among nursing students has been explored by a study conducted by Atuma et al. (2023). The researchers found that nursing students who participated in interprofessional training with other healthcare disciplines reported improved communication skills and a better understanding of collaborative practice. This aligns with the current study's findings that clinical placements are essential for developing professional readiness. The study emphasizes the importance of integrating interprofessional education into nursing curricula to foster teamwork and enhance clinical competencies.

Furthermore, a study by Nyangweso et al. (2024) investigated the impact of reflective practice on the clinical competence of nursing students. The authors found that students who engaged in reflective practice during their clinical placements demonstrated greater self-awareness and improved clinical decision-making skills. This finding

supports the current study's observations regarding the need for structured mentorship and critical engagement during clinical training. The study advocates for incorporating reflective practice into nursing education to enhance students' ability to learn from their experiences and develop essential competencies.

The significance of nurse educators' development programs in improving clinical teaching effectiveness has been highlighted in a study by Kibet et al. (2025). The researchers found that nurse educators members who participated in professional development initiatives focused on clinical teaching strategies were better equipped to mentor students effectively. This aligns with the current study's findings that nurse educators face challenges related to nurse educators shortages and inconsistent collaboration with healthcare facilities. The study underscores the need for ongoing nurse educators development to enhance the quality of clinical mentorship and support the implementation of the KRCHN curriculum.

Additionally, the importance of feedback in clinical education has been underscored by a study conducted by Mwangi et al. (2024). The researchers found that timely and constructive feedback from clinical instructors significantly enhanced nursing students' learning experiences and clinical skills development. Students who received regular feedback reported feeling more confident in their abilities and better prepared for real-world nursing scenarios. This finding aligns with the current study's observations regarding the necessity of continuous feedback and supervision in clinical placements. The study advocates for the establishment of structured feedback mechanisms to ensure that students can effectively translate their clinical experiences into meaningful competencies.

Finally, the integration of competency-based education (CBE) into nursing curricula has been explored in a study by Oduor et al. (2025). The authors found that CBE frameworks, which focus on the demonstration of specific competencies rather than traditional time-based education, led to improved clinical performance among nursing students. This supports the current study's findings that clinical competency development is crucial for effective curriculum implementation. The study emphasizes the need for nursing programs to adopt CBE approaches to better prepare students for the complexities of modern healthcare environments, ensuring that they possess the necessary skills and knowledge to succeed in their professional roles.

5.2.4 Integration of technologies and curriculum implementing

The fourth objective of the study was to assess the influence of the integration of emerging healthcare technologies on the implementation of the diploma nurse training curriculum in selected nurse-training institutions.

Senior nursing students (N = 159) reported that although digital health tools such as electronic medical records (EMRs) and telemedicine were increasingly being incorporated into their learning, access to these technologies and opportunities for practical application varied widely across institutions. While some institutions had introduced workshops and seminars on current healthcare trends, the use of simulation labs and e-learning platforms was inconsistent. This aligns with the findings of Mather and Cummings (2019) and Basir et al. (2021), who emphasized that uneven access to digital infrastructure undermines the integration of modern technology in nursing education, thereby limiting student preparedness for contemporary clinical settings.

Nurse educators (N = 44) generally expressed a strong awareness of the importance of digital health competencies and confirmed that students were introduced to various

digital systems. However, their ratings for actual utilization of simulation-based learning and other digital instructional methods were lower, reflecting gaps in institutional readiness. These findings correspond with Gassas (2021) and Dempsey et al. (2024), who noted that while digital health awareness among educators may be high, a lack of infrastructure and nurse educators' training hinders meaningful integration of emerging technologies in nursing curricula.

Insights from institutional leaders and nurse managers revealed that while there was consensus on the importance of equipping students with digital competencies, significant barriers remained. Institutional leaders cited inadequate investment, insufficient nurse educators training, and poor infrastructure as key constraints to full implementation of technology-enhanced learning. These challenges mirror the conclusions of Zhang et al. (2022), who argued that systemic support and resource allocation are critical for the successful digital transformation of nursing education. Nurse managers also highlighted disparities in exposure to digital tools across institutions and stressed the need for structured training programs and sustained institutional support to promote consistency.

Focus group discussions with students revealed that while digital health training was appreciated, access to actual equipment and hands-on sessions was often limited. Students reported a desire for more frequent and practical exposure to advanced nursing technologies, including emergency care simulations and electronic documentation systems. These concerns echoed Juma et al. (2022), who found that student engagement with digital tools significantly enhances clinical readiness but is often curtailed by a lack of institutional resources. Nurse educators participating in FGDs noted the challenge of keeping pace with technological advancements and called for ongoing

professional development to improve their capacity to teach with and about digital systems.

The integration of emerging healthcare technologies was found to moderately support the implementation of the KRCHN curriculum. While there has been a positive shift toward embracing digital innovations, full integration remains hindered by infrastructural, financial, and capacity-related challenges. These findings are consistent with the reviewed literature and underscore the need for a holistic institutional approach to digital readiness, including nurse educators' training, investment in infrastructure, and alignment of teaching strategies with the demands of a rapidly evolving healthcare environment.

To further support the findings regarding the integration of emerging healthcare technologies, a study by Alshahrani et al. (2023) examined the impact of digital health tools on nursing education outcomes. The researchers found that nursing students who engaged with electronic health records (EHRs) and telehealth platforms reported improved confidence in their digital competencies and a better understanding of patient care processes. This aligns with the current study's findings that while there is a positive shift toward incorporating digital health tools, access and practical application remain inconsistent across institutions.

Additionally, a study by Khamis et al. (2024) explored the barriers to integrating technology in nursing curricula. The authors identified that inadequate nurse educator training and limited access to technological resources significantly hindered the effective implementation of digital health education. This finding resonates with the current study's observations regarding the need for structured training programs and

institutional support to enhance the integration of emerging technologies in nursing education.

Moreover, the significance of simulation-based learning in developing digital competencies among nursing students has been highlighted in a study by Oduor et al. (2023). The researchers found that students who participated in simulation exercises that incorporated digital health technologies demonstrated higher levels of clinical readiness and confidence. This supports the current study's findings that while digital health training is appreciated, access to hands-on experiences with advanced technologies is often limited.

Muthoni et al. (2024) investigated the role of e-learning platforms in nursing education. The authors found that students who utilized e-learning resources reported enhanced engagement and improved learning outcomes. However, they also noted that disparities in access to these platforms across institutions could lead to inequities in student preparedness. This aligns with the current study's findings regarding the uneven access to digital infrastructure and its impact on curriculum implementation.

Njoroge et al. (2025) examined the effectiveness of nurse educators' development programs focused on digital health competencies. The researchers found that nurse educator members who received training in digital tools were better equipped to integrate technology into their teaching practices, leading to improved student outcomes. This finding underscores the current study's conclusion that ongoing professional development for educators is essential for the successful integration of emerging technologies in nursing curricula.

The role of mobile health (mHealth) applications in nursing education has been explored by a study conducted by Chib et al. (2023). The researchers found that nursing

students who utilized mHealth applications for learning and patient management reported increased engagement and improved clinical decision-making skills. This aligns with the current study's findings that while there is a positive trend toward integrating digital health tools, the actual application of these technologies in educational settings remains inconsistent. The study emphasizes the need for nursing programs to incorporate mHealth technologies into their curricula to enhance students' readiness for modern healthcare environments.

Furthermore, a study by Alshahrani et al. (2024) examined the impact of virtual reality (VR) simulations on nursing students' clinical skills development. The authors found that students who participated in VR-based training reported higher levels of confidence and competence in performing clinical procedures compared to those who received traditional training. This supports the current study's observations regarding the importance of hands-on experiences with advanced technologies. The findings suggest that integrating VR simulations into nursing curricula could significantly enhance students' clinical preparedness and engagement.

Additionally, the significance of interdisciplinary collaboration in the integration of emerging technologies has been highlighted in a study by Karanja et al. (2025). The researchers found that nursing programs that fostered collaboration between nursing and information technology departments were more successful in implementing digital health initiatives. This aligns with the current study's findings that institutional support and resource allocation are critical for the successful integration of technology in nursing education. The study advocates for stronger partnerships between nursing education institutions and technology providers to enhance the digital learning environment.

Also, a study by Mwenda et al. (2024) explored the perceptions of nurse educators regarding the integration of telehealth into nursing curricula. The authors found that while educators recognized the importance of telehealth competencies, they expressed concerns about their own preparedness to teach these skills effectively. This finding resonates with the current study's observations regarding the need for ongoing professional development for nurse educators to keep pace with technological advancements. The study emphasizes the importance of equipping nurse educators with the necessary skills and knowledge to effectively teach emerging technologies in nursing education.

Lastly, the impact of digital literacy on nursing students' ability to engage with emerging technologies has been examined in a study by Ochieng et al. (2025). The researchers found that students with higher levels of digital literacy were more likely to utilize digital health tools effectively and reported greater confidence in their clinical skills. This supports the current study's findings that while there is a positive shift toward embracing digital innovations, disparities in access to technology and training can hinder students' preparedness. The study advocates for the incorporation of digital literacy training into nursing curricula to ensure that all students are equipped to thrive in a technology-driven healthcare environment.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

This chapter provides information on the conclusions and recommendations of research findings according to the study objectives

6.1 Conclusions

Based on the findings, the following conclusions are drawn for each study objective:

6.1.1 Adequacy of teaching resources for curriculum implementation

The study concludes that the adequacy of teaching resources is a critical factor in the effective implementation of the Kenya Registered Community Health Nursing (KRCHN) diploma program curriculum. While institutions strive to provide essential learning materials, disparities exist in the availability of modern textbooks, laboratory facilities, and clinical training equipment. These resource gaps impact students' ability to fully engage with both theoretical and practical aspects of the curriculum, ultimately affecting the quality of training. Furthermore, the findings indicate that the integration of technology into teaching resources is essential for enhancing the learning experience of nursing students. The study revealed that while some institutions have made significant strides in incorporating digital tools and e-learning platforms, the inconsistency in access to these technologies creates disparities in student preparedness. Institutions that have invested in modern educational technologies, such as simulation labs and online learning modules, reported higher levels of student engagement and satisfaction.

Conversely, institutions lacking these resources faced challenges in delivering a curriculum that meets contemporary healthcare demands. This highlights the urgent need for nursing programs to prioritize investments in digital infrastructure to ensure that all students have equal opportunities to engage with modern educational resources, which are increasingly vital in today's healthcare environment. Additionally, the research underscores the importance of nurse educators development in maximizing the effectiveness of teaching resources. Educators who are well-trained in the use of available resources, including modern teaching aids and technology, are better equipped to deliver high-quality instruction. The study found that nurse educators members often expressed a desire for professional development opportunities focused on integrating technology into their teaching practices. By providing ongoing training and support, institutions can empower educators to utilize teaching resources more effectively, thereby improving the overall educational experience for nursing students. This aligns with the findings of previous studies, which have shown that nurse educators development is a key determinant of successful curriculum implementation. Moreover, the study highlights the significance of collaboration between nursing education institutions and healthcare facilities in resource allocation. Partnerships can facilitate access to clinical training equipment and real-world learning experiences, bridging the gap between theoretical knowledge and practical application. Institutions that foster strong relationships with local healthcare providers reported enhanced opportunities for students to engage in clinical practice, thereby improving their readiness for the workforce. This collaborative approach not only benefits students but also strengthens the ties between educational institutions and the healthcare system, ultimately contributing to better patient care outcomes. The research also emphasizes the need for regular assessments of teaching resources to identify gaps and areas for

improvement. Institutions should conduct periodic evaluations of their resources to ensure they meet the evolving needs of the curriculum and the healthcare sector. This proactive approach will enable institutions to adapt to changes in nursing education and healthcare delivery, ultimately benefiting student learning outcomes. By establishing a systematic process for resource evaluation, institutions can prioritize investments in areas that will have the most significant impact on student learning and clinical competence.

In addition to these findings, the study reveals that student feedback regarding the adequacy of teaching resources is invaluable for continuous improvement. Engaging students in discussions about their experiences with available resources can provide insights into areas that require enhancement. Institutions should establish mechanisms for collecting and acting on student feedback to create a more responsive and effective learning environment. This participatory approach not only empowers students but also fosters a culture of continuous improvement within nursing education programs. Also, the study concludes that financial constraints are a significant barrier to resource adequacy in nursing education. Many institutions struggle to secure sufficient funding to acquire modern teaching materials and maintain existing resources. This financial challenge is particularly pronounced in public institutions that rely on government funding, which often fails to keep pace with the growing demands of nursing education. To address this issue, stakeholders must advocate for increased investment in nursing education, emphasizing the critical role that well-resourced programs play in producing competent healthcare professionals.

The study highlighted the importance of developing standardized minimum resource requirements for nursing training institutions. Establishing clear benchmarks for resource adequacy can help ensure that all students have access to essential learning

tools, regardless of their institution's location or funding source. This standardization can also facilitate accountability among nursing education programs, encouraging institutions to prioritize resource allocation in alignment with established guidelines. Finally, the research underscores the need for a holistic approach to resource management in nursing education. Institutions should not only focus on acquiring new resources but also prioritize the maintenance and effective utilization of existing materials. This includes implementing comprehensive resource inventories, establishing clear procurement and maintenance protocols, and creating systems for regular resource assessment and renewal. Such systematic approaches would help maximize the impact of available resources and identify priority areas for investment. Therefore the study concluded that by prioritizing teaching resource adequacy, nursing education institutions can significantly enhance curriculum implementation and ultimately improve the quality of nursing care nationwide. Future research should explore cost-effective strategies for resource enhancement and evaluate the impact of specific interventions on student learning outcomes.

6.1.2 Preparedness of the nurse educators and curriculum implementation

From the study findings, the study concludes that the competency of nurse educators plays a pivotal role in the successful implementation of the Kenya Registered Community Health Nursing (KRCHN) curriculum. Educators with advanced training, relevant clinical experience, and continuous professional development significantly enhance student learning outcomes. The study revealed that nurse educators who possess higher academic qualifications, such as master's degrees or specialized certifications, are better equipped to deliver complex content and foster critical thinking among students. This finding aligns with existing literature that emphasizes the correlation between educator qualifications and student performance, suggesting that

institutions should prioritize hiring and retaining highly qualified nurse educators members to ensure effective curriculum delivery.

However, the study also identified inconsistencies in nurse educators qualifications across different nursing training institutions. While some institutions boast of highly qualified nurse educators with diverse expertise, others struggle with a shortage of experienced instructors. This disparity can lead to significant variations in the quality of education provided to nursing students, ultimately affecting their preparedness for clinical practice. The findings indicate that institutions with a more stable and experienced nurse educators tend to produce graduates who are more confident and competent in their clinical skills. Therefore, addressing nurse educators shortages and ensuring that all educators meet minimum qualification standards is essential for maintaining the integrity of nursing education.

Moreover, the study concluded that effective nursing education relies on well-prepared educators who can seamlessly integrate theoretical instruction with practical skill development. The ability to connect classroom learning with real-world applications is crucial for fostering students' clinical competencies. Educators who have recent clinical experience are better positioned to provide relevant examples and case studies, enhancing students' understanding of how theoretical concepts apply in practice. This connection between theory and practice is vital for developing critical thinking and problem-solving skills, which are essential for nursing professionals in today's complex healthcare environment.

The research also highlights the importance of continuous professional development for nurse educators. The rapidly evolving nature of healthcare necessitates that educators stay current with the latest advancements in medical knowledge, technology,

and teaching methodologies. The study found that institutions that prioritize ongoing training and development for their nurse educators members report higher levels of educator satisfaction and improved student outcomes. Professional development opportunities, such as workshops, conferences, and online courses, enable educators to enhance their teaching skills and stay abreast of emerging trends in nursing practice. Therefore, institutions should invest in comprehensive professional development programs to support their nurse educators in maintaining high standards of education.

Additionally, the study revealed that mentorship programs for novice educators can significantly enhance their preparedness and effectiveness in the classroom. Experienced nurse educators members who serve as mentors can provide guidance, support, and feedback to new instructors, helping them navigate the challenges of teaching in a nursing program. This mentorship not only benefits novice educators but also fosters a culture of collaboration and continuous improvement within the institution. By establishing formal mentorship programs, nursing education institutions can enhance the overall quality of instruction and support the professional growth of their nurse educators.

Furthermore, the findings indicate that institutional support plays a crucial role in the preparedness of nurse educators. Institutions that provide adequate resources, such as access to teaching materials, technology, and administrative support, enable educators to focus on delivering high-quality instruction. Conversely, institutions that lack these resources may hinder educators' ability to effectively implement the curriculum. The study emphasizes the need for nursing education programs to create supportive environments that empower educators to excel in their teaching roles. This includes providing access to teaching aids, fostering collaboration among nurse educators, and

ensuring that educators have the time and resources necessary to prepare for their classes.

Therefore, the study underscores the importance of hiring qualified nurse educators, providing ongoing professional development, and fostering a supportive institutional environment. By addressing inconsistencies in nurse educators qualifications and investing in the continuous growth of educators, nursing education programs can enhance the quality of instruction and ultimately improve student learning outcomes. Future research should explore the impact of specific professional development initiatives on educator effectiveness and student performance, as well as strategies for addressing nurse educators shortages in nursing education.

6.1.3 Capacity of clinical placement sites and curriculum implementation

The findings indicate that the capacity of the clinical placements to support development of clinical skills and competency among nursing students a critical factor in the effective implementation of the Kenya Registered Community Health Nursing (KRCHN) curriculum, therefore there is need to strengthen the capacity of the clinical placement sites so that they support the clinical learning of the nursing students. The study highlights that hands-on training, supervised clinical placements, and opportunities for case discussions are essential components that significantly contribute to students' confidence and practical skill acquisition. These elements are vital for bridging the gap between theoretical knowledge and practical application, ensuring that nursing students are well-prepared to meet the demands of the healthcare environment upon graduation.

One of the key findings of the study is the importance of supervised clinical placements in fostering clinical competence. Students who engage in well-structured clinical

placements report higher levels of confidence in their abilities to perform nursing tasks and make clinical decisions. The study found that institutions that provide comprehensive clinical training experiences, including diverse patient interactions and exposure to various healthcare settings, produce graduates who are more adept at handling real-world challenges. This underscores the necessity for nursing programs to establish strong partnerships with healthcare facilities to facilitate meaningful clinical experiences for students.

However, the research also identified significant challenges related to clinical exposure. Variations in the quality and quantity of clinical placements across institutions can lead to disparities in student preparedness. Some students reported limited opportunities to engage in hands-on practice, particularly in specialized areas such as emergency care, pediatrics, and mental health. This lack of exposure can hinder the development of essential skills and reduce students' confidence in their clinical abilities. To address this issue, nursing education programs must work to standardize clinical placement experiences, ensuring that all students receive adequate exposure to a range of clinical scenarios that reflect the realities of nursing practice.

Inconsistencies in supervision during clinical placements were another challenge highlighted by the study. Effective supervision is crucial for guiding students through their clinical experiences, providing feedback, and ensuring that they adhere to best practices. The findings revealed that some students experienced inadequate supervision, which limited their ability to learn and develop their skills effectively. Institutions must prioritize the recruitment and training of qualified clinical instructors who can provide the necessary guidance and support to students during their placements. Additionally, establishing clear expectations for supervision and

mentorship can help ensure that students receive the support they need to thrive in clinical settings.

The study also emphasizes the importance of engaging students in real-world decision-making processes during their clinical training. Opportunities for case discussions, reflective practice, and collaborative learning can enhance students' critical thinking and problem-solving skills. By involving students in discussions about patient care decisions and encouraging them to analyze complex clinical scenarios, educators can foster a deeper understanding of nursing practice. This approach not only enhances clinical competence but also prepares students to navigate the complexities of patient care in a dynamic healthcare environment.

To strengthen clinical training, the study advocates for the implementation of structured mentorship programs that pair students with experienced nursing professionals. Mentorship can provide students with valuable insights, guidance, and support as they navigate their clinical experiences. By fostering relationships between students and mentors, nursing programs can create a supportive learning environment that encourages professional growth and development. Mentors can help students build confidence, refine their skills, and develop a deeper understanding of the nursing profession.

Furthermore, the findings suggest that enhancing learning opportunities through simulation-based training can significantly contribute to clinical competence development. Simulation allows students to practice clinical skills in a safe and controlled environment, enabling them to gain confidence and competence before engaging with real patients. The study found that institutions that incorporate simulation into their curricula report improved student outcomes and higher levels of

preparedness for clinical practice. Therefore, nursing education programs should invest in simulation resources and integrate them into the curriculum to provide students with diverse learning experiences.

Therefore, clinical competence development is a critical component of the successful implementation of the KRCHN curriculum. The study highlights the importance of hands-on training, supervised clinical placements, and opportunities for case discussions in fostering students' confidence and practical skills. However, challenges such as variations in clinical exposure, inconsistencies in supervision, and limited engagement in real-world decision-making processes must be addressed to ensure that nursing graduates are competent and confident in their practice. By strengthening clinical training through structured mentorship, enhanced learning opportunities, and the integration of simulation-based training, nursing education programs can better prepare students for the complexities of modern healthcare. Future research should explore the effectiveness of specific interventions aimed at improving clinical competence development and assess their impact on student outcomes and patient care quality.

6.1.4 Integration of emerging technologies in curriculum implementation

The study concludes that while emerging healthcare trends and technologies are incorporated into the KRCHN curriculum, their integration is not uniform across institutions. Nursing students and educators acknowledge the relevance of digital health tools and telemedicine in modern healthcare, but challenges such as inadequate training infrastructure, limited access to technology, and insufficient technical support hinder effective implementation. Greater emphasis on practical exposure to these

advancements is necessary for nursing students to be adequately prepared for evolving healthcare environments.

One of the primary challenges identified in the study is the lack of adequate training infrastructure to support the integration of emerging technologies into the curriculum. Many institutions struggle to provide the necessary resources, such as modern computer labs, high-speed internet access, and up-to-date software applications. This lack of infrastructure limits students' opportunities to engage with digital health tools and telemedicine platforms, ultimately affecting their preparedness for the technology-driven healthcare landscape. Institutions must prioritize investments in technological infrastructure to create an environment conducive to learning and practicing with these essential tools.

Additionally, the study highlights the issue of limited access to technology among nursing students. While some institutions have made strides in incorporating digital health tools into their curricula, disparities exist in students' access to these resources. Students from underprivileged backgrounds or those attending institutions in remote areas may face significant barriers to accessing the technology needed for their education. This inequity can lead to disparities in learning outcomes, as students who lack access to digital health tools may not develop the necessary competencies to thrive in modern healthcare settings. To address this issue, nursing education programs should explore strategies to ensure equitable access to technology for all students, such as providing loaner devices or establishing partnerships with technology providers.

Insufficient technical support is another challenge that impedes the effective integration of emerging technologies into nursing education. Educators often report feeling unprepared to teach with digital health tools due to a lack of training and support. The

study found that many nurse educators members expressed a desire for professional development opportunities focused on the use of technology in nursing education. By providing educators with the necessary training and resources, institutions can empower them to effectively integrate digital health tools into their teaching practices, thereby enhancing the overall learning experience for students.

Moreover, the findings indicate that greater emphasis on practical exposure to emerging technologies is necessary for nursing students to develop the competencies required for modern healthcare practice. While theoretical knowledge of digital health tools is important, hands-on experience is crucial for building confidence and proficiency. The study suggests that nursing programs should incorporate more practical training opportunities, such as simulations, workshops, and real-world applications of telemedicine and digital health tools. By providing students with opportunities to practice using these technologies in a controlled environment, educators can help them develop the skills needed to navigate the complexities of digital healthcare.

The study also emphasizes the importance of fostering a culture of innovation and adaptability within nursing education. As healthcare technologies continue to evolve, nursing programs must be agile in their approach to curriculum development and implementation. This includes regularly updating the curriculum to reflect the latest advancements in digital health and telemedicine, as well as encouraging students to embrace new technologies as they emerge. By cultivating a mindset of continuous learning and adaptability, nursing education programs can better prepare students for the dynamic nature of the healthcare field.

Therefore, the integration of emerging technologies into the KRCHN curriculum is essential for preparing nursing students for the demands of modern healthcare. While

there is recognition of the importance of digital health tools and telemedicine, challenges such as inadequate training infrastructure, limited access to technology, and insufficient technical support must be addressed to ensure effective implementation. By prioritizing investments in technological infrastructure, ensuring equitable access to resources, providing comprehensive training for educators, and emphasizing practical exposure to emerging technologies, nursing education programs can enhance the quality of education and better prepare students for the future of healthcare. Future research should explore innovative strategies for integrating technology into nursing curricula and assess the impact of these strategies on student learning outcomes and clinical practice.

6.2 Recommendations

Based on the findings and conclusions of this study, several recommendations are proposed to enhance the effective implementation of the KRCHN curriculum in selected nurse-training institutions. These recommendations are structured according to the study objectives and are directed toward key stakeholders, including practical implication, policy recommendations and theoretical implication. The focus is on improving teaching resources, enhancing educator competency, strengthening clinical training, integrating emerging healthcare technologies, and reinforcing regulatory oversight.

6.2.1 Practical implications

The findings of this study have practical implications for nursing education, regulatory bodies, and healthcare institutions. Teaching and learning resource: First, the study highlights the need for adequate teaching resources, including modern learning materials, well-equipped skills laboratories, and access to clinical training facilities.

Ensuring the availability of these resources will enhance the effectiveness of nursing education and better prepare students for professional practice. Therefore principals and school administration at large should mobilize funds to purchase teaching and learning resources.

Level of prepared of the nurse educators: Second, the study underscores the critical role of nurse educators in curriculum implementation. Institutions must invest in continuous professional development programs to equip educators with advanced teaching methodologies and clinical expertise. This will enhance the quality of instruction and ensure that nursing graduates possess the necessary competencies for patient care.

Capacity of clinical placement sites to support clinical teaching and learning: Additionally, the study emphasizes the importance of structured clinical training in developing students' clinical competencies. Practical exposure, guided supervision, and real-world case discussions should be prioritized to improve students' confidence and decision-making abilities in clinical settings. Strengthening partnerships between training institutions and healthcare facilities can further enhance the effectiveness of clinical placements. There is need for nurse training institutions to identify and seek accreditation of more health facilities to ease congestion in the current clinical placement sites.

Moreover, the integration of emerging healthcare technologies into the curriculum is essential for preparing students for modern nursing practice. The study suggests that institutions should adopt digital health tools, telemedicine, and simulation-based learning to align with current healthcare trends. Providing nursing students and

educators with training on these technologies will improve their ability to adapt to evolving healthcare systems.

6.2.2 Policy recommendations

The findings of this study highlight the need for comprehensive policy interventions to enhance the implementation of the Kenya Registered Community Health Nursing (KRCHN) curriculum in nursing education. Regulatory bodies such as the Nursing Council of Kenya (NCK) and the Ministry of Health should establish and enforce policies that ensure adequate teaching resources, including up-to-date learning materials and well-equipped training facilities. This includes not only the provision of modern textbooks and digital resources but also the establishment of state-of-the-art clinical skills laboratories and simulation centers that can facilitate hands-on training. By mandating that all nursing programs meet specific resource standards, regulatory bodies can help ensure that students receive a consistent and high-quality education, regardless of their institution.

Additionally, policies should mandate continuous professional development for nurse educators to enhance their teaching and clinical competencies. This could involve the establishment of a structured framework for ongoing training that includes workshops, conferences, and online courses focused on the latest advancements in nursing practice and education. By investing in the professional growth of educators, institutions can ensure that nurse educators are equipped with the knowledge and skills necessary to effectively implement diploma nurse training curriculum and integrate emerging healthcare technologies into their instruction. Furthermore, such policies would encourage collaboration between educational institutions and healthcare organizations to facilitate knowledge exchange and practical training opportunities for educators.

To strengthen clinical training, guidelines should be developed to standardize student-to-instructor ratios, ensuring effective supervision in healthcare facilities. This is particularly important in clinical settings where students require direct supervision to develop their skills safely and competently. By establishing clear guidelines for optimal ratios, regulatory bodies can help ensure that students receive adequate attention and mentorship during their clinical placements. Additionally, these guidelines should include provisions for the training and support of clinical instructors, ensuring that they are well-prepared to guide students through their practical experiences.

Finally, policies should promote the integration of emerging healthcare technologies into nursing education by providing funding and training for digital health tools and simulation-based learning. This would involve the establishment of grants or funding opportunities specifically aimed at enhancing technological infrastructure in nursing programs. By supporting institutions in acquiring the necessary resources and training, regulatory bodies can facilitate the effective integration of digital health tools into the curriculum. Furthermore, policies should encourage the development of partnerships between educational institutions and technology providers to ensure that nursing students have access to the latest innovations in healthcare technology.

Ultimately, comprehensive policy interventions are essential for addressing the challenges identified in this study and enhancing the implementation of the KRCHN curriculum. By focusing on resource adequacy, educator development, clinical training standards, and technology integration, regulatory bodies can help ensure that nursing education in Kenya meets the evolving needs of the healthcare system and produces competent, confident nursing graduates.

In addition to these targeted strategies, it is essential that regulatory bodies adopt a robust monitoring and evaluation framework to assess the effectiveness of policy implementation over time. This framework should include periodic audits of nursing institutions to ensure compliance with established standards, along with the collection of feedback from students, nurse educators, and clinical instructors. Regular assessment of outcomes will help identify areas needing improvement and allow for evidence-based adjustments to policy interventions. Moreover, inclusive stakeholder engagement should be prioritized in the policymaking process, ensuring that the voices of students, educators, clinical partners, and professional associations are considered. By fostering participatory policy development, decision-makers can craft more relevant and sustainable reforms. A national task force on nursing education reform could be established to coordinate policy rollout, oversee resource allocation, and promote best practices across institutions. Such a coordinated approach will not only enhance the consistency of KRCHN curriculum implementation but also foster a culture of accountability and continuous improvement in nursing education throughout Kenya.

There is need for the Nursing Council of Kenya (NCK) and all the stakeholders to review the duration of the diploma nursing training, it was reduced from three and half years to three years in 2019 to align it with other medical related diploma programs. Other programs for example clinical medicine have an additional year of internship after graduation that enhance knowledge and skills development among the graduates.

6.2.3 Educational implications

This study has significant theoretical implications, particularly in relation to John Dewey's experiential learning theory, which emphasizes the integration of practical experiences with theoretical knowledge to enhance learning. Dewey posited that

education should be rooted in real-life experiences, allowing learners to engage actively with the material and reflect on their learning processes. The findings of this study support Dewey's argument that hands-on training, active participation, and reflective thinking are essential for developing competency in professional practice. The emphasis on clinical placements, case discussions, and the use of emerging healthcare technologies aligns with Dewey's vision of education as a dynamic and interactive process.

The study demonstrates that nursing education benefits from experiential learning through well-structured clinical placements, case discussions, and the use of emerging healthcare technologies. By providing students with opportunities to apply theoretical knowledge in practical settings, nursing programs can foster deeper understanding and retention of critical concepts. This experiential approach not only enhances students' clinical skills but also promotes critical thinking and problem-solving abilities, which are essential for effective nursing practice. The findings suggest that nursing education should continue to prioritize experiential learning opportunities to prepare students for the complexities of modern healthcare.

Additionally, the study reinforces the importance of competency-based education models, which align with other learning theories that advocate for skills acquisition through practice and mentorship. Competency-based education emphasizes the development of specific skills and competencies that are directly applicable to professional practice. By highlighting the role of teaching resources, educator competence, and regulatory oversight in effective curriculum implementation, the study contributes to the broader discourse on curriculum development and instructional strategies in nursing education. These insights can guide future theoretical advancements and adaptations to improve healthcare training programs.

Moreover, the findings of this study can inform the development of new educational frameworks that integrate both experiential learning and competency-based approaches. By combining these theories, nursing education programs can create a more holistic learning environment that addresses the diverse needs of students and the healthcare system. This integrated approach can lead to the development of well-rounded nursing professionals who are not only knowledgeable but also skilled in applying their knowledge in real-world situations.

Furthermore, the study's insights into the challenges faced by nursing education programs, such as resource inadequacies and nurse educators preparedness, can inform future research and theoretical explorations. Understanding these challenges can lead to the development of targeted interventions and strategies that address the specific needs of nursing education. By contributing to the ongoing dialogue about best practices in nursing education, this study can help shape the future of nursing training and ultimately improve patient care outcomes.

Therefore, the theoretical implications of this study extend beyond the immediate context of nursing education in Kenya. By aligning the findings with established educational theories, the study contributes to a deeper understanding of how experiential learning and competency-based education can enhance nursing training. These insights can serve as a foundation for future research and policy development aimed at improving nursing education and preparing graduates for the challenges of modern healthcare. In light of these implications, future theoretical frameworks in nursing education should aim to bridge the gap between classroom learning and clinical practice through curriculum designs that promote experiential and competency-based learning simultaneously. This requires not only aligning learning objectives with real-world nursing demands but also ensuring that assessment strategies reflect students'

ability to perform in clinical contexts. The study calls for the development of dynamic instructional models that are adaptable to technological changes, healthcare innovations, and patient needs. Moreover, theoretical discourse should emphasize the educator's role as a facilitator of transformative learning experiences, where reflection, mentorship, and critical inquiry are central. As the healthcare environment becomes more complex, nursing education theories must evolve to produce practitioners who are not only clinically proficient but also capable of leading and innovating within multidisciplinary teams. Thus, this study contributes to a growing body of literature that advocates for theory-driven reforms in nursing education to better meet the demands of 21st-century healthcare.

6.2.4 Further research

This study provides significant insights into the implementation of the Kenya Registered Community Health Nursing (KARCHN) diploma program curriculum; however, further research is necessary to deepen understanding and address existing gaps. From a conceptual perspective, future studies could integrate additional determinants that influence nursing training outcomes. For instance, exploring the dynamics of institutional leadership could shed light on how administrative support and decision-making processes impact curriculum implementation. Leadership plays a crucial role in shaping the educational environment, resource allocation, and nurse educators development, all of which are essential for effective nursing education. Understanding how different leadership styles and practices affect curriculum delivery could provide valuable insights for improving nursing programs.

Also, examining student self-efficacy is another important area for future research. Self-efficacy, or the belief in one's ability to succeed in specific situations, can significantly

influence students' motivation, engagement, and ultimately their learning outcomes. Investigating how self-efficacy interacts with curriculum implementation and clinical training experiences could help identify strategies to enhance student confidence and competence in nursing practice. By understanding the factors that contribute to self-efficacy, educators can develop targeted interventions to support students in overcoming challenges and achieving their professional goals.

Moreover, the integration of professional education into nursing training is a critical aspect that warrants further exploration. Professional education encompasses not only clinical skills but also the development of soft skills, such as communication, teamwork, and ethical decision-making. Future research could investigate how the KRCHN curriculum addresses these competencies and the extent to which they are integrated into the educational experience. Understanding the relationship between professional education and nursing practice can inform curriculum development and ensure that graduates are well-prepared for the multifaceted demands of the healthcare environment.

Contextually, expanding the scope of research to include other medical training institutions, such as private and public middle level nurse training colleges, would provide a comparative analysis of curriculum implementation across diverse healthcare training environments. This broader perspective could reveal variations in educational practices, resource availability, and student outcomes, contributing to a more comprehensive understanding of nursing education in Kenya. By examining the similarities and differences between various institutions, researchers can identify best practices and areas for improvement that can be applied across the sector.

In addition, a similar research may be conducted targeting nurse training implementation in higher learning institutions to ascertain any contextual similarities and/or differences. This would provide valuable insights in such institutions as far as curriculum implementation is concerned..

Methodologically, longitudinal and mixed-method studies are recommended to assess the long-term impact of curriculum execution on graduates' professional competencies, clinical decision-making, and patient care outcomes. Longitudinal studies would allow researchers to track the progress of nursing graduates over time, providing insights into how their education influences their professional development and effectiveness in clinical practice. Mixed-method approaches, which combine quantitative and qualitative data, can offer a more nuanced understanding of the experiences of nursing students and educators, as well as the challenges and successes associated with curriculum implementation.

Furthermore, future research could explore the role of emerging technologies in nursing education and their impact on curriculum implementation. As healthcare increasingly relies on digital tools and telemedicine, understanding how these technologies are integrated into nursing training and their effects on student learning and clinical practice is essential. Investigating the barriers and facilitators to technology adoption in nursing education can inform strategies for enhancing the use of digital health tools and preparing students for the future of healthcare.

Therefore, while this study has provided valuable insights into the implementation of the diploma nurse training curriculum, there remains a wealth of opportunities for further research. By exploring additional determinants, expanding the contextual scope, and employing diverse methodological approaches, future studies can contribute to a

deeper understanding of nursing education and its impact on healthcare outcomes. These insights will be instrumental in shaping the future of nursing training and ensuring that graduates are equipped to meet the evolving challenges of the healthcare landscape. In addition to the identified research areas, it is imperative to investigate the socio-cultural and economic factors influencing the implementation of the diploma nurse training curricula. These factors play a significant role in shaping both the learning environment and the outcomes of nursing education. For instance, students from economically disadvantaged backgrounds may face challenges such as limited access to learning resources, including technological access and resources, and financial constraints that may hinder their ability to fully engage with the curriculum.

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APPENDICES

Appendix 1: Questionnaire for senior nursing students

Section A: Demographic data

1. Age:

- a) 25-29 ()
- b) 30-34 ()
- c) 35-39 ()
- d) 40-44 ()
- e) 45-49 ()
- f) 50 and above ()

2. Gender

- a) Male ()
- b) Female ()
- c) Other ()

3. Level of training:

- a) 3rd Year ()
- b) 2nd Year ()
- c) Other (specify ()

Section B: Curriculum implementation

Please indicate your level of agreement with the statements in this section by marking (✓) in the appropriate column in the table. The scale is as follows: **5 = Strongly Agree (SA)**, **4 = Agree (A)**, **3 = Neutral (N)**, **2 = Disagree (D)**, and **1 = Strongly Disagree (SD)**.

Part One: Teaching resources

No	Statement	Rating				
		5 (SA)	4 (A)	3 (U)	2 (D)	1(SD)
1.	The institution has adequate classrooms that support effective learning.					
2.	The library resources (textbooks, reference materials, e-learning platforms) are sufficient for my academic needs.					
3.	Laboratory facilities are well-equipped to support practical learning.					
4.	The institution provides simulation equipment to enhance clinical skills before hospital placements.					
5.	There are sufficient clinical placement opportunities for students to gain hands-on experience.					
6.	Teaching resources are regularly updated to align with current nursing education requirements.					

Part Two: Preparedness of nurse educators

No	Statement	Rating				
		5 (SA)	4 (A)	3 (U)	2 (D)	1(SD)
1.	My lecturers demonstrate strong knowledge of nursing concepts and practices.					
2.	Educators use effective teaching methodologies that enhance understanding.					
3.	Nurse educators integrate practical examples into their teaching.					
4.	I receive adequate mentorship and guidance from my instructors.					
5.	Educators provide timely and constructive feedback on assessments and practical skills.					
6.	The nurse educators members encourage evidence-based practice in nursing education.					

Part Three: Capacity of clinical placement sites

No	Statement	Rating				
		5 (SA)	4 (A)	3 (U)	2 (D)	1(SD)
1.	My clinical placements provide adequate exposure to real patient care.					
2.	I receive effective supervision from clinical instructors during practical sessions.					
3.	I feel confident in performing basic nursing procedures due to clinical training.					
4.	The institution provides opportunities for case discussions and debriefing after clinical experiences.					
5.	Clinical training has helped me develop critical thinking and decision-making skills.					
6.	My clinical learning experiences reflect real-life nursing practice scenarios.					

Part Four: Integration of technologies in teaching and learning

No	Statement	Rating				
		5 (SA)	4 (A)	3 (U)	2 (D)	1(SD)
1.	The curriculum incorporates modern healthcare technologies, such as electronic medical records and telemedicine.					
2.	I have received training on digital health tools and patient data management.					
3.	Emerging nursing practices, such as advanced wound care and emergency response protocols, are included in training.					
4.	My institution organizes workshops or seminars on new healthcare trends.					
5.	The use of technology-enhanced learning tools, such as online simulations, is encouraged in training.					

END

Thank you for participating in this study.

Philip Towett – Researcher

Appendix II: Questionnaire for Nurse Educators

Section A: Demographic Data

1. Age:
 - a) 25-29 ()
 - b) 30-34 ()
 - c) 35-39 ()
 - d) 40-44 ()
 - e) 45-49 ()
 - f) 50 and above ()
2. Gender
 - a) Male ()
 - b) Female ()
 - c) Other ()
3. Level of Education:
 - a) Higher Diploma ()
 - b) Undergraduate ()
 - c) Masters ()
 - d) Other (specify ()

Section B: Curriculum Implementation

Please indicate your level of agreement with the statements in this section by marking (√) in the appropriate column in the table. The scale is as follows: **5 = Strongly Agree (SA)**, **4 = Agree (A)**, **3 = Neutral (N)**, **2 = Disagree (D)**, and **1 = Strongly Disagree (SD)**.

Part One: Teaching Resources

No	Statement	Rating				
		5 (SA)	4 (A)	3 (U)	2 (D)	1(SD)
1.	The institution has sufficient classrooms to facilitate effective teaching.					
2.	The library provides adequate learning materials (textbooks, journals, and online resources) for nursing students.					
3.	Laboratory facilities are well-equipped to support nursing practical sessions.					
4.	Simulation-based learning resources are adequate for students to develop clinical skills.					
5.	The institution provides adequate clinical placement opportunities for students.					

6.	Teaching materials and resources are regularly updated to align with current nursing education standards.					
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Part Two: Competence of Educators

No	Statement	Rating				
		5 (SA)	4 (A)	3 (U)	2 (D)	1(SD)
1.	I have received adequate training to teach the Kenya Registered Community Health Nursing (KRCHN) curriculum effectively.					
2.	I integrate evidence-based practices in my teaching methodology.					
3.	I regularly update my knowledge and skills to stay current with advancements in nursing education.					
4.	I incorporate practical case studies and real-life scenarios in classroom teaching.					
5.	I receive adequate institutional support for professional development and training.					
6.	I provide effective mentorship to students during their clinical training.					

Part Three: Capacity of the clinical placements sites

No	Statement	Rating				
		5 (SA)	4 (A)	3 (U)	2 (D)	1(SD)
1.	Students receive sufficient clinical exposure during their training.					
2.	Clinical placements are well-structured to ensure students gain hands-on experience.					
3.	I provide continuous supervision and feedback to students during clinical rotations.					
4.	Students demonstrate confidence and competency in performing basic nursing procedures.					
5.	The current clinical training model adequately prepares students for real-world nursing practice.					

6.	My institution collaborates with healthcare facilities to enhance student learning experiences.					
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Part Four: Integration of technologies in teaching and learning

No	Statement	Rating				
		5 (SA)	4 (A)	3 (U)	2 (D)	1(SD)
1.	The KRCHN curriculum incorporates modern healthcare technologies such as electronic medical records and telemedicine.					
2.	I have received training on integrating digital health tools in nursing education.					
3.	My institution organizes workshops and seminars on emerging healthcare trends.					
4.	Nursing students are trained on the use of advanced medical equipment and digital health systems.					
5.	Simulation and e-learning technologies are effectively used to enhance nursing education.					

Part Five: Moderating Role of Regulatory Bodies

No	Statement	Rating				
		5 (SA)	4 (A)	3 (U)	2 (D)	1(SD)
1.	The Nursing Council of Kenya (NCK) provides clear guidelines for KRCHN curriculum implementation.					
2.	The Ministry of Health actively supports nursing education institutions.					
3.	There is adequate monitoring and evaluation of curriculum implementation by regulatory bodies.					
4.	My institution complies with NCK standards in nursing education.					
5.	Changes in nursing education policies are effectively communicated and implemented.					

END

Thank you for participating in this study.
Philip Towett - Researcher

Appendix III: Key Informant Interview Guide - Principal

SECTION A: DEMOGRAPHIC DATA

1. Age:
 - a) 25-29 ()
 - b) 30-34 ()
 - c) 35-39 ()
 - d) 40-44 ()
 - e) 45-49 ()
 - f) 50 and above ()
2. Gender
 - a) Male ()
 - b) Female ()
 - c) Other ()
3. Level of Education:
 - a) Higher Diploma ()
 - b) Undergraduate ()
 - c) Masters ()
 - d) Other (specify)_____

SECTION B: CURRICULUM DEVELOPMENT:

1. When was the current KRCHN curriculum developed? (year_____)
2. Who were involved in the development of the curriculum (stakeholders)
 - a. List_____
3. How often is the curriculum reviewed and updated as necessary? _____ years
4. When was your current KRCHN curriculum revised? Year_____

Section C: Implementation of the curriculum

Theme 1: Adequacy of teaching resources

5. How do you assess the adequacy of teaching resources in your institution for the effective implementation of the KRCHN curriculum?
6. What are the major challenges your institution faces in acquiring and maintaining adequate teaching resources?
7. What measures has your institution taken to enhance the availability of teaching resources to support nursing education?

Theme 2: Preparedness of nurse educators

8. How do you ensure that nurse educators in your institution are adequately trained and competent to deliver the KRCHN curriculum effectively?
9. What professional development opportunities are provided to nurse educators to update their knowledge and teaching skills?
10. What are some of the challenges nurse educators face in implementing the curriculum, and how does the institution address them?

Theme 3: Capacity of clinical placement sites

11. How does your institution facilitate clinical placements for nursing students to ensure they gain practical experience?
12. What strategies are in place to strengthen mentorship and supervision during clinical training?
13. Do you think students receive adequate exposure to real-life clinical scenarios during their training? If not, what can be improved?

Theme 4: Integration of Emerging Healthcare Trends and Technologies

14. How has your institution incorporated emerging healthcare trends and technologies into the KRCHN curriculum?
15. What challenges have you faced in integrating new healthcare technologies into nursing training?
16. What recommendations do you have for improving the integration of technology into the curriculum?

Theme 5: Role of Regulatory Bodies

17. How does the Nursing Council of Kenya (NCK) support your institution in implementing the KRCHN curriculum?
18. What role does the Ministry of Health play in ensuring the quality and effectiveness of nursing education in your institution?
19. Are there any gaps in the regulatory framework that need to be addressed to enhance curriculum implementation?

Section D: Summary

1. Kindly give your recommendations for effective KRSCHN curriculum implementation in Kenya

END

Thank you for participating in this study.

Philip Towett - Researcher

Appendix IV: Key Informant Interview: Nurse managers

Section A: Demographic Data

1. Age:

- a) 25-29 ()
- b) 30-34 ()
- c) 35-39 ()
- d) 40-44 ()
- e) 45-49 ()
- f) 50 and above ()

2. Gender

- a) Male ()
- b) Female ()
- c) Other ()

3. Level of Education:

- a) Higher Diploma ()
- b) Undergraduate ()
- c) Masters ()
- d) Other (specify ()

Section B: Curriculum Development

- 4. What is your view on the sufficiency of time allocated for clinical experience in the KRCHN curriculum?
- 5. How would you describe the infrastructure in clinical settings concerning KRCHN curriculum implementation?
- 6. How well-prepared are nursing staff to assist students in achieving the learning goals of the KRCHN curriculum?

Section C: Implementation of the Curriculum

- 7. How is the KRCHN curriculum implemented in the clinical setting?

8. How would you describe the interaction between clinical instructors, lecturers, nursing staff, and students during clinical experiences?
9. What is your role as a nurse manager in the implementation of the KRCHN curriculum?
10. How competent and well-prepared are newly qualified Kenya Registered Community Health Nurses?
11. What suggestions do you have for improving the implementation of the KRCHN curriculum?

END

Thank you for participating in this study.

Philip Towett - Researcher

Appendix V: Focus Group Discussion Guide for the Senior Nursing Students

Introduction:

Greetings and thank you for taking the time to participate in this discussion. The purpose of this session is to gather your insights and experiences regarding the implementation of the KRCHN curriculum in this institutions.

Your responses will remain confidential and will only be used for research purposes. There are no right or wrong answers, so feel free to share your honest thoughts and experiences. Your feedback is valuable in improving nursing education in Kenya.

We will be discussing key areas related to nursing education, including teaching resources, clinical training, educator competency, emerging healthcare trends, and the role of regulatory bodies. Let's have an open and respectful conversation, and everyone will have a chance to contribute.

Discussion Themes & Questions:

Adequacy of Teaching Resources in KRCHN Curriculum Implementation

1. What are your views on the availability of learning materials, textbooks, and other resources for nursing education?
2. How accessible are practical training resources, such as laboratories and simulation equipment?
3. In what ways do resource limitations impact your learning and clinical preparedness?

Preparedness of nurse educators

1. How would you describe the teaching approaches used by your lecturers?
2. Do you feel your educators provide adequate guidance and mentorship in both theoretical and clinical aspects?
3. What challenges do you face in understanding course content due to instructor-related factors?

Capacity of the clinical placement sites

1. How effective are your clinical placements in preparing you for real-world nursing practice?
2. Do you receive sufficient supervision and feedback during clinical training?

3. What improvements would you suggest to enhance clinical learning experiences?

Integration of Emerging Healthcare Trends and Technologies

1. Have you received training in modern healthcare technologies such as telemedicine and electronic medical records?
2. How often are you exposed to new healthcare trends, and in what ways?
3. What are the challenges in adopting technology-enhanced learning tools in nursing education?

Role of Regulatory Bodies in Curriculum Implementation

1. How familiar are you with the role of the Nursing Council of Kenya (NCK) and the Ministry of Health in shaping nursing education?
2. Do you believe regulatory oversight effectively ensures quality training and adherence to standards?
3. What improvements can be made in regulatory monitoring and policy implementation?

END

Thank you for participating in this study.

Philip Towett - Researcher

Appendix-VI: Focus Group Discussion Guide Nurse educators

Introduction:

Greetings and thank you for taking the time to participate in this discussion. The purpose of this session is to gather your insights and experiences regarding the implementation of the KRCHN curriculum in this institutions.

Your responses will remain confidential and will only be used for research purposes. There are no right or wrong answers, so feel free to share your honest thoughts and experiences. Your feedback is valuable in improving nursing education in Kenya.

We will be discussing key areas related to nursing education, including teaching resources, clinical training, educator competency, emerging healthcare trends, and the role of regulatory bodies. Let's have an open and respectful conversation, and everyone will have a chance to contribute.

Discussion Themes & Questions:

Adequacy of Teaching Resources in KRCHN Curriculum Implementation

1. How sufficient are the available teaching resources in facilitating effective nursing education?
2. Are there any challenges in accessing instructional materials, simulation labs, or clinical training resources?
3. What strategies has your institution employed to address resource constraints?

Competency of Nurse educators

1. How well-prepared do you feel to deliver the KRCHN curriculum effectively?
2. What professional development opportunities are available to enhance your teaching skills?
3. What challenges do you encounter in integrating evidence-based teaching methodologies?

Clinical Competency Development of Students

1. How structured and effective are clinical training programs in preparing students for real-world nursing practice?
2. Do you believe students receive sufficient exposure and supervision in clinical placements?

3. What measures can be taken to improve students' clinical competency?

Integration of Emerging Healthcare Trends and Technologies

1. How well is the KRCHN curriculum aligned with modern healthcare trends and technological advancements?
2. What challenges do you face in integrating digital health tools, simulation, and e-learning into your teaching?
3. How can institutions and regulatory bodies support nurse educators in adopting emerging healthcare technologies?

Role of Regulatory Bodies in Curriculum Implementation

1. How effective is the oversight provided by the Nursing Council of Kenya (NCK) and the Ministry of Health in nursing education?
2. Does your institution fully comply with NCK guidelines and policies?
3. What gaps exist in regulatory monitoring and implementation, and how can they be addressed?

END

Thank you for participating in this study.

Philip Towett – Researcher

Appendix VII: Introductory Letter for Research Clearance



MOI UNIVERSITY

ISO 9001: 2015 CERTIFIED

COLLEGE OF HEALTH SCIENCES

SCHOOL OF MEDICINE

DEPARTMENT OF FAMILY MEDICINE, COMMUNITY HEALTH & MEDICAL EDUCATION

Tel: +254 532060958

Tel. +254 0777248196

E-mail: deanmedicine@mu.ac.ke

MTRH BUILDING, 2ND FLOOR

P O BOX 4606(30100)

ELDORET, KENYA

Ref: PHD/ME/5752/21

Date: 8th February 2023

National Commission for Science, Technology & Innovation
Off Waiyaki Way, Upper Kabete
P O Box 30623, 00100
Nairobi, Kenya

Dear Sir/Madam

RE: INTRODUCTORY LETTER: PHILIP TOWETT REG.NO. PHD/ME/5752/21

The above named is a PhD candidate in Medical Education Program in Moi University.

He is undertaking his research on the topic “**Implementation of Kenya Registered Community Health Nursing Curriculum Selected Nurse-Training Institutions in Kenya**”.

His proposal has received the necessary ethical and regulatory approvals. The details of approvals and data collection tools are attached for your reference.

We are kindly requesting for approval to allow him collect data.

The department is supportive of his application.

Yours faithfully

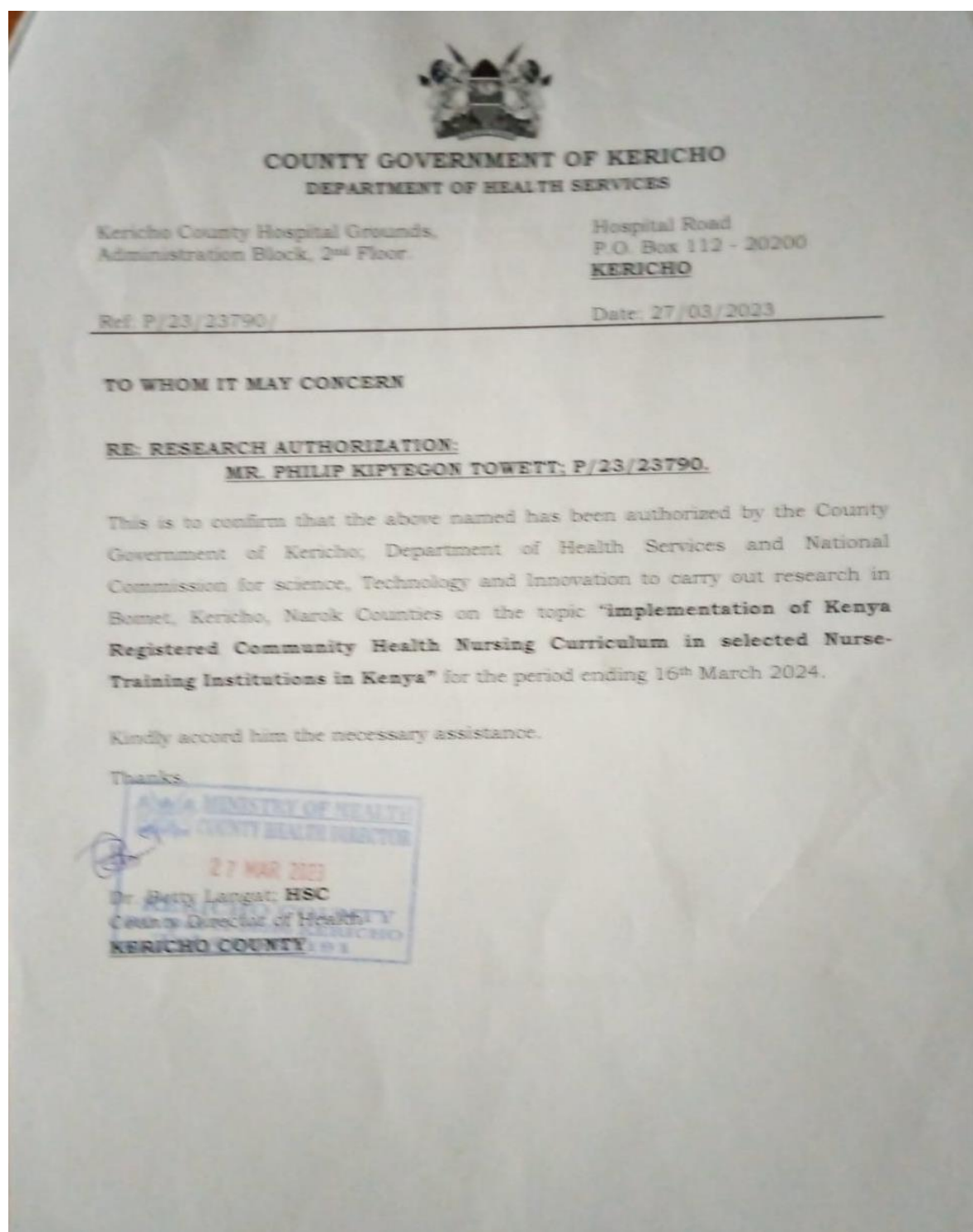
DR. JEREMIAH LAKTABAI
CHAIR OF DEPARTMENT

cc. Dean, School of Medicine



(ISO 9001:2015 Certified Institution)

**Appendix VIII: Research Clearance from Department of Health Services, Kericho
County Government**





COUNTY GOVERNMENT OF KERICHO
DEPARTMENT OF HEALTH SERVICES

Kericho County Hospital Grounds,
Administration Block, 2nd Floor.

Hospital Road
P.O. Box 112 - 20200
KERICHO

Ref: P/23/23790/

Date: 27/03/2023

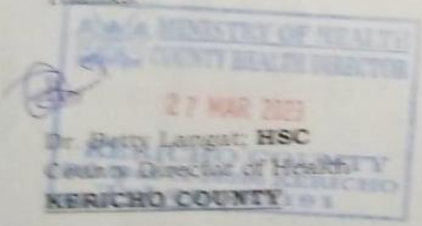
TO WHOM IT MAY CONCERN

RE: RESEARCH AUTHORIZATION:
MR. PHILIP KIPYEGON TOWETT; P/23/23790.

This is to confirm that the above named has been authorized by the County Government of Kericho; Department of Health Services and National Commission for science, Technology and Innovation to carry out research in Bomet, Kericho, Narok Counties on the topic **"implementation of Kenya Registered Community Health Nursing Curriculum in selected Nurse-Training Institutions in Kenya"** for the period ending 16th March 2024.

Kindly accord him the necessary assistance.

Thanks.



Dr. Betty Langat; HSC
County Director of Health
KERICHO COUNTY

Appendix IX: Research Permit from Research and Ethics Committee (Moi University)

 MTRH/MU-INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE (IREC) MOI TEACHING AND REFERRAL HOSPITAL P.O. BOX 3 ELDORET Tel: 33471/1/2/3	 MOI UNIVERSITY COLLEGE OF HEALTH SCIENCES P.O. BOX 4606 ELDORET Tel: 33471/2/3 26 th January, 2023
---	--

Reference: IREC/354/2022
Approval Number: 0004337

Philip Towett,
 Moi University,
 School of Medicine,
 P.O. Box 4606-30100,
ELDORET-KENYA.

Dear Mr. Towett,

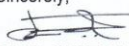
IMPLEMENTATION OF KENYA REGISTERED COMMUNITY HEALTH NURSING CURRICULUM SELECTED NURSE-TRAINING INSTITUTIONS IN KENYA

This is to inform you that **MTRH/MU-IREC** has reviewed and approved the above referenced research proposal. Your application approval number is **FAN: 0004337**. The approval period is **26th January, 2023- 25th January, 2024**. This approval is subject to compliance with the following requirements;

- i. Only approved documents including (informed consents, study instruments, Material Transfer Agreements (MTA) will be used.
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by **MTRH/MU-IREC**.
- 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 **MTRH/MU-IREC** 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 **MTRH/MU-IREC** within 72 hours.
- v. Clearance for export of biological specimens must be obtained from **MOH at the recommendation of NACOSTI** for each batch of shipment.
- 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 **MTRH/ MU-IREC**.

Prior to commencing your study; you will be required to obtain a research license from the National Commission for Science, Technology and Innovation (NACOSTI) <https://oris.nacosti.go.ke> and other relevant clearances from study sites including a written approval from the CEO-MTRH which is mandatory for studies to be undertaken within the jurisdiction of Moi Teaching & Referral Hospital (MTRH) and its satellites sites.

Sincerely,


PROF. E. WERE
 CHAIRMAN
INSTITUTIONAL RESEARCH AND ETHICS COMMITTEE



cc	CEO -	MTRH -	Dean -	SOP	Dean -	SOM
	Principal -	CHS	Dean -	SON	Dean -	SOD

Appendix X: Research Permit from NACOSTI

 REPUBLIC OF KENYA	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION
Ref No: 922395	Date of Issue: 16/March/2023
RESEARCH LICENSE	
	
This is to Certify that Mr.. Philip Kipyegon Towett of Moi University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Bomet, Kericho, Narok on the topic: IMPLEMENTATION OF KENYA REGISTERED COMMUNITY HEALTH NURSING CURRICULUM IN SELECTED NURSE-TRAINING INSTITUTIONS IN KENYA. for the period ending : 16/March/2024.	
License No: NACOSTI/P/23/23790	
922395	
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.	
See overleaf for conditions	

APPENDIX XI: PLAGIARISM AWARENESS CERTIFICATE

SR972

ISO 9001:2019 Certified Institution**THESIS WRITING COURSE*****PLAGIARISM AWARENESS CERTIFICATE***

This certificate is awarded to

PHILIP TOWETT

PhD/ME/5752/21

In recognition for passing the University's plagiarism

Awareness test for Thesis **entitled: IMPLEMENTATION OF KENYA
REGISTERED COMMUNITY HEALTH NURSING CURRICULUM IN
SELECTED NURSE-TRAINING**

INSTITUTIONS IN KENYA with similarity index of 4% and striving to maintain
academic integrity.

Word count: 53033

Awarded by

Prof. Anne Syomwene Kisilu

CERM-ESA Project Leader Date: 06/08/2025