EFFECTIVENESS OF PEER SUPPORT ON FOOT SELF-CARE PRACTICES FOR PREVENTION OF FOOT COMPLICATIONS AMONG PATIENTS WITH DIABETIC MELLITUS IN WESTERN KENYA

Lucy Kageha Kavinguha

A Research thesis Submitted in Partial Fulfillment for the requirements for the Award of the Degree of Doctor of Philosophy in Nursing of Masinde Muliro University of Science and Technology

MAY, 2025

DECLARATION

This thesis is my original work and has not been presented for a degree or an award in any other university

Signature…… Date……

Lucy Kageha Kavinguha

HNR/H/01-52570/2018

Approval by Supervisors

This thesis has been submitted for examination with our approval as university supervisors

Signature…… Date……

Prof. Lt. Col(Rtd) John M. Okoth

Department of Nursing Research, Education and Management

Masinde Muliro University

Signature…… Date……

Dr. Tecla Sum Psusma

Department of Paramedical Sciences

Masinde Muliro University of Science and Technology

DEDICATION

This thesis is dedicated to my family for their unwavering support, friends for being very reliable shoulders to lean on, my supervisors for their guidance and colleagues for their invaluable input.

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to my supervisors, Professor John Okoth and Dr. Tecla Sum. Your support, insights, words of encouragement, expertise and guidance have been invaluable.

Special thanks to my colleagues and friends for their constructive feedback, positive criticism and suggestions, which greatly improved the quality of my work.

I am deeply indebted to my family, your support and prayers have walked me through this journey.

Last, but most of all, I would like to express my utmost gratitude to my husband Ephrahim. Your love, support, patience and encouragement is truly unmatched. You remain the wind beneath my wings.

ABSTRACT

Individuals with chronic conditions such as diabetes need assistance in learning, mastering and sustaining complex self-care practices that support healthy living and prevent development of complications. Peer support is an effective and cost friendly intervention in self-management of chronic health conditions. Despite numerous literature showing evidence that peer support has benefits if implemented, its effectiveness on foot self-care practices among diabetic patients remains variable with very few studies documenting its use. This study sought to determine the effectiveness of peer support on foot self-care practices for prevention of foot complications among diabetic patients in Western Kenya. This was achieved by assessing performance of foot self-care practices, examining the factors influencing peer support and analyzing the outcome of peer support strategies in foot self-care practices with the aim proposing a peer support framework that will promote foot self-care practices among diabetes patients in Western Kenya. The study's underlying theoretical model was social support theory by Don Drennon-Gala and Francis Cullen that describe the forms of support required to sustain healthy behavior and prevent complications in chronic illnesses. This was a quasi-experimental non-equivalent post-test only study that utilized bot quantitative and qualitative approaches. Target population was diabetic patients in sampled hospitals in western Kenya. Questionnaires, focused group discussions and key informant interviews were utilized to collect data. Sampled participants were put in two groups with one being the intervention group while the other the control group. Ethical considerations were adhered to accordingly. Quantitative data was analyzed using measures of central tendency and dispersion. Relationships were elicited using ANOVA and regression analysis between and within variables. Qualitative data was analyzed thematically. The mean age of participants was 51.7±10.9 years. Majority of the participants were females (55.2%), had attained secondary level of education (44%), were employed (362%), married (72.4%), had no comorbidities (71.6%), had type two diabetes (62.9%) and had diabetes for more than 10 years (56.9%). The mean foot self-care practices score was notably higher in the intervention group at 61.1 (95% CI: 59.5 - 62.8) compared to control group at 35.7 (95% CI: 34.2 - 37.1) with a significant P-value of <0.001 and a substantial partial Eta^2 of 0.84. Instrumental support (P-value 0.034), Informational support (P- value 0.04), appraisal support (P- value 0.008), level of education (P-value 0.048) and employment status (P-value 0.013) significantly influenced effectiveness of peer support. Improved coping, emotional resilience, emotional connection and understanding, dependable support, helpful support and increased confidence were amongst the outcomes of the peer support strategies. The PEER-CARE framework, derived from the study, presents a structured approach for implementing peer support in foot self-care among diabetics. The study therefore concluded that peer support is effective in improving foot self- care practices among diabetes patients and further recommends that healthcare providers should incorporate structured peer support in their daily management of patients with diabetes based on the proposed peer-care framework. Regular evaluations of the framework's impact on diabetes management and prevention of diabetic foot complications can inform ongoing improvements and adaptations. Information dissemination will be done in relevant forums including conference presentations and publications.

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LIST OF ABBREVIATIONS AND ACRONYMS

ADA	**:**	American Diabetes Association
AFR	:	African Regions
CDC	:	Center for Disease Control and Prevention
CVD	:	Cardiovascular Diseases
DFD	**:**	Diabetic Foot Disease
DFU	:	Diabetic foot ulcers
DM	:	Diabetes Mellitus
DMI	:	Diabetes Management and Information Centre
DSMS	:	Diabetes self- monitoring system
DSME	:	Diabetes Self -management Education
DNCD	:	Division of Non-communicable Diseases
HCP	:	Health care Provider
IDF	:	International Diabetes Federation
JOOTRH	:	Jaramogi Oginga Odinga Teaching and Referral Hospital
LMICs	:	Low and Middle-Income Countries
MDG	:	Millennium Development Goals
MENA	:	Middle East and North Africa
MOH	:	Ministry of Health
NCDs	:	Non-communicable diseases
SSA	:	Sub Saharan Africa
T2DM	:	Type two diabetes Mellitus
WDF	:	World Diabetes Federation
WHO	:	World Health Organization

OPERATIONALIZATION OF KEY TERMS

The following terminologies have been commonly used and therefore it is important to define the concepts as used in this study to better understand the background, methodology and findings of the study: -

Diabetes: A metabolic disorder of multiple etiologies characterized by chronic hyperglycemia with disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action, or both.

Diabetes Complications: The long-term effects of diabetes mellitus which include progressive development of the specific complications of retinopathy with potential blindness, nephropathy that may lead to renal failure, and/or neuropathy with risk of foot ulcers, amputation, Charcot joints, and features of autonomic dysfunction, including sexual dysfunction. People with diabetes are at increased risk of cardiovascular, peripheral vascular and cerebrovascular disease.

Empowerment: In this study, empowerment referred to patients' ability to see a closer correspondence between their goals and a sense of how to achieve them, and a relationship between their efforts and better foot health.

Foot Assessment: Daily inspection of the feet includes checking for changes in color, breaks in the skin, swelling, numbness, or pain, and dryness and cracks in the skin.

Foot Complications: Foot problems associated with diabetes including Tingling, pain (burning or stinging), loss of sensation, very dry cracked or peeled skin, calluses, foot ulcers/ lesions and amputation.

Foot self-care practices:

- A prescribed set of activities that provide guidance for daily foot care with the aim of maintaining good foot health and prevent foot related complications.
- Foot self care practices was assessed using the Nottingham Assessment of Functional Foot-care Questionnaire (NAFF), a 29 items instrument developed by Lincoln and colleagues in 2007 and consists of foot assessment (2 questions), footwear (13 questions), foot hygiene (3 questions), prevent foot injury (7 questions), toenails, callus/corn care (2 questions), and wound/ulcer care (2 questions).
- The study modified the tool to a 26 item questionnaire to suit the study setting. The maximum score was 78 and minimum score was zero. A score of 39 and above is considered compliant with good foot prognosis whereas a score of 38 and below is considered non-compliant with poor foot prognosis.

Health Care Provider: An individual who provides preventive, curative, promotional or rehabilitative services in a systematic way to people, families, and communities.

Peer Support:

- Peer support, a form of symbiotic relationship, in which persons with diabetes provided knowledge, experience, emotional, social, or practical help to each other with one (peer mentor) having more experiential knowledge compared to the other (peer mentee).
- The main strategies of peer support offered in this study were appraisal support, instrumental support, emotional support and informational support.

- A manual from Peers for progress was adopted to train the peer mentors on delivering the different forms of support.
- Outcome of the peer support was analyzed qualitatively through focused group discussions and key informant interviews.

Peer support- Emotional support: Provision of empathy, love, trust, and caring.

Peer support- Instrumental support: Provision of tangible aid and services that directly assist a person in need.

Peer support- Informational support: Provision of advice, suggestions that a person can use to address problems.

Peer support- Appraisal support: Provision of information that is useful for self-evaluation (constructive feedback and affirmation)

Peer Mentor: A diabetic patient with experiential knowledge on management of diabetes and prevention of complications.

Peer Mentee: A diabetic patient receiving diabetic management care in the sampled hospitals and is in the study's peer support program

Peer Support Guideline: This is the tool that will be used to guide the activities of the peer support programme. It will provide the rules to be adhered to by the peer mentors and peer mentees while in the peer support relationship and the boundaries to be observed.

Performance of foot self-care:individuals' own activities directed at caring for their feet. These activities include skin and nail care, managing foot pain, and using proper footwear

Resources: Materials, energy, services, staff, knowledge, or other assets that are utilized to enable patients gain self-management knowledge and skills and prevent foot complications.

Self-Management: Patient adherence to a “self-treatment regimen” inclusive of diet, maintaining physical activity, daily monitoring of blood glucose levels, and adhering to medication therapy and foot care, all of which are vital to maintaining gylcemic and preventing diabetes related complications

Self-Management Education: A systematic intervention that involves active patient participation in self-monitoring and/or decision making. It recognizes that patient-provider collaboration and the enablement of problem-solving skills are crucial to the individual's ability for sustained self-care.

Standard treatment; Care given to all diabetic patients as prescribed by health management protocols and does not include the specific interventions in the research plan.

Teaching Aids: Resources used by a teacher/ educator/ facilitator/ peer mentor to clarify or enliven a subject to the diabetic patients.

CHAPTER ONE

INTRODUCTION

1.0 Overview

This chapter introduces the main concepts of the study which are peer support and foot self- care practices in prevention of diabetic foot complications. It contains background information, statement of the problem, broad and specific objectives, and research hypothesis. It also provides justification of the study and the theoretical framework upon which the study is based.

1.1 Background

Diabetic foot complications are amongst the most distressing adverse health outcomes of diabetes and constitutes a major public health problem (Armstrong et al., 2017).The diabetic foot complications include several pathologies, mainly diabetic peripheral neuropathy and peripheral arterial disease which result in foot ulceration. Diabetic foot ulceration may ultimately lead to amputation, especially when wound infection or osteomyelitis are involved (Amin & Doupis, 2016).

The lifetime risk of patient with diabetes developing a foot related complication is as high as twenty-five to forty percent compared to the non- diabetic population whose risk is fifteen percent (IDF, 2017). Limb amputations are the costliest and most feared consequence of foot ulcers. In diabetics, 84% of non-traumatic limb amputations are preceded by foot ulcers. The key to management of diabetic foot complications is prevention (Nather et al., 2018).Diabetic foot complications are associated with major morbidity, mortality, and reduced quality of life and is one of the most serious complications of diabetes mellitus (Jupiter et al., 2016). Five-year mortality rates from diabetes related foot complications are similar or worse compared to mortality rates of

many common cancers including cancer of the colon, breast, and prostate (Wukich et al., 2017). Given the morbidity and mortality associated with diabetic foot ulcers and infections, more attention should be focused on prevention (Bus et al., 2016).

According to a study done by Zhang et al., (2017) the prevalence of foot complications among diabetic patients ranges from 3% to 13% globally. The burden of diabetes as a disease is higher in developing countries compared to the developed high-income countries. In sub-Saharan Africa, the burden diabetic foot complications are increasing due to late diagnosis, poor awareness among patients, poor access to health care, poor self- care management and constrained resources (Zhang et al., 2017). A study by Achoki et al., (2019), estimated that the prevalence of non-communicable diseases has been highest in the western part of Kenya over the last five decades(Achoki et al., 2019).

As a result of this increasing burden, particularly in health services and related costs, individuals with chronic conditions such as diabetes need assistance in learning and maintaining self- care practices that support healthy living and prevent development of complications (Hailu et al., 2019). Patient education to foster self-care plays a key role in preventing foot complications and their recurrence by increasing patient compliance through improvement in understanding. Self-care practices refers to a person's ability to manage the symptoms, treatment, physical, psychosocial and lifestyle changes that are associated with living with a chronic condition (Gobeil-Lavoie et al., 2019).

One such strategy that supports self-care practices is peer support (Fisher et al., 2017). Peer support is an effective and cost friendly intervention in self-management of chronic health conditions (Munce et al., 2017).Peer support is defined as "support from a person who has experiential knowledge of a specific behavior or stressor and

has similar characteristics as the target population." Thus, people with a common illness can share knowledge, challenges, opportunities in a less formal or hierarchical way and more reciprocal relationship than between the clients and the health care providers (Puschner, 2018).

Peer support has been shown to improve self-care and reduce diabetes associated complications due to increased knowledge and feeling of social connectedness (Debussche et al., 2018).Peers can support their own recovery and the recovery of others through practical and emotional support, positive self-disclosure, promoting hope, empowerment, self-efficacy, and expanding social networks (Puschner, 2018). Peer support is a strategy that has been widely used to improve physical, emotional, and psychological health, and to promote behavior change and self-care across diverse conditions and population groups. Peer support strategies are also uniquely able to offer individuals support and advice that is grounded in experiential knowledge and is specific to a particular condition, circumstance, or cultural setting (Doull et al., 2017).

Peer support models provide a potentially low-cost flexible means which complements the current existing health care services. In this way, trained peer leaders can become qualified extensions to a formal healthcare system, capable of assisting in education delivery and bolstering the efforts of professional staff (Wang et al., 2022).

Evidence shows that peer support has been a successful intervention in a wide variety of health care settings including management of people with mental illnesses, adolescent health, and chronic illnesses (Puschner, 2018; Wang et al., 2022). Very

few studies have documented the success of this intervention on foot self-care practices, none of them in Western Kenya.

A study by Puschner (2018), on using peer support to develop empowering mental health services showed that Peers carry the potential for a distinct contribution not possible from traditional mental health professions such as psychiatry, psychology, and nursing. As they de-stigmatize mental illness, offer alternative viewpoints in understanding clients, and strengthen a person-focused (rather than a pathological-focused) discourse, their function is vital for users' recovery as well as system change.

Studies show that peer support can improve adolescent and young people with HIV linkage, adherence, viral suppression, retention, and psychosocial well being. Peer support models can also provide young peer supporters with opportunities for leadership development, capacity building and youth-led advocacy, helping to combat the negative effects of self-stigma and peer pressure (Kowitt et al., 2015; Puschner, 2018).

1.2 Statement of the Problem

The burden of chronic disease management, to improve health outcomes and prevent complications, is increasingly falling on patients and their caregivers (Embuldeniya et al., 2013; Thompson et al., 2022). The global burden of diabetes is increasing, and with it there is a parallel increase in diabetes related complications (IDF, 2021).

Sub-Saharan Africa continues to face amongst the highest mortality rates in the world due to limited access to quality diabetes care (Pastakia et al., 2018). Even though there is paucity of data on the trends of diabetic foot in Kenya, it is estimated that the

prevalence of diabetes is about 3.3%. This figure is projected to rise to 4.5% by 2025 (IDF, 2017). A study by Achwoka et al., (2019) estimated that the prevalence of non-communicable diseases has been highest in Western Kenya over the last five decades (Achwoka et al., 2019; Pastakia et al., 2018).

Proper self-care practices learnt through contact between healthcare providers and patients remains the cornerstone to prevention of foot complications however, patients face several barriers to care that may include shortage of health care providers against the required patient- health provider ratio, distance to the health care facility, lack of awareness, weak social support systems, and poor local health system capacity (Kasiya et al., 2017).

According to the Kenya Medical Board, there are only about 7,000 actively practicing health professionals in Kenya. However, there are about only 12 endocrinologists who specialize in diabetes management (Onteri et al., 2023). Moreover, diabetic patients in western Kenya face the challenge of scarce human resource to facilitate self-care education with a nurse patient ratio of 34.87: 100,000 which is below the national average of 51.5: 100,000 (Achoki et al., 2019; Nebert et al., 2017).

Evidence shows that peer support has been a successful intervention in a wide variety of health care settings including management of people with mental illnesses, adolescent health, and chronic illnesses however there is limited evidence to support its effectiveness in the prevention of complications amongst diabetes patients, particularly foot complications (Ahola et al., 2017; Puschner, 2018).

There is also substantial variation in the degree of training and level of involvement of the peer mentors or community health workers in these studies, with many having health care professionals rather than the peers themselves facilitating the peer support

groups. Clinical guidelines should therefore be developed to raise the standard of healthcare provided to diabetic patients; one such evidence is use of peer support to complement nurse/ healthcare provider led patient management (Nebert et al., 2017).

While studies have been conducted on diabetes self-foot care practices, its effectiveness has not been determined (Maingi et al., 2020). The current study trained and employed the use of diabetic patients as peer mentors with the intention of creating expert patients able to manage their own illness and prevent associated complications. Therefore this study investigated the effectiveness of patient led peer support for foot self- care practices in the prevention of foot complications in diabetes patients with the aim of proposing a peer ssupport framework for promoting foot self-care practices.

1.3 Main Objective

To determine the effectiveness of peer support on foot self-care practices for prevention of diabetic foot complications among patients in Western Kenya.

1.3.1 Specific Objectives

i. To assess patients' performance of foot self-care practices for prevention of diabetic foot complications among patients in Western Kenya
ii. To examine factors influencing peer support on foot self-care practices for prevention diabetic foot complications among patients in Western Kenya
iii. To analyze the outcome of peer support strategies on foot self-care practices for prevention of diabetic foot complications among patients in Western Kenya
iv. To propose a peer support framework for foot self-care practices in prevention of diabetic foot complications among patients in Western Kenya

1.4 Research Hypothesis

Null hypothesis: Peer support is not effective on foot self-care practices for prevention of foot complications among patients with diabetes mellitus in Western Kenya

Alternate hypothesis: Peer support is effective on foot self-care practices for prevention of foot complications among patients with diabetes mellitus in Western Kenya

1.5 Research Questions

1. What is the performance of foot self-care practices for the prevention of foot complications among patients with diabetes mellitus in Western Kenya
2. Which factors influence effectiveness of peer support for the prevention of foot complications among patients with diabetes mellitus in Western Kenya?
3. What are the outcomes of the peer support strategies for the prevention of foot complications among patients with diabetes mellitus in Western Kenya?
4. Which peer support framework can be used in the prevention of diabetic foot complications?

1.6 Justification of the Study

According to the 9th edition of the International Diabetes Federation (IDF), Diabetes Atlas, there are now more than 463 million adults living with diabetes around the world. This number is estimated to rise to 700 million by 2045(IDF, 2021).

The clinical impact of peer support in type 2 diabetes varies in different populations. Few health economic analyses of diabetes peer support have been undertaken and those that have been contradictory (Mohebi et al., 2018).

While contact between healthcare providers and patients remains the cornerstone to mastering foot self-care practices for prevention of diabetic foot complications,

patients face several barriers to care particularly shortage of health care providers against the required patient- health provider ratio. (Kasiya et al., 2017).

There is an urgent need to find new effective ways to improve diabetes self- care practices and prevent diabetes related complications; peer support is a promising evidence-based strategy.

The findings of this study will help revolutionize diabetes health care by proposing an innovative cost-effective model for prevention of diabetes foot complications. The findings of this study will help inform the development of a long-term peer support program, supported by public policy and assisted with a sustainable revenue model to provide value to patients with diabetes.

Further, the study findings will be of great significance to a number of parties including healthcare service providers, policy designers, Kenyan national government, County governments in Western Kenya, diabetic patients, and future scholars interested in prevention of diabetic foot complications. The health service providers within and outside Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH), Siaya County Teaching and Referral Hospital (SCTRH) and Kakamega County Teaching and Referral Hospital (KCTRH) will benefit from an empirically proven audit in the prevention of diabetic foot complications using the proposed PEER-CARE framework. This will, in addition, enable them redesign and refine their strategy towards providing and improving peer support to diabetic clients. Policy designers are also expected to be rewarded through study recommendations as inputs in formulating policies and approaches that are anchored on appropriate health safeguards. Both national and county governments, through the Ministry/department of Health, are expected to be kept abreast from the independent inferences so as to quantify progress towards Vision 2030 and realization of MDG goals. The resident

citizens will benefit from possible improved investment from interested stakeholders based on the established gaps. And, scholars will find an additional reference in focusing future related or advanced studies.

1.7 Limitation of the study

Sample Size and Generalizability:

The study may have utilized a relatively small sample size and participants may not have been representative of the entire diabetic population thus affecting the generalizability of the findings to the broader diabetic population in Western Kenya and other regions.

Study duration:

The study duration may be insufficient to observe long-term effects of peer support on foot complications, which develop over extended periods.

Variability in Peer Support: Differences in the quality and consistency of peer support provided could affect the outcomes, making it challenging to attribute changes solely to the intervention.

Cultural and Social Factors:

Cultural beliefs and social norms in Western Kenya might impact the acceptance and effectiveness of peer support interventions, which may not be fully accounted for in the study design.

Intervention Fidelity

Ensuring that the peer support intervention is delivered as intended across all participants can be challenging, potentially affecting the study's internal validity

1.8 Delimitations of the study

1. **Sample Size and Generalizability**

   While generalizability may be limited because the study focused on a specific subset of the diabetic population, the findings contribute valuable contextual knowledge applicable within similar settings.

2. **Study Duration**

   The study assessed the short-to-medium-term impact of peer support interventions, acknowledging that long-term effects require further extended studies and the same highlighted in the study's recommendations.

3. **Variability in Peer Support**

   The peer support training and implementation were standardized, individual differences in delivery were recognized as an inherent feature of the intervention rather than a flaw in the study.

4. **Cultural and Social Factors**

   The study setting was within the cultural context of Western Kenya, and findings may not universally apply to areas with differing social norms and cultural beliefs.

5. **Intervention Fidelity**

   strict implementation protocols were followed, however natural variations in peer support delivery were expected and considered a part of real-world effectiveness assessment rather than a weakness in the methodology.

1.9 Theoretical Model

The study's underlying theoretical model is Social Support Theory by Francis Cullen, & Don Drennon Galla (Wilcox, 2010). Social support is a middle range theory that focuses on relationships, the interactions within those relationships and their impact

on health behavior, health status, use of health care services and health outcomes (Kort-Butler, 2017; Leahy-Warren, 2015).

Social support from significant others, family, and friends is linked to patients and others, being better informed about health status, and other self-care behaviors (Laopoulou et al., 2020). Social support involves interaction and exchange of resources at least between two people with the aim of improving the well being of the receiver. Social support is based on the interchange of aid between people that help them deal with stressful experiences and enrich their psychological welfare as well as their knowledge, attitude, and practice towards a particular stressor.

It has four main domains: Emotional support, Instrumental support, Appraisal support and Informational support. Emotional Support is a form of social support that is connected to common occurrences and incidents. It encompasses endowment of understanding, compassion, affection, reliance, and consideration. Instrumental Support is a form of social support containing providence of tangible and concrete assistance and aid that directly helps a person.

Informational support is a form of social support involving suggestions, opinions, counselling, ideas that a person can utilize to understand and solve problems. Appraisal report is a form of social support concerning the reservation of information beneficial for self-evaluation such as constructive criticism, confirmation, affirmation, and societal evaluation.

Peer support is the support from an individual with experiential knowledge based on sharing of similar life experiences or prevention plans in daily life (Aswathy et al., 2013). Peer support provides emotional, motivational, and practical assistance by nonprofessionals for complex health behavior (Fisher et al, 2018)

1.10 Theoretical Framework

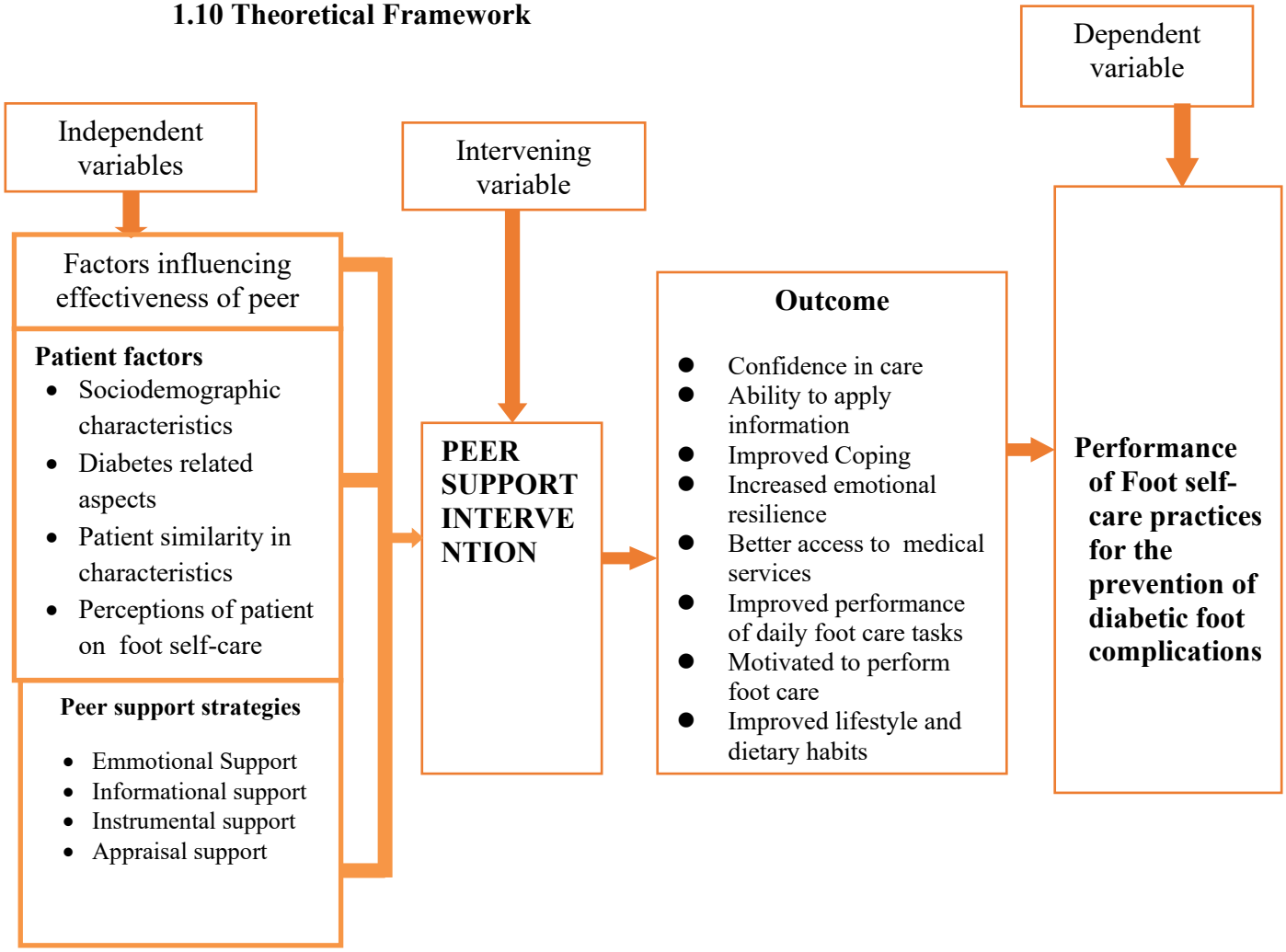

Figure 1.1: The study's Theoretical framework
Source: Adapted from Social Support theory by Don Drennon-Gala and Francis Cullen (1994)

CHAPTER TWO

LITERATURE REVIEW

2.0 Overview

This chapter involved a critique of studies previously done on peer support and diabetes foot complications with the aim of determining the effectiveness of peer support on for performance of foot self-care practices for prevention of diabetic foot complications.

It contains background to the study, relevant literature in relation to peer support interventions, foot self-care practices, outcome of peer support strategies and factors influencing peer support interventions highlighting possible gaps that this study sought to fill and possibly propose a model that will be used to promote foot self-care practices and prevent diabetic foot complications.

2.1.1 Introduction

Kenya is experiencing an epidemiological transition in its disease burden from communicable to non-communicable diseases resulting in the double burden of disease (Kenya National Bureau of Statistics (KNBS), 2015). Diabetes mellitus is among the four major non- communicable diseases (NCD) comprising of cancers, chronic obstructive pulmonary illnesses and cardiovascular diseases that jointly contribute to 63% of deaths globally (Lin et al., 2020). In Kenya, NCD accounted for over 50% hospital admissions and over 40% mortalities in 2015 (Achoki et al., 2019; KNBS, 2015).

The burden of diabetes mellitus is gradually increasing. The global prevalence of diabetes mellitus in 2021 was estimated to be 10.4 % (537 million people) and is predicted to rise to 643 million (11.3%) by 2030 and to 783 million (12.2%) by 2045 (IDF, 2021).

Africa presents a higher diabetic foot complications prevalence estimate of 7.2% against global figures of 6.3% (Suglo, Winkley & Sturt, 2024) while Sub-Saharan Africa continues to face amongst the highest mortality rates in the world due to limited access to quality diabetes care (Pastakia et al., 2018).

It is estimated that the prevalence of diabetes in Kenya is about 3.3%. This figure is projected to rise to 4.5% by 2025 (IDF, 2017). However, this figure may not reflect the true prevalence and may be an underestimate as 69% of persons with diabetes are undiagnosed (Lin et al., 2020). The increase in prevalence is because of longer life expectancy and changes in lifestyle (Mariam et al., 2017). The prevalence of diabetes has been highest in Western region of Kenya over the last five decades (Achoki et al., 2019)

Diabetes mellitus is associated with many health-related complications that cause significant morbidity and mortalities; however, none are more devastating than those complications involving the foot. Diabetic foot complications have significant health and socioeconomic impact which greatly lower the quality of life of the patient and impose a heavy economic burden on the patient, family, and community (Amin & Doupis, 2016).

The lifetime risk of a patient with diabetes developing a foot related complication is as high as 25% to 45% compared to non- diabetic patients whose risk is 15%(IDF, 2015).The International Diabetes Federation estimates that at least one limb is lost due to diabetic foot complication somewhere in the world every 30 seconds (IDF, 2017). Diabetic foot complication is the most common cause of hospitalization in diabetic patients and has significant socioeconomic impact (Khan et al., 2017).

The clinical presentation of foot complications ranges from simple to highly complex, including life-threatening infections and amputations (Rossboth et al., 2021), however, the development of foot complications is highly preventable through proper self-management practices (Nather et al., 2018).

Self-care of diabetes is complex. People living with diabetes require more than medical treatment from health care providers: they also need a lot of support in mastering and sustaining complex self-care activities. Evidence shows that without sustained support, many patients are unable to effectively manage their condition, leading to diabetes related complications. This support is ideally provided on a one-to-one basis but is often impossible due to limited resources (Hailu et al., 2019).

Kenya Medical Practice and Dentist Board report that among 7000 medical officers, there are only 12 endocrinologists to manage the over half a million diabetes patients currently in Kenya(Onteri et al., 2023). In addition, nurses who often manage the diabetes clinic are often faced with the challenge of regularly communicating with a large, dispersed panel of patients and tailoring that communication to individual patient needs (Kasiya et al., 2017). Proper self-care learnt through contact between healthcare providers and patients remains the most ideal method for prevention of foot

complications however there is limitation of resources especially human resource. Therefore, there is need to come up with an innovative, cost effective and efficient strategy to manage diabetes patients and prevent foot complications (Paton et. al., 2021)

In response to this need, peer support interventions are increasingly being utilized to complement routine patient care and prevent development of complications while improving quality of life. Peer support interventions are based on the assumption that patients can greatly benefit from each other in terms of knowledge, skills, utilization of minimal resources and emotional support. If effective, peer support models would be a promising addition to public health systems that face severe resource constraints and increasing needs among patients living with diabetes and/or other chronic conditions. This study therefore sought to investigate the effectiveness of peer support in the utilization of self-care practices for prevention of foot complications amongst patients with diabetes.

2.1.2 Background of the Study

Diabetes is a chronic metabolic disorder characterized by hyperglycaemia resulting from anomalies in insulin secretion, insulin action, or both. Chronic hyperglycemia in diabetes is associated with long-term damage, dysfunction, and failure of different organs, especially the eyes, feet, kidneys, nerves, heart, and blood vessels (American Diabetes Foundation, 2010; WHO, 2023).

Several pathophysiological mechanisms are involved in development of diabetes. These range from autoimmune destruction of the beta cells of the pancreas with consequent insulin deficiency to abnormalities that result in resistance to insulin

action. Impaired insulin action results from inadequate insulin secretion and/or reduced tissue responses to insulin. Impairment of insulin secretion and defects in insulin action may coexist in the same patient, and it is often unclear which abnormality, if either alone, is the main cause of the hyperglycemia (Samar et al., 2023).

Symptoms of hyperglycemia in patients with diabetes include polyuria, polydipsia, weight loss, polyphagia, vision impairment and increased susceptibility to infections. Medical emergencies of diabetes include diabetic ketoacidosis and non-ketotic hyperosmolar syndrome. Long-term complications of diabetes include retinopathy, nephropathy, peripheral neuropathy with risk of foot ulcers, amputations, and Charcot joints; and autonomic neuropathy causing gastrointestinal, genitourinary, and cardiovascular symptoms and sexual dysfunction. Patients with diabetes also have increased incidence of peripheral arterial and cerebrovascular diseases (Sastre et al, 2023).

The main management of diabetes involves the use of oral hypoglycemic agents and insulin. However, the impact of the diagnosis of a chronic illness like diabetes usually generates a multiplicity of feelings, moving through narratives of complications and death events in an effort to move from denial to acceptance and finally autonomy for self-care practices (Silva, 2018).

The treatment of diabetes encompasses a number of factors, some of which are specific, others global. Overall, they all involve a patient education on self-care practices and the modification of a lifestyle from the time of diagnosis. For patients,

this includes submitting to rules that are not always easy, such as healthy eating, correct and regular use of medication, including oral anti-diabetic drugs and/or insulin, and self-monitoring of blood glucose. Therefore, more than preventive actions, the health care system needs health promoting actions that impact on the quality of life of persons already affected by the illness. It is necessary to instil a greater autonomy for self-care practices and participation into the recommended treatment, strategies that go beyond the use of medications if patients are to successfully adhere to management and ultimately prevent or slow down occurrence of complications (Silva, 2018).

However, maintaining such a rigorous lifestyle that shifts center of care to the patients can be challenging and difficult (Keng et al., 2022). Owing to constraints in time, human resources, and material resources, healthcare professionals can only provide limited individual assistance to patients with diabetes. Consequently, there is an urgent need for an effective approach to diabetes education and support. One such intervention that promotes autonomy in self-care amongst patients with chronic illnesses is peer support, a strategy proposed by WHO (IDF, 2021).

Peer support is a strategy that has been widely used to improve physical, emotional and psychological health, and to promote behavior change and self-care across diverse conditions and population groups. Peer support strategies are also uniquely able to offer individuals support and advice that is grounded in experiential knowledge and is specific to a particular condition, circumstance or cultural setting (Doull, 2017)

Peer support is based on structured guidance, knowledge sharing regarding diabetes self-management and prevention of complications. Lived experiences of patients who have managed their condition well are shared to educate and help other patients with diabetes. By sharing these experiences with peers and providing unique and valuable socio-psychological support, peer support has advantages such as timeliness, cost-effectiveness, and flexibility, leading to it being widely used in clinical practice (Chen, 2024).

Peer support has been identified as an accessible, affordable and easy-to-implement health care resource that has beneficial effects across populations. The long wait times and numerous barriers to accessing professional health care services highlight the importance of more accessible, effective and timely health care resources. As highlighted by several studies, peer support has been effective in improving health outcomes including reducing the depressive symptoms, stress and anxiety among young adults , improved coping amongst patients with breast cancer, better adherence amongst patients with hypertension and improved glycemic control amongst diabetes patients (Richard, 2022). The results of these studies suggest that peer support may represent a valuable intervention for improving health outcomes among diabetes patients; specifically, tailored towards the prevention of foot complications.

2.2 Peer Support Interventions

Peer support is a promising strategy in the improvement of clinical outcomes in patients with chronic illnesses especially in resource limited settings as it has improved over the years to achieve specific health outcomes (Thompson et al., 2022).

Peer support strategies provide practical and emotional support among patients with chronic illnesses enabling them to adapt to complex behaviors that are critical to staying healthy by encouraging regular appropriate care and providing an avenue for coping with the stressors of chronic diseases (Fisher et al., 2017)

Peer support has the additional advantage of allowing those with experiential knowledge of a chronic condition to share their challenges and opportunities and support people who have been more recently diagnosed in their journeys towards redefining their lives and their health goals. This form of support is now recognized as an important adjunct to professional health care (Chronic Illness Alliance, 2019)

The rate of re-hospitalization among patients with chronic illnesses like diabetes is high, however up to 75% of re-admissions can be prevented (Chin et al., 2019). Evidence from various studies shows that peer support has been effective in reducing re-hospitalizations, reducing inpatient days, lowering overall cost of health services, and improving quality of life (Ryan et al., 2019).

Cooper & Wilcock (2013) in their study found that peer support strategies are generally more effective than the usual care given to cancer patients. He, however noted that more studies were required to make specific recommendations on peer support strategies. This study conducted high quality research on effectiveness of peer support in utilization of self-care practices specifically for prevention of foot complications and provided evidence based recommendations.

A study by Wang et al. (2021), examining adolescent health and role of peer support found that adolescents who receive peer support were less likely to report behavioral problems, had better academic grades, were more satisfied with their lives and experienced less psychological distress including anxiety and depression. The study concluded that overall, peer support had an important role in the development of adolescents. Adolescence is a complex stage in life and requires adaptation to the changes that come with the transition from childhood to adulthood. Similarly, diabetes is a complex illness that requires a patient to adapt to a new regimen in life to prevent complications and improve a patient's health outcomes (Wang et al., 2021). This study utilized peer support strategies to help the patient adapt to the complex self-care activities and prevent adverse health outcomes, more specifically foot complications.

2.2.1 Peer Support in Chronic Illness

People with chronic illnesses need more than medical management from the healthcare team to master and sustain complex self-care practices necessary to enable them to live healthy lives and prevent complications. These behaviors often referred to as self-management include following complicated medication regimens, effective coping mechanism, exercise and identification of life-threatening symptoms and complications (Debussche et al., 2018).

Without sustained support, studies have shown that many patients are unable to sustain self-care practices. This often leads to adverse health outcomes, re-hospitalizations and complications. Provision of this support by health care providers on a one-on-one basis between the healthcare team and the patients is often too costly

(Gobeil-Lavoie et al., 2019). The current study utilized peer led support to counter this challenge.

Peer support is a promising strategy in the improvement of clinical outcomes in patients with chronic illnesses especially in resource limited settings as it has improved over the years to achieve specific health outcomes (Chronic Illness Alliance, 2019). When employed, peer support strategies empower patients to better manage their illnesses and provide opportunities for patients to help others facing the same healthcare challenges (Bellamy et al., 2017).

A meta-analysis of ten randomized controlled trials that evaluated effectiveness of peer support strategies in improving clinical outcomes of patients with mental illnesses revealed that peer delivered services produced better clinical psychosocial outcomes compared to usual care conditions with patients expressing hope and improved quality of life (Bellamy et al., 2017; Ryan et al., 2019).

Evidence shows that women with mental health illnesses value peer support as an effective strategy in coping with their disorders (Richard et al., 2022; Sun et al., 2022). They attribute effectiveness of peer support to mechanisms such as ability to speak freely to a peer who has had similar experiences. Findings from these studies have shown that these patients experience increased social support, confidence, and hope for recovery (McLeish et al., 2023). These studies however recommended that a randomized controlled trial is warranted given the high recruitment, adherence, and acceptability of the peer support intervention to participants (Shim & Compton, 2020). The current study utilized rigorous experimental designs to investigate

effectiveness of peer support in utilization of self-care practices for the prevention of foot complications.

A systematic review and meta- analysis of electronic databases to assess the effectiveness, economics, and satisfaction of peer support in management of depression in the prenatal and postpartum populations found that peer support strategies may effectively prevent or reduce the harm of perinatal depression. Evidence further showed that peer support is a cost saving strategy that effectively addresses the challenge of shortage of health care workers. In addition, the peer support strategies were accepted by women (Liang et al., 2021). The study however recommended more studies with better study designs and larger sample size to investigate potential factors associated with the positive impacts of peer support strategies in the management of illnesses. The current study attempted to address the gaps identified by Liang's study.

A study by DeMello et al. (2018) investigated the effectiveness of peer support in encouraging physical activity amongst women with breast cancer. At the end of the12-week physical activity program, the intervention participants more closely resembled the peer mentors in the way they carried out their exercise activities(DeMello et al., 2018). This study's findings demonstrated that peer support strategy greatly influence a patient's/ client's health care behaviors, the concept and strategy that the current study utilized.

Burton et al. (2018) conducted a systematic review and meta-analysis exploring the effectiveness of peer support in exercise programs for older people. They noted that

peer support appeared to improve adherence to exercise programs, with the increased social engagement provided by peer support being valued by older people. The social aspect of peer support was an attraction to engaging in physical exercise (Burton et al., 2018).

A systematic review was conducted to examine the effects of peer support strategies on homeless people. The participants reported that peer support provided social support, assisted with skills development and, in some instances, reduced the number of homeless days (Barker & Maguire, 2017).

Transition from childhood to adulthood is particularly challenging for those with chronic illnesses as the responsibilities of disease management shift from caregivers to patients themselves, adolescents are expected to gain knowledge and self-management skills to become independent. A pilot study suggested that a web-based peer support program is an effective tool for providing education and self-care skills to youth with chronic illnesses such as hemophilia (Breakey et al., 2018). Another study by Lu et al. (2015), concluded that many adolescents and young adults with Type 1 diabetes mellitus are interested in peer mentoring to facilitate learning and sharing essential diabetes management skills and experiences (Lu et al., 2015). These studies confirm that peer support strategies may effective in improving health outcomes amongst patients of all ages.

2.2.2 Peer support in Foot Self -Care Practices

Foot complications often occur in people with diabetes resulting in high mortality, morbidity, and resource utilization (Lazzarini et al., 2018). The lifetime risk of developing a foot complication is between 19% and 34%. Treatment of these foot

ulcers is challenging because of their multifactorial cause, and it places a high burden on patients, health-care systems, and families. Even when an ulcer is successfully healed, risk for recurrence is high, with reported recurrence rates of 40% in the first year and 65% in the first 3 years, after healing (Armstrong et al., 2017).

Globally, one million amputations are performed annually due to diabetes foot related complications. It is estimated that in every 40 minutes a limb is lost through amputation due to diabetes. Therefore, prevention of foot ulcers is of paramount importance and has long been recognized as a priority by the International Working Group on the Diabetic Foot (IWGDF) (Jakosz, 2019). The World Health Organization (WHO) considers peer support as an economic and flexible intervention which can improve care and diabetes outcomes (Ghasemi, 2021).

Patient education and proper screening at every hospital visit are considered an essential part of management however this often translates to better knowledge and positive short-term behavior change with no significant clinical endpoints of diabetes foot complications (Kasiya et al., 2017). The current study utilized peer support strategies, long-term approaches to healthcare that are likely to bring about sustained change with improved health outcomes amongst patients with diabetes.

A study by Johansson et al. (2016) on effectiveness of peer support strategies in the improvement of metabolic control in diabetes patients, concluded that group-based peer support strategies as a complement intervention to the usual diabetes care of type 2 diabetes is feasible. It enables health care providers to offer additional support to patients willing to be active and change their lifestyle, while requiring minimal effort

from health care workers, and it can be offered at low cost as the intervention is mainly carried out by the patients themselves(Johansson et al., 2016). Johansson's study demonstrated peer support strategies as potentially low-cost intervention that can be used to improve health outcomes in resource limited settings.

A meta-analysis on effectiveness of peer support strategies on self-efficacy and self-management of people with type 2 diabetes found that peer support significantly improved self-efficacy and self-management in these patients and therefore recommended that peer support should be considered as a complementary treatment for patients with type 2 diabetes. The study further recommended that medical staff should encourage the use of peer support strategies in the teaching content of patients with type 2 diabetes to improve their self-efficacy and self-management (Liang et al., 2021).

Results from a prospective cohort study conducted by Sharma & Khan, (2021), on the effects of a peer-to-peer support group in foot care revealed a highly statistically significant and clinically meaningful increase in the component of knowledge, attitude and practice scores following the program. Increase in knowledge, attitude and practice is linked to improvement of health outcomes and reduction in associated complication. The study demonstrated that peer support can increase knowledge, attitude, and practice of foot care amongst diabetes patients hence prevent foot complications (Sharma & Khan, 2021). Whereas Sharma and Khan's study had peer groups that consisted of persons with diabetes, their family members, and prominent community leaders, the current study utilized peer groups that consisted of diabetes patients only with the aim of creating expert patients able to manage their own illness.

A hospital-based cross-sectional study was conducted by Mekonen & Gebeyehu, (2021) found that 46.4% of diabetic patients had poor foot self-care practice and that determinants of poor foot self-care included being male, having low educational status, living in rural areas, having diabetic complications, taking both injections and pills, lacking previous information about foot care, and having poor family support. The study recommended structured approaches to self-care practices that include health education emphasizing regular foot inspection and appropriate foot-wear . The current study employed structured peer support to promote foot self-care practices among patients with diabetes.

Findings from a systematic review of qualitative studies that explored patients' experiences with foot self-care highlighted the importance of patient perception, knowledge, and awareness in shaping self-care practices and further recommended tailored education and patient-centred interventions can improve foot self-care (Oni, 2020). The current study used peer support which offered tailored and patient centred strategy.

Mehmood et al., (2018) in their study on diabetic foot self-care among patients attending primary health centres in Dubai found that 47% of the respondents did not practice proper foot self-care. The current study was conducted in higher level hospitals, that is, tier five and tier six hospitals where it is expected that comprehensive health education and proper self-care practices are taught.

2.3 Factors Influencing Peer Support

Peer support is based on high quality mentor- mentee relationships however sharing the same illness may not be sufficient for high quality peer support mentorship experience and little research exists on the important matching criteria for peer mentorship relationships (Reis, Lemay & Finkenauer 2017). The current study utilized a computer generated randomized table to place participants in peer support groups with the aim of establishing effect on the program.

Gainforth et al., (2019) described that matching characteristics should be more focused on interest and lived experience, which differs from traditional models matching on level of injury/sex. The current study randomly selected patients and objectively adopted factors that positively influence the peer mentor mentee relationship while controlling for factors that negatively influence the relationship in the framework that the study proposed for performance of foot self-care practices preventing diabetic foot complications.

2.3.1 Sociodemographic Characteristics

The process of developing a social connection between peer mentors and the mentees is often influenced by demographic characteristics for example, whether they had the exact same diagnosis, age of illness onset, sex/gender, age difference between mentor and mentee (Lu et al., 2015; Otanga et al., 2022). The current study assessed sociodemographic factors that significantly influenced effectiveness of peer support.

Wang et al. (2022) in their study on development of peer support systems established that gender greatly influences development, participation, and success of peer support ties. Females were more likely to seek, provide and receive social support compared to their male counterparts as they have higher levels of self-disclosure.

While examining the effect of peer support on coping strategies amongst patients with spinal cord injury, a study by Rocchi, Zelaya & Sweet, (2018) found that peer support served as a means for promoting positive coping strategies for adults with spinal cord injury, however, duration with illness greatly influenced the outcome. The study further recommended that follow-up studies using more rigorous research methodologies such as cohort or experimental study designs be conducted to better understand the role of peer mentorship. The current study aimed to address this recommendation by utilizing quasi experimental study design.

Although peer support can be helpful, individuals may face geographic or logistical obstacles in obtaining peer support from others with the same illness. Particularly in the context of the global pandemic, where many patient visits were converted to telehealth and previously established support groups and other meetings were either put on hold or converted to a virtual format (Berkanish, 2022). The current study leveraged on the use of technology to connect with peers as this was viewed as a way to overcome many of these obstacles.

Fierloos et al., (2022) examined perceived social support received among parents of children with chronic illness and established that parents who were unemployed, those with low income and those with lower levels of education were increased risk of perceiving lower levels of social support. The study recommended that further studies be done to develop, implement and evaluate intervention strategies that strengthen perceived social support. The current study proposed a model that will address factors likely to lower levels of perceived social support.

A study by Özbayir et al., (2019) assessing the influence of sociodemographic factors on perceived social support among adult cancer patients concluded that age, gender, marital status, number of children, and educational status significantly influenced perceived social support. The current study established the specific sociodemographic factors likely to influence effectiveness of peer support in preventing foot complications.

A study by Kuhlman et al., (2019), found that college students were less likely to seek peer support from classmates of higher social standing than themselves because of fear of rejection or embarrassment. Students who have a much higher status were also less likely to seek support from classmates who have a much lower status because these classmates tend to have fewer resources to help others. Therefore, a large status gap may hinder the formation of peer support ties (Kuhlman et al., 2019).

2.3.2 Personal Commitments

While examining the effectiveness of peer support in the management of diabetes, Aziz et al., (2018) reported that major factors that influenced peer support were health related issues where study participants reported that they were unwell and could not engage their peer mentors, lack of time or work commitments for participants who engaged in gainful economic activities, location and timings of the meetings and family commitments that coincided with the peer support meetings.

The findings from a study by Ahola et al., (2017) that explored the perceived benefits and challenges of acting as a young adult peer mentor to adolescents with chronic illness established that it was common for scheduled sessions to get postponed owing to exams, appointments, or medical issues, either from the mentor or the mentee.

2.3.3 Similarities in Characteristics

Debussche et al., (2018) and Sharma & Khan, (2021) concluded in their studies that in pairing peer mentors and mentees, both experiential knowledge and "similar characteristics" facilitate building of a relationship amongst the peer support group members. Shared experience is paramount because it is the process of sharing and learning from each other that helps generate change.

Sarrami-Foroushani et al., (2014) described the concept of pairing peer support mentor with a peer support mentee who is closely aligned to them in terms of specific attributes such as gender, age, cultural factors, length of illness and cause of injury. Foroushani's study demonstrated that similarity between mentors and mentees facilitated the peer learning process (Sarrami-Foroushani et al., 2014).

In their review and analysis of the effect of peer-led self-management education programmes for adolescents with asthma, Zhong and Melendez-Torres (2017) included studies of interventions where 'peer educators had to undergo training, but did not necessarily have to have asthma, as long as the participant could relate to the educator, which could be through age. The study established that peer mentors did not necessarily have to be adolescents with asthma but that the mentors and the mentees in the program could relate. Zhong and Melendez's study emphasize the importance and having a point of convergence between the mentor and the mentee for the support group to be effective (Zhong & Melendez-Torres, 2017).

In a study by Petosa and Smith (2014), peer support interventions were utilized in schools for health behavior change, the peer mentors were relatively older than the

peer mentees. This was based on the assumption that older school children would have gone through the challenges faced by younger school children and could, therefore, serve as role models and health coaches (Petosa & Smith, 2014).

A quantitative synthesis of the experience and impact of peer support interventions in the management of chronic illnesses by Embuldeniya et al. (2013) concluded that peer mentors were required to have experiential knowledge of chronic illness but not necessarily the same chronic disease as their mentees. Similarly, Smith and Greenwood (2014) in their review of the peer support programs amongst career persons with dementia concluded that if one had dementia and had a career then extensive matching criteria was not needed (Embuldeniya et al., 2013).

2.3.4 Peer Support Mentorship Characteristics

The success of peer support depends on the relationship between peer mentors and the mentees. As important as mentoring is, it can be challenging to find and maintain a quality relationship (Ward et al., 2020). Hill et al., (2022) proposed a set of mentor mentee characteristics and outline the process of creating successful peer support mentorship programs (Hill et al., 2022). This study incorporated findings from literature that proposed attributes or skills of peer mentors/ mentees for successful mentorship.

2.3.4.1 Peer Mentor Characteristics

An effective mentor is most commonly described as available, approachable, experienced, supportive, trustworthy, enthusiastic, encouraging, and an active listener (Goldner & Ofra, 2009; Lin et al., 2013; Omary, 2008; Thomas-McLean et al., 2010; Tor et al., 2011). Skills and attributes this study trained and encouraged amongst the mentors.

Mentors provide both wisdom and guidance as well as encouragement and moral support (APA Presidential Task Force, 2022). Mentors may also assist with tactical networking and the navigation of professional settings/organizational structures. In addition, a mentor's ability to facilitate the development of a mentee as part of a positive process—not just providing advice, or challenging them but facilitating the mentee's own self-reflection and growth—is critical (Taherian & Shekarchian, 2008). Research also highlights the importance of a mentor being trustworthy, making the mentee feel safe within the mentoring relationship (Goldner & Ofra, 2009; Lin et al., 2013). Further, a mentor who collaboratively approaches goal-setting with mentees can be most effective (APA Presidential Task Force, 2022). If these personal characteristics and interpersonal communication skills are lacking, communication can be hindered, making it difficult for the relationship to progress. When present, an open, honest, and healthy mentoring relationship is facilitated.

2.3.4.2 Peer Mentee Characteristics

Mentee qualities are equally important to the relationship. Characteristics of a good mentee include being proactive, committed, willing to learn, excited, open-minded, and communicative (Thomas-McLean et al, 2010; Williams et al., 2004). Additional positive descriptors of a mentee include being hard-working, reliable, and inquisitive (Melanson, 2009) with a generally positive and respectful demeanor, active listening, ethical behavior, and the ability to set boundaries and adhere to them (American Psychological Association [APA] Presidential Task Force on Mentoring, 2022). Likewise, a mentee's availability and approachability are essential to a good mentoring relationship, with an openness to instruction and the ability for self-awareness and reflection that helps the mentee identify questions for mentors and skill deficits that have growth potential with guidance (APA Presidential Task Force, 2022;

Omary, 2008).. A mentee who initiates contact as needed and has a good understanding that a mentor's time is extremely valuable will produce a more productive and balanced relationship with their mentor (Williams et al., 2024). The current study also encouraged these attributes/ skills amongst the peer mentees because without full mentee participation, the onset of the potential benefits of the mentoring relationship may be delayed and the relationship may not progress to its full potential.

Various factors influence the effectiveness of peer support amongst different groups. The current study assessed the factors that influence the effectiveness of peer support interventions in performance of foot self- care practices preventing diabetic foot complications.

2.4 Outcome of Peer Support Strategies

Peer support is 'support provided by and for people with similar conditions, problems or experiences' (Fortuna, Solomon& Rivera 2022; Riessman, 1989).

Convening people with similar experiences creates a supportive space underpinned by respect, collective responsibility and an agreement on what is helpful. Peer support can be informal or formal. Informal peer support happens naturally within communities when people help others in similar circumstances based on their lived experience. However, without structure, this form of peer support is challenging to evaluate. In contrast, formal peer support brings people with similar experiences together intentionally to share knowledge for mutual benefit, building social connection and bettering outcomes (Fortuna, Solomon & Rivera, 2022). Formal peer support was the focus in this study, with the term generally describing patients with

diabetes assisting each other based on their common lived experience with the sole goal of preventing foot complications.

Peer support strategies offer social support pegged on four main domains: informational (information provided to another during a time of stress), instrumental (the provision of tangible goods and services or tangible aid), appraisal (the communication of information which is relevant to self-evaluation rather than problem solving), and emotional support (the provision of caring, empathy, love, and trust). The current study sought to determine the outcome of these domains in the life of the recipient.

Vahedparast et al., (2018) in assessing the role of social support in adherence to treatment regimens among patients with chronic illnesses only focused on emotional and informational support which were found to significantly improve adherence. Participants stated that the information received and shared between them was clear, easy to understand and applicable. The current study additionally looked at appraisal and instrumental support in preventing foot complications amongst diabetes patients.

While assessing like hood of anxiety and depression among formerly incarcerated Latino men receiving peer support, Muñoz-Laboy et al., 2014found that perceived emotional support was inversely associated with anxiety and depression while the other forms of support identified in the study were not associated with differences in the likelihood of anxiety/depression. Emotional support, however, was only useful in the immediate period after incarceration(Muñoz-Laboy et al., 2014). Munoz's study, therefore, recommended further research on piloting innovative strategies to enhance social support systems for long term benefit.

Ahola et al., (2017) in their study exploring the experience of young adults as peer mentors for other adolescents with chronic illness established that peer mentors appeared to not only provide but also receive informational and emotional support from both their mentees and fellow mentors. By reflecting back on their own experiences and lessons learned, peer mentors may be receiving indirect appraisal support through reinforcing their own positive coping and illness self-management. Peer mentors reported that they felt valued and had a sense of accomplishment that further motivated them to be role models. By providing peer support, mentors also received positive reinforcement on a regular basis. As they provided guidance to other mentees, they also evaluated themselves and readjusted their practices (Ahola et a., 2017). The current was also conceptualized with the assumption that there will be reciprocal and mutual benefit between peer mentors and mentees.

Cai et al. (2021) assessed self-reported emotional, informational, and instrumental support needs and their predictors in patients with breast cancer who have undergone surgery within three months prior to the study and found out that informational support levels were lower in the study population when compared with the reference group of the general population, while emotional and instrumental support were about average. The study participants reported that they did not get adequate informational support to help them effectively manage their condition (Cai et al., 2021). Management of diabetes and prevention of foot complications requires that patients get adequate correct information, the current study incorporated this domain of peer support.

While examining the types and sources of social support amongst patients with diabetes, Wallace et al. (2019), found that family and friends played a key role in providing social support. Patients reported that they felt encouraged and had a

positive outlook towards their life as a result of the support they received. They also reported that they perceived the support they received was genuine and affectionate. They however reported that family and friends did not really understand their journey and the challenges they experienced. The study concluded that support by peers with diabetes was underutilized within the context of diabetes self-management, both within and outside of the clinic setting (Wallace et al., 2019). The current study utilized peers with diabetes as opposed to family and friends.

While examining the effect of social support on diabetes, several researchers have found that peer led interventions that encompassed emotional support, instrumental support, appraisal support and informational support have had more favorable results such as increased ability to cope with stressors, improved glycemic control, reduced hospital stay, increased adherence to self-management behaviors, confidence in self-management, assistance with accessing medical services and emotional resilience (Shaya et al., 2014; Vissenberg et al., 2016).

While studies have explored the role of social support in diabetes self-management behaviors, there is limited research exploring the distinct types and their impact in reduction of foot complications. In addition, there are few studies using patient narratives to provide insight on the lived experience of journey preventing complications, particularly foot complications, as an everyday experience among patients with diabetes, an aspect the current study incorporated.

2.5 Peer Support Frameworks for Management Diabetes Foot Complications

The success of therapies for diabetes depends on the ability of adults with diabetes to successfully sustain effective self-management behaviors (Aziz et al., 2018).

The prevalence of diabetes mellitus is increasing, and the social and economic burden are catastrophic (Tim et al., 2017). Diabetic foot is a potential disabling disorder and the most prevalent diabetes-related cause of hospitalization (Ghasemi et al., 2021; Guariguata et al., 2014). It is estimated that diabetes patients consume up to triple amount of resources compared with persons without diabetes (Tim et al., 2017).

Besides their consequences on the health and well-being of patients, diabetic foot complications also impose a large economic burden on health systems and national economies. Maunoury et al., (2021) utilized alternative drugs, medicines, and dressings to reduce the cost implications of diabetes foot complications, the current study proposes a peer support framework that will reduce diabetes foot related cost burden (Maunoury et al., 2021).

A study by Onyango et al. (2022) concluded that diabetes services are unenforceable to most of the diabetes patients. There are significant direct and indirect costs borne by diabetes patients seeking healthcare services in Kenya. The study further suggested that healthcare systems should consider incorporating peer support in the healthcare pathway to make diabetes self-management services more accessible to diabetes patients (Onyango et al., 2022).

A meta-analysis on the effectiveness of peer support on self-efficacy and self-management in people with type 2 diabetes concluded that it significantly improved self-efficacy and self-management and further suggested that it should be considered

as a complementary treatment for patients with type 2 diabetes. Medical staff were encouraged to use peer support in the teaching content of patients with type 2 diabetes to improve their self-efficacy and self-management (Dandan et. al., 2021). The study however reported inconsistencies in implementation and evaluation of peer support, a gap the current study aimed to address by proposing a well-structured framework for delivery of peer support.

A controlled study based on a secondary data analysis of a cluster randomized trial that was evaluating if group-based peer support as an additional component to the standard care in type 2 diabetes can reduce the number of prescribed drugs; hospital admissions; and length of hospital stay concluded that peer support models indeed reduced the number of hospital admissions and length of hospital (Johansson et al., 2016). Another study that assessed the cost-effectiveness of group-based peer support compared with standard of care in a cluster randomized trial among patients with diabetes in Ireland using both in trial and beyond trial data demonstrated that group-based peer support was associated with a gain of 0.09 quality-adjusted life years (QALYs) over the course of a patient's life (Gillespie et al., 2012). This study utilized quasi experimental study design to investigate the effectiveness of peer support for foot self-care practices in prevention of diabetic foot complications and propose a framework that will potentially reduce health costs borne by diabetes patients while improving their health outcomes.

Peer support frameworks are a potentially low-cost, flexible means to supplement formal health care support. Peer support frameworks also potentially benefit both those receiving and those providing support. Reciprocal models for both receiving and

providing peer support are being rigorously evaluated. The unifying feature of these programs is that they seek to build on the strengths, knowledge, and experience those peers can offer.

2.6 Summary of Literature Review and Research Gap

Literature reports that the prevalence of diabetes is steadily increasing presenting with it a global health care crisis. The existing health care systems are not able to effectively manage the rising burden of diabetes thus the need to come up with innovate cost effective strategies to manage diabetes patients and prevent complications.

Basing on the literature above, peer support has been successfully utilized to manage patients especially those with chronic illnesses. The contributions peer support has displayed in literature cannot be underscored including improved health outcomes amongst patients with depression, adolescents with chronic illnesses, breast cancer patients amongst others through practical and emotional support, positive self-disclosure, promoting hope, empowerment, self-efficacy, and expanding social networks.

Several studies have however recommended further investigation using different methodologies to investigate the effectiveness of peer support as the current studies on peer support and diabetes management have reported inconclusive often contradictory reports with some studies reporting a positive impact while others report no impact.

CHAPTER THREE

RESEARCH METHODOLOGY

3.0 Overview

This chapter presents the overall research design, target population, study sample size, sampling techniques, methods of data collection, data collection instruments and procedures and the data analysis that enabled the researcher to achieve the study objectives.

3.1 Research Design

The study utilized a quasi experimental non-equivalent post-test only design that employed both qualitative and quantitative research approaches.

3.2 Study Area

The study utilized multiple sites in selected hospitals in Western Kenya to determine the effectiveness of peer support in for foot self-care practices in prevention of diabetic foot complications among patients.

Tier one to tier four hospitals usually refer their diabetes patients to tier five, and tier six hospitals for specialized care (Ministry of Public Health and Sanitation, Kenya, 2010). The study was conducted in tier five and tier six hospitals in Western Kenya. According to Mugenda and Mugenda (2013), when the study population is less than 10, 000, a sample size of between 10 and 30% is a good representation of the target population (Mugenda & Mugenda, 2003). Out of the eight hospitals that met the eligibility criteria, thirty percent were used for the study. All the eight hospitals were randomly assigned numbers on pieces of paper and the papers placed in an airtight glass jar. Thirty percent of the eight hospitals were selected for the study. Eight random students from the school of nursing at Masinde Muliro University of Science

and Technology were requested to participate in the balloting exercise. Three students picked hospitals that participated in the study while the other five picked hospitals that did not participate. The first student randomly picked the first paper from the glass jar without replacement. The first hospital to be picked became the intervention site. The second and the third students also picked hospital names from the glass jar without replacement. The second hospital became the control site, while the third hospital was used to carry out the pre-test. Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH) and Kakamega county teaching and referral hospital (KCTRH) were selected through balloting whereas Siaya County Referral Hospital was used for pretesting of the study tools. The study was conducted at JOOTRH and KCTRH.

Jaramogi Oginga Odinga Teaching and Referral Hospital is in Kisumu County. It is a tier five health facility funded by the Government of Kenya and overseen by the Ministry of Health. JOOTRH, a major referral hospital in Nyanza and Western regions of Kenya, serves a population of more than 5million; average annual outpatient visits are 197,200 and inpatient admissions of about 21,000. JOOTRH serves this population as the regional referral hospital. There are approximately 502 operational inpatient beds and four dedicated outpatient clinics available to all citizens of Kisumu and Nyanza province.

The diabetic services here encompass both inpatient and outpatient. Every day of the week, besides Saturday and Sunday, the clinic at JOOTRH sees diabetic patients. On average they serve about seventeen patients a day, both type 1 and type 2 diabetics.

On Fridays, specifically trained diabetic doctors work at the clinic and they can see up thirty diabetic patients (JOOTRH, 2015).

Kakamega County Teaching and Referral Hospital is in Kakamega County. It serves as a referral Centre of other counties which used to form western province, Vihiga, Busia and Bungoma. It is in Kakamega town situated along Kisumu –Webuye road. Kakamega County has second largest population of 1,660,651 amongst all the 47 counties in Kenya (Census, 2009). The facility has catchment population of 59,000. KCTRH has a dedicated diabetic clinic that sees an average of 15 patients per day and an average of 300 patients in one month (KCTRH, 2017).

3.3 Target Population

The target population was diabetic patients at JOOTRH and KCTRH. According to the hospital's permanent diabetes register, JOOTRH sees an average of 292 patients per month while KCTRH sees an average of 300 patients per month. The target population was therefore 592 diabetic patients attending the diabetic clinics at JOOTRH and KCTRH.

3.4.1 Inclusion Criteria

- Diabetes patients seeking diabetes clinic services at the study sites and who consent to participate in the study.
- Diabetes patients who are currently not in any peer led support interventions,
- Patients who have had diabetes for not more than three years

3.4.2 Exclusion Criteria

- Diabetes patients currently with a diabetic foot complication.

3.4 Sampling size determination

The study will utilize proportionate sampling method to determine the number of study participants in the different study sites. The accessible population in this study is approximately 592 patients.

Sample size calculated using Charan and Biswas, 2013 formula (Charan & Biswas, 2013).

$$\text{Sample size} = \frac{2(Z\alpha/2 + Z\beta)2\ P\ (1 - P)}{(P1 - P2)2}$$

Where $Z\alpha/2 = Z0.05/2 = Z0.025 = 1.96$ (From Z table) at type 1 error of 5%

$Z\beta = Z0.20 = 0.842$ (From Z table) at 80% power

P1 – P2 = Difference in proportion of events in two groups (In this case proportion of DMs with foot complications and those without) i.e effect size expected

P = Pooled prevalence = [prevalence in case group (P1) + prevalence in control group (P2)]/2

Substituting in this formula - $\text{Sample size} = \frac{2(Z\alpha/2 + Z\beta)2\ P\ (1 - P)}{(P1 - P2)2}$

P1 = 3.3% (prevalence of diabetes in Kenya)

P2 = 20% = (0.2) (Effect size in previous studies)

P = 0.033 + 0.2 /2 = 0.1165

$$\text{Sample size} = \frac{2(1.96 + 0.84)2 \times 0.1165(1 - 0.1165)}{(-0.167)2}$$

$$= \frac{2 \times 7.84 \times 0.1165 \times 08835}{0.027889}$$

=57.8689 + (10% non-response rate)

The study utilized 64 participants per study site.

3.4.1 Sampling Procedure

Each study area had sixty four (64) participants. The participants were purposively selected for a period of one month. Thereafter using the study criteria the participants were placed in their groups. An optimum number for group therapy is 8-12 participants (Ezhumalai, 2018). A total of seven groups were formed per study area. JOOTRH was used as the intervention site while KCTRH was the control site.

The peer support groups were designed to ensure diversity and balance across various demographic and clinical characteristics. The following criteria were considered for grouping:

Demographic Characteristics:

Age: Participants were stratified into age groups to ensure a mix of younger and older adults in each peer support group.

Gender: An almost equal distribution of male and female participants was maintained across all groups.

Clinical Characteristics:

Duration of Diabetes: Participants were categorized based on the number of years they have been diagnosed with diabetes to ensure that they are able to share their journey and experiences with managing diabetes.

Socioeconomic Status:

Participants were grouped to ensure a mix of different socioeconomic backgrounds, which could influence their access to healthcare resources and support systems.

Geographical Location:

To facilitate in-person meetings and support, participants were grouped based on their geographical proximity.

Group Composition

Each of the seven peer support groups consisted of 8-9 participants. The groups were designed to be heterogeneous, promoting diverse interactions and shared learning experiences.

The participants at KCTRH received standard treatment alone and were assessed for the foot self-care practices based on NAFF scores and development of foot complications using the Wagner scale at the end of the study duration.

The participants at JOOTRH received peer support in addition to standard treatment and were assessed for the foot self-care practices based on NAFF scores and development of foot complications using the Wagner Scale the end of study duration.

3.5 Research Instruments

Research instruments were adopted from literature review and modified to suit the study. Data collection was accomplished using researcher administered structured questionnaire, focused group discussion and key informant interviews. Development of foot complications was assessed using the Wagner scale a five item questionnaire that assesses foot status, while foot self- care practices was assessed using the Nottingham Assessment of Functional Foot-care Questionnaire (NAFF), a 29 items instrument developed by Lincoln and colleagues in 2007 and consists of foot assessment (2 questions), footwear (13 questions), foot hygiene (3 questions), prevent foot injury (7 questions), toenails, callus/corn care (2 questions), and wound/ulcer care (2 questions). In their methodological review of instruments that measure foot care behaviour among diabetes patients, Sipilä (2023), found the NAAF as the most comprehensive tool. The tool was modified to a 26 item instrument to be applicable to the study setting.

The study utilized two research assistants, who are Master of Science in Nursing students at MMUST undertaking medical surgical nursing as their specialty. One was based at JOOTR while another was at KCTRH and their role was assist peer mentors in meeting outlined peer support objectives and aid in administration of the research instruments. They were guided through the objectives of the study and trained on tool administration.

At the end of the study period, all the participants both in the control and the intervention sites were assessed for performance of self-foot care practices and occurrence of foot complications using the Nottingham Assessment of Functional Foot care (NAFF) scores and the Wagner scale respectively. Key informant interviews were used to collect data on peer support strategies. A questionnaire was administered to each participant in the intervention group and relevant data collected to examine the factors influencing effectiveness of peer support. FGD was conducted to get in-depth data regarding the outcome peer support strategies that aided in the formulation of the proposed peer care framework.

3.6 Pretesting of the Data Collection Tools

The data collection tools were pretested with the aim of checking for consistency, acceptability and approximating time required for completion. The pre-test was done at Siaya County Teaching and Referral Hospital using a sample of ten respondents that were conveniently sampled.

3.7 Validity of the Instrument

According to Creswell (2013), validity is the degree by which the sample of test items represents the content the test is designed to measure (Creswell, 2013). Mugenda &Mugenda (2003) contend that the usual procedure in assessing the content validity

of a measure is to use a professional or expert in a particular field (Mugenda & Mugenda, 2003). In this study, professional advice was sought from experts in the subject matter, especially my supervisors. Construct validity was measured by administering a few questionnaires to some respondents and analyzing the results to evaluate whether the questionnaire measures what it was required to measure, and whether the themes derived from data from the focused group discussion address effectiveness of peer support. Criterion validity was measured by analyzing outcome provided by the data collected using the questionnaires.

3.7.1 Reliability of the Instrument

According to Polit and Beck (2022), reliability refers to accuracy and the consistency of information that is collected in the study (Polit & Beck, 2022). By repeated trials on the data, it is expected to consistently yield similar or near similar results thus implying its replicability (Mugenda & Mugenda, 2003). For this purpose, a tool must be checked for its content and structure to ensure that it is relevant in collecting the required information. The research tools were subjected to specific tests depending on the nature of the tool. Questionnaires and Likert scales were subjected to Cronbach alpha to measure internal consistency thus ensuring reliability of the tool. Acceptable internal consistency is 0.7 and above.

3.7.2 Data Collection Procedure

The process begun by identifying and training the peer mentors in the experimental group. The peer mentors in the experimental group were subjected to a mentorship competency assessment prior to their training during which they were taken through the expected activities they were to undertake with the peer mentees. These include the number of sessions they were to have with the mentee and the objectives for each

session. They were also be expected to have a brief evaluation of themselves and the peer mentee for every session.

The peer support groups formed the FGD groups in the intervention site while the health care providers working at the diabetes clinics were the key informants for all the study sites.

The research assistants were also taken through their expected activities during the period of experiment and what to expect from the peer mentee and the peer mentor on every occasion of their meeting. Frequent feedback from the research assistants was provided to enhance smooth flow of information and data during the process of the experiment.

3.7.3 Study Peer Mentors

3.7.3.1 Pre-intervention Requirements for Peer Mentors

In addition to having patient inclusion criteria, the peer mentors were required to:

- Should be interested in education and leadership of the group as well as participation in the research
- Should be able to educate and communicate to the group
- Based on the evidence in the cases regarding the incidence of diabetes complications, having self-efficacy in foot care and diabetes management.
- The peer mentors will be selected from patients whom from the point of view of the diabetic clinic in charge and based on physical examinations found to be self-sufficient in foot care.
- They also must have a score of satisfactory or above satisfactory in the Nottingham Assessment test (Scores of 0- 26[below satisfactory], 27-52 [satisfactory], 53-78[above satisfactory)

3.7.3.2 Peer Mentor Training

A training manual adopted from peers for progress was used to train the peer mentors on how to support daily management of foot care for diabetes patients, provide social and emotional support and facilitate communication and support for access to clinical care and ongoing support.

The necessity of the practice, the intervention method, the research process, and the curriculum were fully described and taught in the training session. The training program consisted of four monthly workshops, each lasting eight hours, for a total of thirty two hours. Health care experts working in the diabetes clinics lead the workshops, which included both didactic components and interactive components such as role playing and group sharing. The main components of the training were:

Appraisal support: This section of the training encompassed focusing on positive thinking, empathetic listening, and appropriate questioning. Sustaining motivation for daily physical activity

Informational support: The emphasis of the training in this section was on positive thinking, goal setting, decision making, coping with stress, importance of wearing appropriate footwear and recognizing early signs of infection.

Instrumental support: Physical activities training while taking precautions to prevent injuries while ensuring the exercises are effective. Including precautions to take during exercise, stretching exercises, foot care techniques and the role of glucose control in foot health delivered by a nurse qualified in fitness training

Emotional support: Peer mentors were evaluated in terms of their ability to learn the correct information through questioning and role playing. A training session was also held to increase their skills to promote practical and information support and empower them in the field of support.

At the end of each training session, the information presented was reviewed as a role play to ensure learning. The training took place at the diabetic clinic of JOOTRH. A total of seven peer mentors were trained, one peer mentor for each group.

Intervention Activities

Peer-Led Support Groups

The established peer-led support groups for diabetic patients, focused on exchanging knowledge, experiences, and challenges related to foot self-care practices for prevention of foot complications. The patients meet regularly to discuss foot care and overall diabetes management. Peer mentors facilitated discussions, addressed concerns, and reinforced foot care practices. Group members provide mutual support and accountability in adhering to recommended self-care practices.

Mobile Health Peer Support Platform

Using the mobile platform called *watsup* a group was *c*reated to send educational messages, reminders for foot checks, and alerts on upcoming peer group meetings. Peer mentors and mentees also used the platform to answer questions promote knowledge-sharing, emotional support, motivation and provide real-time feedback on foot self-care practices.

Home Visits by Peer mentors

The peer support program provided a visitation plan where group members visited each other in their homes to assess their foot self-care practices and offer hands-on guidance. During visits, the peer mentors inspect patients' feet, demonstrate proper care techniques, identify need for medical attention, and provide educational materials.

Foot Self-Care assessment tool

Participants were provided with foot care assessment tools to record their daily foot self-care practices and symptoms. Peer mentors review these tools during group meetings or home visits to monitor adherence and provide personalized advice.

Collaboration with Healthcare Providers

The program integrates peer support with professional healthcare services, ensuring continuous monitoring and intervention for diabetic foot care. Peer mentors collaborate with healthcare providers in clinics to identify at-risk patients and refer them for medical evaluation when necessary. Regular joint meetings between peer mentors and healthcare providers were held to review patient progress and address emerging foot care issues. Healthcare professionals provide technical guidance, while peer mentors focus on day-to-day support and reinforcement of self-care practices.

The above interventions, centered on peer support, provide an integrated approach to improving foot self-care practices among diabetic patients in Western Kenya. Through education, social support, personalized care, and collaboration with healthcare providers, these interventions aim to prevent diabetic foot complications, reduce hospitalizations, and improve the quality of life for patients managing diabetes.

3.8 Statistical Data Analysis

Data analysis is a process whereby data is organized and synthesized to answer research questions and or test hypothesis (Sharma et al., 2014).

For longitudinal studies that are experimental in nature, it is imperative that the statistical analysis tools should be explicit on the variations as identified.

The completed questionnaires were checked for errors and completeness and entered in Microsoft 2010 Excel and subsequently analyzed with version 28 of Statistical

Package for the Social Sciences (SPSS Inc. Chicago). Raw data collected was analyzed by assigning numerical values to each response and entered in a coding table. Thereafter the numerical numbers representing responses from the questionnaires were transferred to a code sheet to obtain quantitative results from the closed ended questionnaires, frequencies, means, range, and standard deviations were done.

ANOVA was used, and significant levels were evaluated. Regression model was also applied to determine whether the peer support is effective for foot self-care practices in prevention of diabetic foot complications.

All moderating variables were subjected to multiple regression model analysis to determine their effect on peer support for foot self-care practices in prevention of diabetic foot complications.

Correlation tests were carried out to establish the strength of relationships of the different groups and the Pearson's correlation coefficient was used to determine strength of association between the peer support and foot self-care practices in prevention of foot complications.

Bi-variate analysis of dependent and independent variables was done with p values less than or equal to 0.05, being considered significant.

Qualitative data was analyzed using framework and thematic analysis methods to investigate the effectiveness of peer support for foot self-care practices in prevention of foot complications basing on the key themes identified.

Table 3. 1: Statistical Data Analysis

S/N	OBJECTIVE	VARIABLES	APPROACH	Tools to Collect Data	ANALYSIS
1.	To assess performance of foot self-care practices in prevention of diabetic foot complications among patients in Western Kenya	Foot self-care practice scores	Quantitative	NAFF Likert scale	ANOVA General regression model
2.	To examine the factors influencing peer support for foot self- care practices in prevention of diabetic foot complications among patients in Western Kenya	Sociodemographic factors, Peer mentor/ mentee characteristics, personal commitments	Quantitative	Structured questionnaire with both open and closed ended questions Likert scale	ANOVA linear regression model
3.	To analyze the outcome of peer support strategies for foot self-care practices in prevention of diabetic foot complications among patients in Western Kenya	Peer support strategies (Informational support, Instrumental support, Appraisal support, Emotional support)	Qualitative	FGD Key informant interviews	Thematic analysis Framework analysis
4.	To propose a peer support framework for foot self-care practices among diabetic patients in Western Kenya	Themes from qualitative analysis	Qualitative	FGD	Thematic analysis

3.9 Dissemination of Research Findings

The data generated from this study will be disseminated in scientific conferences and strategic institutional meetings in different institutions. The findings will also be published in referred journals for public consumption.

3.10 Ethical Considerations

The World Medical Association (WMA), in 1964, developed the Declaration of Helsinki as a statement of ethical principles for medical research involving human subjects that promote and safeguard the health, well-being and rights of patients who are involved in medical research (Burns & Grove 2011).

Ethical approval was sought from Masinde Muliro Research and Ethics committee in line with the institution's research policy. This was to ensure that all the protocols regarding conduct of research are conformed to. Ethical issues of the research focused on ensuring excellent research practices in accordance with global research standards. After which the researcher obtained a letter of introduction from Masinde Muliro University of Science and Technology School of Graduate Studies which aided in securing ethical approval and a research permit from the National Council for Science and Technology.

At JOOTRH, the researcher sought ethical approval from the facility's ethics and review committee, permission from the medical superintendent and diabetic clinic in charge. At Siaya County Hospital, the researcher sought permission from the medical superintendent and the medical outpatient clinic in charge. AT HCTRH the researcher sought permission from the medical superintendent and the Medical Outpatient Clinical in charge while at KCTRH, approval was sought from the county, medical superintendent and the diabetic clinic in charge.

Autonomy

Autonomy as a principle puts demand on the researcher to ensure that subjects are free to make their own decisions without being coerced in any manner while the study is ongoing. Whichever decision that is made by the subjects, the researcher needs to acknowledge and respect. It is therefore culminated in the process where the researcher provides adequate information to subjects prior to then giving what we call informed consent. For this purpose, the subjects must fall in a category that is legally authorized to make such consent and for those with reduced autonomy, the researcher

endeavors to protect their right. In this study, informed consent was sought from the participants after taking them through the consent form. A written consent form was provided for the mentors, mentees and key informants who were required to sign after the objectives and purpose of the study had been explained to them and they had understood. Any benefits or risks associated with the study were discussed in the process of consenting and the participants were allowed to withdraw from the study at any point without suffering any consequences. Participation in the study at all stages was purely on voluntary basis. All information shared during the study period will remain confidential. In the process of conducting research, the participants were protected from discomfort and disadvantages because of being included in the study and willingly providing their information. In the analysis of data from the questionnaires and key informants, coding without names was done enhancing the anonymity of the data.

Non-maleficence

This ethical principle places a demand on the researcher that the subjects should not be exposed to any form of harm during the process of research. However, in an event that possibility of harm is anticipated, it is imperative to the researcher that they provide a plan on how the study intents to mitigate the harm likely to occur. Harm in a study could result from either asking questions which are embarrassing, being disappointed or forcing people to divulge information which could result into anxiety or even fear among the respondents. It is the duty of a researcher to explain the consequences of the research which should be balanced against the risks involved.

Justice

Justice in research requires that all subjects be treated equally. The liability placed on the subjects should be proportionate with the probability of benefiting from the outcome of the research within the limits possible. This will be achieved by the researcher randomly sampling the hospitals that will be involved in the study then randomly assigning the participants in the treatment and control groups. By doing this, the participants will have an equal chance of being involved or not involved in the study and thus an equal distribution of any benefit or harm likely to occur. Because this is an intervention, that the researcher has confirmed to be beneficial to the participant, it is intended that the researcher ensure that the participants in the control group will be introduced to the intervention at a later date.

CHAPTER FOUR

RESULTS

4.0 Overview

This chapter is comprised of the analysis, presentation and interpretation of the findings resulting from this study. The chapter presents the participants characteristics followed by the results as per the study objectives.

4.1 Response rate

The study sampled 128 participants however 6 participants were lost to follow up in the intervention. The researcher therefore reduced the participants to 58 per group and data from 116 individuals was analyzed giving the study a response rate of 90.6%. According to Mugenda and Mugenda (2009), a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and above is excellent.

4.2 Participants' Characteristics

Participant characteristics included their sociodemographic characteristics and disease related aspects. Continuous variables were assessed for measures of central tendencies and categorical variables summarized into proportions.

4.2.1Sociodemographic Characteristics and Disease Related Aspects of Participants

Sociodemographic characteristics and disease related aspects of participants were summarized using descriptive analysis. The mean age of the participants was 51.7±10.9 years. Majority of individuals in the study were aged 50 or older, comprising 62 individuals (53.4%) in total, with 32 (51.6%) in the intervention group and 30 (48.4%) in the control group. In contrast, those under 50 years old were 54

(46.6%), with 26 (48.1%) in the intervention group and 28 (51.9%) in the control group. Female participants slightly out numbered male participants, with 64 individuals (55.2%) in total, comprising 34 (53.1%) in the intervention group and 30 (46.9%) in the control group.

As for the level of education, the highest representation was in secondary education, with 51 participants (44.0%), followed by college-educated participants at 34 (32.8%). Primary education and advanced degree holders were less common and the distribution across the intervention and control groups remained relatively even for all education levels.

The participants who were employed constituted the largest group, totaling 42(36.2%) individuals, with 26 (61.9%) in the intervention group and 16 (38.1%) in the control group. Business owners were 37 (31.9%), with 22 (59.5%) individuals in the control group. On the other hand, retired and unemployed individuals were fairly evenly distributed across both arms.

Married individual were 84 (72.4%) and there was a near even distribution across the study groups with the control group having 45 (53.6%) individuals, compared to 39 (46.4%) in the intervention group. Single individuals were 8 (6.9%), and they were more prevalent in the intervention group with 6 (75%) individuals.

Comorbidity was observed in 28.4% of the participants, with 18 (54.5%) in the intervention group and 15 (45.5%) in the control group. Conversely 71.6% of the participants were without comorbidities.

Regarding Diabetes Mellitus types, 26.7% had type 1 diabetes totals, 54.8% in the intervention group and 45.2% in the control group. Type 2 diabetes was most common, totaling 71 (61.2%), with 38 (53.5%) in the control group and 33 (46.5%) in the intervention group. Gestational diabetes had 1 case (0.9%), occurring in the control group, and late onset type 1 diabetes totaled 13 (11.2%), with 8 (61.5%) in the intervention group and 5 (38.5%) in the control group.

Finally, the mean number of years with diabetes was 10±7.3 years. In terms of the duration with DM, 50 (43.1%) participants had diabetes for 15 years or less, with 25 (50%) in each arm. Those with diabetes for more than 15 years total 66 (56.9%), with 33 (50%) in each arm. These insights, with reference to counts and percentages, provide an understanding of the distribution of demographic and clinical characteristics within the intervention group and the control groups of the study population.

Table 4.1 shows the descriptive analysis of the sociodemographic characteristics of the participants including; age, gender, level of education, employment status, marital status, comorbidity, type of diabetes mellitus, and duration with diabetes mellitus.

Table 4. 1: Sociodemographic and disease related characteristics of participants

Participant characteristics		Study group		Total
		Intervention	Control	
Age Group (Years)	<50	26(48.1)	28(51.9)	54(46.6)
	>=50	32(51.6)	30(48.4)	62(53.4)
Gender	Male	24(46.2)	28(53.8)	52(44.8)
	Female	34(53.1)	30(46.9)	64(55.2)
Level of education	Primary	7(58.3)	5(41.7)	12(10.3)
	Secondary	23(46.8)	28(53.2)	51(44.0)
	College	21(55.3)	17(44.7)	34(32.8)
	Advanced degree	7(46.7)	8(53.3)	25(12.9)
Employment status	Employed	26(61.9)	16(38.1)	42(36.2)
	Business	15(40.5)	22(59.5)	37(31.9)
	Retired	8(57.1)	6(42.9)	14(12.1)
	Unemployed	9(39.1)	14(60.9)	23(19.8)
Marital status	Married	39(46.4)	45(53.6)	84(72.4)
	Single	6(75)	2(25)	8(6.9)
	Divorced	4(50)	4(50)	8(6.9)
	Widowed	9(56.3)	7(43.8)	16(13.8)
Comorbidity	Yes	18(54.5)	15(45.5)	33(28.4)
	No	40(48.2)	43(51.8)	83(71.6)
DM Type	Type 1	17(54.8)	14(45.2)	31(26.7)
	Type 2	33(46.5)	38(53.5)	71(61.2)
	Gestational	0(0)	1(100)	1(0.9)
	Late onset type 1	8(61.5)	5(38.5)	13(11.2)
Duration with DM	<=15 Years	25(50)	25(50)	50(43.1)
	>15 Years	33(50)	33(50)	66(56.9)

DM – Diabetes Mellitus

4.3 Objective 1: Performance of Foot Self-Care Practices for Prevention of Foot Complications among Patients with Diabetes Mellitus in Western Kenya

Foot self-care practices was assessed by means of the Nottingham Assessment of Functional Foot care (NAFF; Lincoln et al, 2007), a quantitative 26-item self-report measure of the extent to which people comply with recommended foot care practices with a maximum score of 78 and a minimum score of 0. Between arm differences and effect size were assessed. The effect of sociodemographic characteristics, disease related aspects and perceptions of foot care perceptions on foot self-care practices based on the NAFF scores were also assessed.

4.3.1 Foot self-care Practices

Analysis of variance (ANOVA) was conducted to investigate the relationship between foot self- care practices based on NAFF score and various study and participants' characteristics. The study compared the foot care practices in the two different study groups: the intervention group and the control group. In the intervention group, the mean foot care practices score was notably higher at 61.1 (95% CI: 59.5 - 62.8) compared to the control group at 35.7 (95% CI: 34.2 - 37.1). There was a significant difference between the study arms ($F=444.7$, $P<0.001$). The effect size, as measured by the partial eta-squared (Partial Eta2), was substantial at 0.840, emphasizing the impact of the peer support arm on the foot self-care practices therefore the study rejected the null hypothesis.

Among participants aged below 50 years, the mean foot care practices score was 47.4 (95% CI: 45.8 - 48.9) with a marginal difference in foot care practices between the

two groups (F= 3.2, P=0.077, Partial Eta^2= 0.036). Participants aged 50 years or older showed a higher mean score of 50.3, emphasizing the subtle age-related variation.

Examining gender differences, female respondents had an average foot care practices score of 48.0 (95% CI: 46.5 - 49.6) as compared to male respondents showed a slightly higher mean score of 49.5 with marginal statistical difference (F = 3.3, P=0.072, Partial Eta^2=0.036), reflecting the limited gender-based impact on foot care practices.

Further, participants with a primary level of education demonstrated a higher mean foot care practices score of 53.7 (95% CI: 50.5 – 57). There was no significant difference in foot care practices between the level of education (F = 0.2, P= 0.913) with Partial Eta^2 of 0.005. However, participants with secondary education had a mean score of 47.5. Those with college education scored 49.4, and participants with an advanced degree scored 49.6, each demonstrating a step-wise increase in foot care practices scores.

The ANOVA results revealed varying levels differences in foot care practices based on the study arm, age, gender and educational levels, with age and gender having only a marginal effect. The effect sizes, as indicated by Partial Eta^2, provide insights into the magnitude of these differences, contributing to our understanding of the relationships between these variables and foot care practices.

Table 4.2: Distribution of Foot Self-Care Practice Scores

Client aspects		N	Mean	95% CI of Mean	F	P Value	Partial Eta^2
Arm	Intervention	58	61.1	59.5 - 62.8	**444.7**	**<0.001**	**0.840**
	Control group	58	35.7	34.2 - 37.1			
Marital status	Married	84	48.7	46.3 - 49.4	3.0	0.086	0.032
	Single	8	43.6	39.8 - 42.9			
	Divorced	8	41.1	42.3 - 45.6			
	widowed	16	44.0	45.1 - 48.2			
Employment status	Employed	42	45.9	45.1 - 48.2	2.4	0.194	0.003
	Business	37	42.8	41.7 - 45.0			
	Retired	14	41.6	40.9 - 42.7			
	Unemployed	23	43.0	42.4 - 45.7			
Age Group (Years)	<50	54	47.4	45.8 - 48.9	3.2	0.077	0.036
	>=50	62	50.3	48.7 - 51.9			
Gender	Female	64	48.0	46.5 - 49.6	3.3	0.072	0.036
	Male	52	49.5	48 - 51.1			
Level of education	Primary	12	53.7	50.5 - 57	0.2	0.913	0.005
	Secondary	51	47.5	47.3 - 50.1			
	College	38	49.4	45.1 - 49			
	Advanced degree	15	49.6	44.2 - 48.6			

4.3.2 Determinants of Foot Self- Care Practices

In this section a Generalized Linear Model (GLM) was further used to determine predictors of foot care practices. The variables assessed included patient characteristics (sociodemographic characteristics and disease related aspects) and participants' perceptions on foot self-care.

4.3.2.1 Patient Characteristics

While assessing determinants of foot care practices among diabetic patients, a Generalized Linear Model (GLM) was employed to analyze the impact of participants characteristics (sociodemographic characteristics and disease related aspects) on foot self-care practices based on the NAFF Score. The analysis revealed that several factors, including study arm, level of education and employment status were

significant predictors of foot care practices among diabetic patients. However, age group, marital status type of diabetes, duration with diabetes and comorbidity were not statistically significant in determining foot care practices.

Table 4. 3: Participants' Characteristics as Determinants of Foot Self Care Practices

Factor	Parameter	B	SE	95% CI	X^2	P Value
Intercept		14.8	5.7	3.6 – 26.0	6.7	**0.01**
Study Arm	Intervention	26.3	0.9	24.5 - 28.1	836.9	**<0.001**
	Control (Ref)	0[a]				
Age group	>=50	1.8	1.1	-0.4 - 4.1	2.7	0.103
	<50 (Ref)	0[a]				
Sex	Male	1.6	0.9	-0.1 - 3.3	3.3	0.071
	Female (Ref)	0[a]				
Level of education	Advanced degree	5.0	1.8	1.4 - 8.5	7.7	**0.006**
	College	3.3	1.6	0.3 - 6.4	4.5	**0.034**
	Secondary	3.1	1.5	0.2 – 6.0	4.4	**0.036**
	Primary (Ref)	0[a]				
Employment	Employed	5.2	1.9	1.5 - 8.9	7.7	**0.006**
	Business	4.1	1.6	1.1 - 7.2	7.1	**0.008**
	Retired	3.1	1.8	-0.5 - 6.7	2.9	0.088
	Unemployed (Ref)	0[a]				
Marital Status	Married	1.0	1.8	-2.5 - 4.5	0.3	0.567
	Widowed	1.0	2.2	-3.3 - 5.2	0.2	0.649
	Divorced	2.9	2.4	-1.8 - 7.6	1.4	0.232
	Single (Ref)	0[a]				
Comorbidity	No	0.5	1.2	-1.9 - 2.8	0.1	0.703
	Yes (Ref)	0[a]				
DM Duration	>10 years	1.7	1.1	-0.4- 3.9	2.3	0.060
	<10 years (Ref)	0[a]				
DM Type	Type 1	8.8	4.7	-0.4 - 17.9	3.5	0.061
	Type 2	9.9	4.6	0.9 - 18.9	4.7	0.131
	Late onset	7.6	4.6	-1.5 - 16.7	2.7	0.101
	Gestational (Ref)	0[a]				

4.3.2.2 Foot Care Perceptions

A logistic regression analysis was further used to assess foot care perceptions that significantly predict foot care practices based on the NAFF scores. Among the

significant factors, participants who held a positive attitude toward foot care displayed a highly significant influence on foot care practices bases on the total NAFF Score ($p < 0.001$). Additionally, participants who performed self-evaluation their foot care practices also significantly influenced the NAFF scores ($p = 0.007$). Conversely, several factors did not exhibit significant associations with foot care practices. These non-significant factors included participants who expressed that they received adequate information for foot care ($p = 0.442$), participants who stated they had adequate resources for foot care ($p = 0.798$).

Table 4. 4: Foot Care Perceptions as Determinants of Foot self Care Practices

Parameter group			N (%)	B	SE	95% CI	X^2	df	P Value
	Intercept			34	2.1	29.8 - 38.1	258.4	1	<0.001
Foot care perceptions	Has positive attitude towards foot care	Yes	102(58.6%)	10.5	2.7	5.2 - 15.8	15.2	1	**<0.001**
		No	62 (35.6%)	0[a]					
	Foot care related services from hospital	Yes	88(50.5%)	4.5	1.6	1.3 - 7.7	7.4	1	0.066
		No	86(49.5%)	0[a]					
	Adequate information	Yes	124(71.3%)	1.1	1.4	-1.7 - 3.9	0.6	1	0.442
		No	50(28.3%)	0[a]					
	Adequate resources	Yes	100(57.5%)	0.6	2.3	-4 - 5.2	0.1	1	0.798
		No	74(42.5%	0[a]					
	Self-evaluation	Yes	110(63.2%)	4.4	1.6	1.2 - 7.5	7.3	1	**0.007**
		No	64(36.8%)	0[a]					

Dependent Variable: Total NAFF Score
a. Set to zero because this parameter is redundant, reference category.
SE- Standard error
95% CI – for B
X^2 - Wald Chi-square
B - Estimated coefficients for each variable. Impact of each variable on the dependent variable compared to reference category

4.4 Objective 2: Factors Influencing Effectiveness of Peer Support in Performance of Foot Self-Care Practices for Prevention of Foot Complications among Patients with Diabetes Mellitus in Western Kenya

Under this objective, effectiveness of peer support in performance of foot self-care practices for prevention of foot complications among patients with diabetes mellitus was evaluated by examining how the intervention was influenced by a set of predictor variables. These variables were categorized into several groups, including sociodemographic characteristics, personal commitment and similarity in characteristics among peer mentors and mentees. Linear regression model was utilized to assess the impact of these variables on the effectiveness of peer support intervention. The focus here was on assessing the impact of each predictor variable while considering its potential influence on effectiveness of peer support. The key components in understanding these effects were zero-order, partial, and part correlation coefficients. The zero-order coefficients represented the direct relationship between each predictor variable and foot self-care practices based on the NAFF scores. They indicate the initial, unadjusted impact of each variable on the outcome without considering the influence of other variables. These coefficients provide a baseline understanding of how each predictor is related to foot self-care practices based on the NAFF score. Partial regression coefficients accounted for the influence of other variables thus revealing the impact of a peer support on foot self-care practices while controlling for the effects of other predictors in the model. This is essential because it helped identify the unique contribution of each predictor to the effectiveness of the peer support intervention thus providing a more nuanced understanding of the relationships. Part regression coefficients showed the proportion

of variance in foot self-care practices based on the NAFF scores that is uniquely explained by peer support. They provide insight into the relative importance of each predictor in determining foot self-care practices based on the NAFF scores. These coefficients allow for a deeper understanding of the specific contributions of each variable to the outcome.

By examining and interpreting these different types of regression coefficients, the sociodemographic characteristics, personal commitments and peer mentor characteristics that significantly influenced the effectiveness of peer support in performance of foot self-care practices for prevention of foot complications among patients with diabetes mellitus were identified.

4.4.1 Effect of Participant Characteristics on effectiveness of Peer Support on Foot Self-care Practices for Prevention of Foot Complications among Patients with Diabetes Mellitus in Western Kenya

A linear regression model was used to analyze how various participant characteristics (Sociodemographic and disease related aspects) influenced the effectiveness of peer support in performance of foot self-care practices preventing diabetic foot complications. The linear regression model used to analyze this relationship had an R-squared value of 0.893, indicating that approximately 89.3% of the variance in the dependent variable, the foot care practices, is explained by the predictor variables. The ANOVA table shows that the regression model is statistically significant ($F = 71.8$, $p < 0.001$). This indicates that at least one of the predictor variables significantly contributes to the variation in the NAFF Score, making the model suitable for further analysis.

The study arm (B:25.7; 95% CI: 23.9 - 27.5; β: 0.9; t:27.8; $P < 0.001$) with correlation coefficients between study arm and NAFF score reducing from Zero-order (R^0 =

0.930), to Partial (R^1 =0.939) to Part (R^2 = 0.896) thus showing that peer support has a strong positive influence on the foot care practices based on NAFF Score. Peer support significantly increases foot care practices though its correlation is slightly influenced by individual characteristics of the participants.

Individual characteristics like; age, gender, level of education, employment status, marital status, comorbidity, diabetes type, and diabetes duration had weak to very weak (r between 0.01-0.3) non-significant (P>0.05) correlation with foot care practices based on the NAFF score, where: correlation ≈ 0: very weak or no correlation, ≥ 0.1 to < 0.3: weak correlation, ≥0.3 to < 0.5: moderate correlation, ≥0.5 to < 0.7 strong correlation, and ≥ 0.7 ≤ to < 1: very strong correlation.

Table 4.5 provides insights into the influence of various sociodemographic characteristics on the effectiveness of peer support strategy on diabetes foot care practices.

Table 4. 5: Effect of Participants' Characteristics on Peer Support

							Correlations				
Parameter	**B**	**SE**	**95% CI**	**β**	**t**	**P[1]**	***R[0]***	***R[1]***	***R[2]***	**P[2]**	**CoV**
(Constant)	16.3	5.4	5.6 - 27		3.0	0.003					
Study arm	25.7	0.9	23.9 - 27.6	0.9	27.8	**<0.001**	0.930	0.939	0.896	**<0.001**	0.856

Age Group	1.6	1.1	-0.6 - 3.7	0.1	1.4	0.159	0.071	0.138	0.046	0.356	-0.003
Client Sex	1.5	0.9	-0.3 - 3.3	0.1	1.6	0.11	-0.028	0.157	0.052	0.230	0.048
Education	1.1	0.6	0.0 - 2.2	0.1	2.0	**0.048**	0.057	0.194	0.064	0.500	-0.001
Employment	1.0	0.4	0.2 - 1.9	0.1	2.5	**0.013**	0.235	0.243	0.082	0.077	-0.050
Marital Status	0.1	0.5	-1.0 - 1.1	0.0	0.1	0.921	-0.129	0.010	0.003	0.075	0.054
Comorbidity	0.8	1.3	-1.7 - 3.3	0.0	0.6	0.525	-0.070	0.063	0.021	0.271	0.053
Diabetes Type	0.6	0.6	-0.6 - 1.9	0.0	1.0	0.315	0.073	0.099	0.033	0.315	-0.022
Diabetes Duration	1.1	1.0	-0.8 - 3.0	0.0	1.1	0.265	0.035	0.110	0.036	0.500	0.015

Dependent Variable is the total NAFF score
B- unstandardized coefficient showing gradient and direction of slope in scatter plot
β – Beta coefficient – Standardized coefficient of change in dependent variable per unit change in predictor variable
SE - Standard error
95% CI - confidence interval for B
R^0- Zero-order correlation coefficients. Unadjusted correlation
R^1 - Partial correlation. Correlation when adjusting for potential confounding variables
R^2 - Part correlation. Correlation when holding other predictors constant
CoV – Covariance of other predictors with study arm
P^1 – P value for linear regression analysis
P^2 P value for zero-order correlation coefficients

4.4.2 Influence of Program Factors on Effectiveness of Peer Support on Foot Self-Care Practices for Prevention of Foot Complications among Patients with Diabetes Mellitus in Western Kenya

Table 4.6 shows the variables that were referred to as program factors in this model and they included: rating of attitude towards foot-care among diabetes patients; level of satisfaction with peer support program; received informational support; received emotional support; received instrumental support; received appraisal support; personal commitment, peer mentor similarity and awareness of diabetes mellitus foot-care guidelines.

Model statistics as shown by R^2 (0.882) which indicates that approximately 88.2% of the variance in the dependent variable (Total NAFF Score) can be explained by the predictor variables in the model and the results of the ANOVA show that the regression model, which includes all the specified predictor variables, is statistically

significant (F=46.1; P<0.001), thus implying that the model is effective in explaining a significant portion of the variance in the foot care practices.

The study arm (B:31.3; 95% CI: 23.5 - 63.4; β: 1.1; t:4.3; P < 0.001) with correlation coefficients between study arm and foot care practices based on the NAFF score reducing from Zero-order (R^0 = 0.930), to Partial (R^1 =0.442) to Part (R^2 = 0.170) thus showing that peer support has a strong positive influence on foot care practices. Peer support significantly increases foot care practices. The study arms' effect on foot care practices is highly influenced by these aspects shown by the marked reduction in its correlation with NAFF score and the significant P values for the correlations (P<0.05).

The other aspects can be regrouped into: perceptions aspects, peer mentor support strategies and peer mentor characteristics. Perceptions aspects include:Having a positive attitude towards footcare, personal commitments affect peer support outcomes and satisfaction with peer support program. Peer mentor support strategies include; Received Informational Support, received emotional support, received instrumental support and received appraisal support. Peer mentor Characteristics include; Peer mentor similarity affects mentorship outcomes.

Table 4.6: Influence of Program Factors on Effectiveness of Peer Support on Foot Self-care Practices for Prevention of Foot Complications

Parameter	B	SE	95% CI	β	t	P[1]	Correlations				CoV
							R^0	R^1	R^2	P[2]	

(Constant)	43.4	10.1	23.5 - 63.4		4.3	**<0.001**					
Study arm	31.3	6.4	18.7 - 44	1.1	4.9	**<0.001**	0.930	0.442	0.170	**<0.001**	
Attitude towards foot-care	-0.6	0.9	-2.3 - 1.1	-0.1	-0.7	0.488	0.843	-0.07	-0.024	**<0.001**	-2.548
Satisfied with peer support program	0.0	1.4	-2.7 - 2.7	0.0	0.0	0.976	0.813	0.003	0.001	**<0.001**	-3.022
Informational Support	1.3	0.6	0.1 - 2.6	0.1	2.1	**0.040**	0.702	0.204	0.072	**<0.001**	-0.666
Emotional support	-0.2	0.6	-1.4 - 1	0.0	-0.3	0.933	0.228	-0.034	-0.012	**<0.001**	-0.739
Instrumental support	0.1	0.7	-1.4 - 1.5	0.0	0.1	**0.034**	0.786	0.008	0.003	**<0.001**	-0.638
Appraisal support	1.2	0.7	-0.2 - 2.6	0.1	1.7	**0.008**	0.805	0.165	0.058	**<0.001**	-0.544
Personal commitment	-1.0	0.7	-2.3 - 0.3	-0.1	-1.5	0.129	0.698	-0.152	-0.053	**<0.001**	-1.012
Mentor/mentor similarity affects outcome	-0.5	0.8	-2.2 - 1.1	-0.1	-0.7	0.511	0.786	-0.066	-0.023	**<0.001**	-2.308
DM foot-care guidelines	-0.7	0.8	-2.2 - 0.8	-0.1	-0.9	0.355	0.807	-0.093	-0.032	**<0.001**	-2.223

Dependent Variable is the total NAFF score

B- unstandardized coefficient showing gradient and direction of slope in scatter plot

β – Beta coefficient – Standardized coefficient of change in dependent variable per unit change in predictor variable

SE - Standard error

95% CI - confidence interval for B

R^0- Zero-order correlation coefficients. Unadjusted correlation

R^1 - Partial correlation. Correlation when adjusting for potential confounding variables

R^2 - Part correlation. Correlation when holding other predictors constant

CoV – Covariance of other predictors with study arm

P^1 – P value for linear regression analysis

P^2 P value for zero-order correlation coefficients

4.5 Objective 3: Outcome of Peer Support Strategies on Foot Self-Care Practices for Prevention of Foot Complications among Patients with Diabetes Mellitus in Western Kenya

The focus group discussions (FGDs) conducted as part of this study shed light on the experiences and perceptions of diabetic patients engaged in peer support groups. From the patients' experiences, the thematic areas that emerged could be grouped into individual attitudes of participants towards foot care, receiving informational support, receiving emotional support, receiving instrumental support, and receiving appraisal support. This diverse set of topics allowed for a comprehensive exploration of the multifaceted nature of peer support in foot self- care among diabetic patients.

To ensure accuracy and preserve the authenticity of the participants' voices, the FGD sessions were meticulously transcribed, converting spoken dialogues into written text. This transcription process was a crucial step in the research, as it enabled the researcher to analyze and interpret the rich data generated during the discussions.

Thematic analysis was subsequently employed to uncover recurring themes, patterns, and insights within the transcribed data. This analytical approach allowed the researcher to identify common threads and unique perspectives shared by participants across the different thematic areas. Through thematic analysis, researcher aimed to gain a deeper understanding of how individual's attitudes contributes to foot care, the outcome of various forms of support shared between the peers, and the overall influence of peer support on the performance of foot self-care practices.

This section presents the findings of the thematic analysis, providing insights into the attitudes, experiences, and perceptions of diabetic patients regarding foot self-care practices and the invaluable support they received from their peers. This exploration contributed to development of a proposed practice model for peer support in diabetic foot self- care practices and further provides a means of evaluating the model to gauge its effectiveness in promoting foot care thus preventing foot complications among diabetic patients.

4.5.1 Attitude towards Foot Care

The theme of "Attitude" emerged as a central and pivotal aspect of the participants' experiences and perceptions. The participants' attitudes towards foot care played a crucial role in shaping their behaviors and decisions related to foot self care management. Here, we explore the sub-themes within the "Attitude" proposition.

4.5.1.1 Perceptions of Regularity of Foot Inspection

Regularity in foot inspection emerged as a pivotal theme, with many participants deeming it essential and integrating it as a daily activities to preempt risks. One individual stressed, *"I think regular foot inspection is very important. I do it daily. I don't want to take any chances with my feet."*(FGD 12).

Commitment methods varied, with another sharing, *"I set alarms to remind me. It's become a habit now. I don't want to risk complications."* (FGD 18)

However, attitudes toward regularity displayed a spectrum. While some were consistent, others occasionally lapsed due to various factors. One participant admitted, *"I try my best, but there are days when I forget, especially when life gets busy. It's not always easy."*(FGD 3) Echoing this sentiment, another shared, *"Yeah, I can relate to that. Sometimes, I get lazy or distracted, and I skip a day or two."*(FGD 4)

Mechanisms to bolster consistency varied: some leveraged alarms or peer support, while others were galvanized by prior foot complications. One remarked, *"I think peer support has helped me stay consistent. Knowing others are doing it too makes me feel like I also need to be doing it."*(FGD 23)The feedback paints a nuanced picture of the participants' commitment to regular foot inspection and the strategies they deploy.

The role of peer support group in fostering regularity of foot inspection also emerged with numerous participants emphasizing their positive impact on effective foot care. Peer mentors not only offered guidance but also ingrained foot care habits in some. One individual shared, *"Well, I've learned a lot from other people in this group. There is always a constant reminder to check our feet"*(FGD 32)

However, balancing foot care with other life responsibilities presented challenges. Some participants admitted to grappling with these demands, while others stressed the necessity of elevating foot care in their priority list. One participant noted, *"I struggle sometimes. It's not easy to manage everything, but I try my best"* (FGD 12). Echoing the challenge, another said, *"Managing foot care is a challenge for me too. It's like a constant battle."* (FGD 30)Yet, the importance of prioritizing foot care was clear, with one stating, *"I think it's all about priorities. You have to make it a priority in your life and make sure you perform it daily"*(FGD9)

*A*midst these challenges, the adoption of regular routines and a sense of empowerment became vital strategies for effective foot care. Establishing consistent routines and drawing empowerment from effective foot care practices emerged as key to navigating these hurdles.

4.5.1.2 Feelings about Investing time and Effort in Preventive Foot Care

The inherent value of preventive foot care resonated deeply with participants, who unanimously viewed it as vital for maintaining holistic health and evading complications. One participant reflected, *"Being in this group reminds us that it's worth every second and effort. Learning about the experiences of others motivates us. Preventive care can save us from a lot of pain and complications."* (FGD 13) While recognizing its significance, another said, *"It's not always easy, but when I think about the consequences of neglecting it, I know it's necessary."*(FGD 14)

Yet, this realization wasn't always present. Some participants confessed to previously overlooking foot care but now perceive it as integral to their well-being. A participant admitted, *"I used to neglect it, but being in this group has helped me to realize the importance of investing time. It's an investment in my health."* (FGD 29)The transformative power of peer support in reshaping these perceptions was evident.

Despite the consensus on foot care's importance, participants did confess the challenges of consistently prioritizing it amidst other life responsibilities, highlighting the ongoing struggle between understanding its significance and everyday practicality.

4.5.1.3 Motivation to adhere to Recommended Foot Care Practices

Various sources of motivation emerged from participants' narratives, ranging from personal connections to broader life aspirations. Family stood out for some, with one individual sharing, *"My family… I want to be there for them, so I follow my foot care plan we set in the groups diligently."*(FGD 18)Peer support was another influential factor, with one participant noting, *"Peer support plays a significant role. Seeing others committed to it motivates me."*(FGD 13)

The aspect of control in the midst of diabetes complexities was emphasized by many. A sense of empowerment through dedicated foot care was evident, with one individual observing, *"Diabetes can be overwhelming, but focusing on foot care gives me a sense of control. Seeing that I am able to do it well tells me that this disease is manageable"*(FGD 22). The role of peer mentors in this empowerment journey was highlighted, with another sharing, *"Peer mentors have been a game-changer for my motivation. We motivate each other."*(FGD 31)

Looking towards a brighter, complication-free future was a driving force for some. The power of visualization came forth as a tool to stay committed to proactive foot care and to envisage a healthier future without the burdens of foot-related complications.

4.5.1.4 Consequences of Neglecting Diabetic Foot Care

The dire repercussions of neglecting diabetic foot care were deeply ingrained in participants' perspectives, with many highlighting a spectrum of outcomes including ulcers, infections, and even amputations. One participant expressed, *"Neglecting foot care can lead to ulcers and infections that can be so painful and ugly. Members have shared the stories of others and I don't want to experience that"*(FGD 14)The gravity of amputation as a potential consequence resonated deeply, with another sharing, *"I've seen friends struggle with amputations, and it's a life-changing experience. That's enough to keep me on track."*(FGD 37)

Yet, beyond the tangible physical implications, participants were acutely aware of the emotional ramifications both for themselves and their loved ones. A participant remarked, *"It's not just physical consequences; there are emotional ones too. It can be*

mentally distressing"(FGD 22). This sentiment was echoed by another who emphasized the ripple effect, noting, *"It's not just about us. Our loved ones suffer when we neglect our foot care"*(FGD 23)

The instrumental role of peer support in shedding light on these profound consequences was highlighted, underscoring its value in educating and raising awareness about the holistic impact of foot care negligence.

4.5.2 Informational Support

This theme highlighted the vital role of peer support in providing valuable information and guidance to diabetic patients. The FGD transcripts reveal several key sub-themes related to the informational support provided by peer mentors for diabetic foot care. These sub- themes include:

4.5.2.1 Clarity and Understandability of Information:

Effective communication is key of successful peer support, as echoed by participants. They lauded the clarity and comprehensibility of the information provided in the peer support groups. Specifically, the use of straightforward language and the breakdown of intricate concepts emerged as key strengths. One participant appreciated this approach, noting, *"My peer mentor uses simple language and helps us to understand those difficult medical terms."* (FGD 1)Beyond just clear communication, mentors' patience played a crucial role. As another participant mentioned, *"My mentor always encourages me to ask questions and doesn't mind explaining things many times"*(FGD 28) The combination of clear language, relatable examples, and a patient, iterative approach underscores the effectiveness of communication within this peer support framework. This not only facilitates understanding but also empowers participants in their journey of managing their conditions.

4.5.2.2 Improvement in Knowledge

The peer support program has proven instrumental in bolstering participants' understanding of diabetic foot care. Participants conveyed a marked enhancement in their grasp of essential facets, ranging from recognizing risk factors to the nuances of wound care and the selection of appropriate footwear. One participant reflected on the newfound knowledge, stating, *"My mentor explained the different risk factors and complications associated with diabetic foot care, which I had no idea about before. I did not know that not drying my feet properly can lead to a complication"*(FGD 16). Another participant delved into the practical skills imparted, sharing, *"I've learned about the importance taking care when cutting my toe nails. I should concentrate to avoid cuts"* (FGD 19). These testimonials accentuate the profound educational impact of peer mentorship, illuminating its role in not only disseminating critical knowledge but also in fostering informed and proactive approaches to diabetic foot self- care practices.

4.5.2.3 Increased Confidence

Peer support has had a transformative impact on participants' self-assurance in handling their diabetic foot care. Their testimonials point to a newfound confidence, stemming not just from the acquisition of knowledge but also from the realization that they have a reliable figure to lean on for guidance. As one participant recounted, *"My mentor's guidance and support made me feel less anxious about potential complications"* (FGD 2). This sentiment of empowerment was echoed by another, who shared, *"Now, I know what steps to take, and that knowledge has boosted my confidence"*(FGD 24). The consistent theme emerging is that, beyond the tangible advice and techniques, the emotional and motivational support offered in the peer support groups plays a pivotal role. This support not only equips participants with the

tools they need but also fosters a renewed sense of agency and control over their health.

4.5.2.4 Sufficiency of Informational Support:

The feedback from participants indicated a largely positive reception to the peer support program, with many finding the information received adequate for their diabetic foot care needs. For instance, one participant felt reassured, sharing, *"My mentor is always available to answer questions and provide guidance"* (FGD 13)However, a recurring suggestion that emerged was the integration of supplementary materials into the program. As one participant articulated, *"I think it's sufficient, but sometimes I wish there something like notes I could refer to..."*(FGD 25). This sentiment underscores the potential for enhancing the program's efficacy by providing participants with tangible written resources. Such materials could act as a valuable reference, particularly during moments when direct mentor interaction is not feasible, ensuring that the participants always have reliable information at their fingertips.

4.5.2.5 Recommendation of the program to others:

The peer support program garnered resounding endorsement from participants, all of whom were eager to recommend it to fellow diabetic patients. Central to this enthusiasm was the dual role played by the mentors: they functioned as both empathetic companions who genuinely understood the challenges faced by those with diabetes and as knowledgeable guides who could dispense practical advice. One participant keenly noted, *"Having a peer mentor who understands what you're going through and can provide practical advice and support is a really great feeling"* (FGD 31). Further emphasizing the blend of camaraderie and expertise, another participant

likened the mentor to *"a friend who's also an expert in diabetic foot care"*(FGD 22)The collective feedback underscores the unique and powerful impact of the mentorship program, highlighting its blend of emotional understanding with actionable guidance.

4.5.3 Emotional Support

This theme highlighted the emotional connections and the role of peer support in providing empathy, understanding, and encouragement to diabetic patients. Here, the sub-themes within the Emotional support are explored.

4.5.3.1 Frequency of Emotional Support:

Most participants benefit from regular emotional support from their mentors, with frequencies varying from daily to monthly. One shared, *"I communicate with my mentor almost every other day"* (FGD 26), while another mentioned, *"I connect with my mentor and other members of the group once a week"*(FGD 12). Regardless of the regularity being structured or spontaneous, it instills a sense of solace. A participant noted, *"It's more spontaneous for me... sometimes several times a week, other times just once a week"* (FGD 11) Another echoed, *"I don't have a fixed schedule, but knowing I can reach out anytime is comforting"*(FGD 17). The consistency underscores the comfort and reliability mentors provide in emotional support.

4.5.3.2 Modes of Emotional Support:

Shared personal stories resonate with participants, providing solace through common challenges. As one participant expressed, *"Personal stories are a big thing. Knowing someone else has faced the same challenges is reassuring"*(FGD 13). Digital interactions, including video calls and sharing resources, enable deeper connections. One individual highlighted, *"We use video calls for our discussions. It feels more personal"*(FGD 21). Direct face-to-face interactions emphasize mutual emotional

connections, with another sharing, *"Face-to-face discussions are what works best for me. It's about sharing our journey"*(FGD 31). These feedback underline the diverse avenues of support and their significance in bolstering connections and well-being.

4.5.3.3 Improved Coping:

Peer support serves as a solace during challenging periods, alleviating feelings of isolation and stress. One participant confirmed, *"Absolutely! That understanding and shared experience make the journey less lonely"*(FGD 14).This support reassures participants they aren't navigating their diabetic journey alone, as another noted, *" Peer support has reduced the anxiety I used to feel around managing my diabetes"*(FGD 27). Providing a figurative safety net, the emotional backing reshapes how individuals handle diabetes-related emotional hurdles. These sentiments underscore the transformative role of mentor support in enhancing emotional well-being.

4.5.3.4 Enhanced Emotional Resilience:

Participants credit the peer support program for making them emotionally resilient and prepared to tackle challenges. One individual reflected, *"This group has given me the strength to face challenges and not be defeated easily. Others are doing it, why not me…."*(FGD 23). Moreover, mentors provide coping strategies that fortify emotional stability, as another participant noted, *"With the coping strategies shared within the group, I've grown emotionally stronger"*(FGD 29).The emotional trials accompanying diabetes become surmountable with the foundational tools provided by mentors. These sentiments highlight the empowering and transformative impact of peer support on emotional strength.

4.5.3.5 Authenticity of Emotional Support:

Peer support is celebrated for its authenticity, rooted in shared experiences and profound empathy. One participant remarked, *"There's a realness to the support. It's not just a routine; it comes from the heart"*(FGD 14). This genuine empathy differentiates the mentorship, as another shared, *"That deep empathy makes the difference. It's comforting to know it's genuine"*(FGD 30). The genuine nature of the relationship is a standout quality, emphasizing its depth beyond mere words. A participant noted, *"The relationship I share with the group is geneuine and real. Here everyone just really wants you not to have bad health"*(FGD 17).

Peer support offers more than just guidance; it nurtures a deep emotional connection rooted in mutual comprehension and shared experiences. One participant reflected, *"It's more than just advice; it's a deep bond that's been formed"*(FGD 14*).* This support ensures participants feel recognized, listened to, and cherished. Another shared, *"The sense of being heard and valued is tremendous"* (FGD 19). The bond transcends mere recommendations or tangible care and delves into emotional recognition and collective resilience. These reflections underscore the invaluable genuine connection between mentors and mentees illuminating the depth and richness of the mentor-mentee relationship.

4.5.4 Instrumental Support

Instrumental Support was one of themes that emerged during the FGDs on peer support intervention for performance of foot self-care practices. This theme highlighted the tangible aid and practical assistance provided in the peer support group to diabetic patients, contributing to their ability to manage foot care effectively. The sub-themes that emerged are reported below.

4.5.4.1 Frequency of Instrumental Support from Peer Mentor

Participants experience differing frequencies of instrumental support, suggesting its customization based on personal preferences and timetables. Some benefit from regular sessions, while others have more spontaneous support. One participant shared, *" I receive support from my peer mentor about once a week. We usually meet up on Saturdays to discuss foot care routines"*(FGD 11). Contrasting this, another mentioned, *"I have a bit of a different experience. My mentor is available whenever I need them, so it's on-demand support but a week rarely goes by before we communicate"*(FGD 10). For some, proximity facilitates daily interactions, as another participant noted, *"I receive support from my mentor every day because we live in the same neighborhood, so it's easy to connect"*(FGD 32). These testimonies underscore the adaptive nature of peer support, catering to individual needs and situations.

4.5.4.2 Types of Instrumental Support in the Peer Support Groups

Participants highlighted a wide array of instrumental support they receive, spanning from footwear recommendations and exercise guidance to wound care, medication management, and even navigating insurance. This underlines the holistic nature of the support. One participant detailed, *"My peer mentor helps me with choosing the right footwear. They've even accompanied me to the store to make sure I get the recommended shoes for my condition"*(FGD 21). Financial aspects are also covered, as another participant remarked, *"My mentor works with an insurance firm and I receive a lot of support in understanding and managing my insurance and healthcare costs"*(FGD 19). These varied experiences underscore the multifaceted and comprehensive support provided by peer mentors.

4.5.4.3 Practical and Helpful

Participants consistently find the support both practical and beneficial, observing enhancements in foot comfort, pain management, stress alleviation, medication consistency, and overall wellness. While some acknowledged initial hurdles, they appreciated the enduring advantages. One participant stated, *"I agree. The foot massages and exercises suggested in the peer support group have helped me manage pain and improve circulation"*(FGD 18). Another emphasized the practicality of dietary guidance, noting, *"The meal planning assistance has practical implications for my health, and it's made healthy eating more manageable"*(FGD 30) This personalized touch makes the support especially valuable, as another participant remarked, *"The support feels like it is just for me because in the group we considers unique challenges someone may have then give the right advise"*(FGD 23). These insights underscore the tangible and tailored benefits derived from peer support.

4.5.4.4 Reliable Instrumental Support from Peer Mentors

Trust and dependability characterize the relationship within peer support programs, with many highlighting their mentors' consistent availability and prompt response. A sense of security emerges from knowing that dependable support is always within reach. One individual commented, *"I've found my mentor to be quite reliable. They've never let me down when I needed assistance"*(FGD 29). This reliability translates into reduced stress for some, as echoed by another, *"The fact that my group members are so reliable has lessened my anxiety. I don't feel like I'm managing my diabetes on my own"*(FGD 36). Dedication of mentors was also evident even amidst busy schedules, with one noting, *"Even when they are very busy, my mentor ensures they're there for me when I require assistance"*(FGD 14). The feedback underscores the unwavering dedication and reliability of the support provided.

4.5.4.5 Increased Confidence

Increased confidence and empowerment in diabetes and foot care management stand out in participants' experiences, with many attributing their advancements to the instrumental support. A newfound sense of control and proactive management emerges. One individual shared, *"I've learned so much from the program that I now feel more confident in taking care of my feet"*(FGD 37) .The tangible benefits of the support are evident, as another mentioned, *"I am so comfortable now thanks to the right shoes and care"*(FGD 33). The comprehensive nature of the support becomes clear with another remarking, *"The support has helped me with the knowledge and skills to manage foot care effectively"* (FGD 36). These testimonials spotlight the transformative power of support in bolstering confidence and proactive care.

4.5.5 Appraisal Support

The topic of appraisal support also emerged as a major theme. Thematic analysis of the FGD reveals several key sub-themes and findings as reported below.

4.5.5.1Helpful Support

Most participants value the constructive nature of the appraisal support they receive. One participant said, *"Overall, I do find the support from my peer mentor to be constructive. She offers practical advice and shares her experiences, which I find beneficial"*(FGD 11). This constructive feedback is crucial in aiding participants to refine their routines and enhance diabetes management, as another noted, *"The feedback I get from the group is usually quite constructive, and it helps me make improvements in my daily routines"*(FGD 38). The consensus highlights the positive impact of helpful feedback.

The value of open communication with mentors to ensure tailored support was emphasized. One shared, *"It made me feel discouraged, but I talked to her about it,*

and she adjusted her approach"(FGD 12). This open dialogue allows for better alignment of support, with another participant considering, *"I haven't yet, but I think it's a good idea. I'll talk to my mentor about it"*(FGD 13). The feedback underscores the significance of discussing needs and preferences in peer support.

4.5.5.2 Positive Influence on Diabetes Management:

It was unanimously agreed that appraisal support enhances their diabetic foot care management. One testified, *"Taking into account the feedback from my peer mentor has helped me improve my foot care routines"(*FGD 34). They cite specific benefits, like better foot care routines, exercise habits, and medication adherence. Another participant shared, *"I've lost some weight and improved my diet significantly with the help of my group members. It's boosted my self-esteem"*(FGD 9). The feedback illuminates the positive impact of peer support on diabetic care.

Positive reinforcement plays a key role in this uplifted mindset, with another noting, *"When I receive positive feedback and recognition for my efforts, it makes me more determined to continue managing my diabetes well"*(FGD 7). The feedback emphasizes the transformative power of encouragement and recognition in diabetes management.

4.5.5.3 Accuracy of Feedback:

Feedback from peer mentors is widely perceived as precise and mirroring participants' efforts. One participant remarked, *"My mentor noticed a change in the condition of my feet that I hadn't paid attention to. Thanks to her keen eye, I was able to address the issue before it became more serious"*(FGD 2). This accurate feedback facilitates timely interventions and improved care, as another shared, *"My mentor helped me identify patterns in my blood sugar levels, which allowed me to adjust my medication*

and diet for better control"(FGD 13). The testimonials underscore the value of observant and accurate peer support in diabetes management.

Participants convey a heightened sense of achievement and pride due to their mentors' backing. One individual mentioned, *"Achieving small milestones feels more significant with their encouragement"*(FGD 18).Specific achievements, like consistent medication use and weight reduction, stand out. Another participant shared, *"I used to struggle with keeping up with my medication, but with my mentor's guidance, I've been consistent for six months now, and I'm really proud of that"* (FGD 22). These sentiments underline the empowering impact of mentor support on personal accomplishments in diabetes management.

4.5.5.4 Integral Part of Diabetes Management:

Participants unanimously regard appraisal support from peer mentors as crucial to their diabetes management. One participant emphasized, *"It's become an important part of my diabetes management. The constant reminders are important"*(FGD 14). Peer mentors are seen not just as advisors but as essential pillars of support. Another shared, *"The support from my mentor is a big part of my life. I wish I had it earlier"*(FGD 19). These sentiments highlight the invaluable role of mentors in bolstering diabetes care and management.

4.5.6.1 Peer Support Strategies Employed by Health Care Providers

Key informant interviews were also conducted to analyze peer support strategies for foot care practices in the prevention of diabetic foot complications amongst patients in Western Kenya. The health care providers in the diabetes clinics were the key informants. The interviews were conducted in all study sites. All interviews were recorded by an MP4 recorder device with the participants' consent. The interviews were listened to and transcribed verbatim. The was read several times to achieve

immersion and obtain understanding of the experiences. The text was then broken to meaning units, including words, sentences, or paragraphs, and significant aspects related to the participants' experiences were highlighted. The strategies that formed the main themes in this study included informational support, emotional support, instrumental support and appraisal support. Framework analysis was used to uncover sub themes, patterns and insights within the transcribed data.

4.5.6.2 Distribution per Carder of Health Care Providers

Health care providers within the diabetic clinics included consultant physicians, registered medical officers, nurses, clinical officers and pharmacists. Majority of health care providers at the diabetes clinics were nurses at 19 (44.1%) individuals with the least being pharmacists at 3(7%) individuals. Their distribution per study site is outlined in table 4.7

Table 4.7: Distribution of Healthcare Providers per Study Site

Health care provider characteristic		Intervention group	Control group	Total
Cadre of Health care provider	Consultant doctor	3	1	4(10.8%)
	General doctor	2	1	3(8.2%)
	Nurse	11	8	19(51.4%)
	Clinical officer	5	3	8(21.6%)
	Pharmacist	1	2	3 (8.2%)
	Total	**22**	**15**	**37**

4.5.6.3 Informational Support

This form of support offers ideas, counselling, opinions and suggestions that patients can use to understand and solve their problems.

4.5.6.3.1 Structured Guidelines

Ministry of Health guidelines and protocols formed the main source of material for providing information to diabetes patients. One informant remarked *"There is information everywhere, you can see this one on how to manage feet for a diabetic patient. They are always on the walls"* (KI3)Healthcare providers however underscored the challenges in using the structured guidelines as the main source of information on foot care with one stating *"We don't even have time to take the patients through this guidelines, they (the patients) just look at the guidelines and if they have questions they ask. It is hard to know whether they understand or not"* while another respondent said *"It takes years for new guidelines to come, since I was employed this is the only one (guideline) I have seen yet many things have changed"* (KI 9)

4.5.6.3.2 Tailored informational Support

Key informants consistently conveyed the challenges they experienced in providing information tailored to specific patients with one stating *"We have over two hundred patients in the consultant clinics, just look at this number……..is it really possible to sit down with each and every patient to assess their individual needs and tailor responses towards them?"* Yet another reported *"We teach them all together. We have health education every day, if patients come late to the clinic they will miss this session but I am glad a majority of them come very early"* (KI 6)

4.5.6.4 Emotional Support

This form of support encompasses endowment of understanding, compassion, affection, resilience, empathy and consideration.

4.5.6.4.1 Availability of Emotional Support

Health care providers reported that there is no structured framework for providing emotional support. They however noted that this form of support was crucial for the overall well-being of the patient. One respondent said "We rarely offer that kind of support but when we notice a patient is overwhelmed we refer them to the counsellor if (the counsellor) they are available" (KI 11).

4.5.6.4.2 Challenges of Offering Emotional Support

Healthcare providers also expressed challenges in providing this from of support with one stating *"Some patients may even call you late in the night, this can be quite inconveniencing*" (KI 8) emphasizing the challenges experienced when delivering this form of support.

4.5.6.5 Instrumental Support

This theme highlighted tangible and concrete support given to patients to assist them on their day to day management of diabetes and prevention of associated complications.

4.5.6.5.1 Forms of Instrumental Support

Health care providers highlighted the importance of instrumental support with one stating *"Diabetes requires one to acquire skills in their daily management, for example, we show them how to hold the needle and inject insulin"* with another remarking *" the kind of aid we offer is limited to medical advice, we can only tell the*

patient the right foods to eat but we cannot escort them to the markets or give them referrals of where to buy that is their choice" (KI 5)

4.5.6.5.2 Transportation Assistance and Access

Healthcare providers expressed particular challenge for patients in accessing the hospital especially for those who came from different counties. One responded commented, *"Most of our patients find coming to hospital for medical check-up every month quite expensive so we encourage them to team up and share a common transport. This option is cheaper*" Another one stated *"Sometimes we link them up with community resources or volunteers to ensure patients have reliable transportation options"* (KI 12).

4.5.6.6 Appraisal Support

This form of support encompasses constructive criticism affirmation and confirmation.

4.5.6.6.1 Positive Reinforcement:

Healthcare providers consistently recognize patients' efforts and progress. One stated "It is always important to pat them on the back when they make progress because it is not easy…. though sometimes we may forget. Patients are so many" (KI 17)

4.5.6.6.2 Acknowledgment of Challenges:

Providers empathetically acknowledge the challenges patients face but underscored the importance of encouraging the patients with one healthcare provider commenting, *"We understand that managing diabetes can be tough, so when they have setbacks we tell them it is okay; what matters is their overall progress"* (KI 10).

4.5.6.6.3 Goal Setting and Encouragement:

Health care providers collaborate with patients to set realistic goals. One participant said they encourage their patients by saying, *"Let's work together to achieve your target weight"* or *"You're on the right track; keep it up, inspecting your feet daily is the right way to go!"* (KI 2).

4.6 Objective 4: Proposed Peer Support Framework for Foot Self-care Practices

Focused group discussions were done on peer support strategies for foot care among diabetic patients. The discussions were thematically analyzed and reorganized into what have become the propositions of the peer support model for foot care among diabetic patients. The propositions in the model are; Individual attitude towards foot care among diabetic patients, Informational Support Received, Emotional Support Received, Instrumental Support Received, and Appraisal support received.

4.6.1 Meta-Proposition 1: Attitude towards Foot Care

In this meta-proposition, the focus is on understanding the attitudes and perceptions of diabetic patients regarding their foot care. The following sub-themes were identified:

1. Perceptions of Regularity of Foot Inspection:

Participants in the group discussions shared their perspectives on how often they inspect their feet as a preventive measure against diabetic foot complications. Many emphasized the importance of daily foot inspection to detect issues early. However, some participants admitted to irregular inspections due to time constraints or neglect. This sub theme highlights the variation in individuals' commitment to daily foot care and the potential barriers they face.

2. Feelings about Investing Time and Effort in Preventive Foot Care

The emotional aspect of dedicating time and effort to preventive foot care was explored within the group. Participants shared mixed feelings, with some feeling motivated to invest time and others expressing frustration or resistance. This sub theme highlights the emotional challenges individuals may face when prioritizing foot care and the need for emotional support and motivation.

3. Motivation to Adhere to Recommended Foot Care Practices:

Motivation emerged as a recurring theme, with participants discussing what drives them to adhere to recommended foot care practices. Peer encouragement, awareness of potential complications, and personal goals were among the motivating factors mentioned. This sub theme emphasizes the role of motivation as a crucial factor in sustaining foot care practices and the potential influence of peer support on motivation.

4. Consequences of Neglecting Diabetic Foot Care:

The consequences of neglecting foot care were a sobering topic within the discussions. Participants acknowledged the potential severe consequences, including amputation, and discussed how this awareness influenced their commitment to proper foot care. This sub theme underscores the significance of education and awareness in reinforcing the importance of foot care and its role in preventing severe complications.

4.6.2 Meta-Proposition 2: Support Strategies

This proposition delves into the various support strategies and mechanisms employed to assist diabetic patients in foot care. It comprises several sub-propositions that shed light on the types and effectiveness of support:

Proposition 1: Informational Support:

1. Informational Support from the peer support groups:

Participants described the types of informational support they received from their peer mentors, which encompassed advice on foot care, nutrition, medication management, and blood sugar control. They emphasized the importance of having a knowledgeable mentor. This sub theme highlights the role of peer mentors as a source of valuable information and guidance.

2. Clarity of Information:

The group discussed the clarity and ease of understanding the information provided by their peer mentors. Clear communication was deemed essential for effective support. This sub theme emphasizes the importance of effective communication in ensuring that informational support is comprehensible and actionable.

3. Confidence in Managing Foot Care:

Participants expressed increased confidence in managing their diabetic foot care after receiving informational support from their mentors. This sub theme highlights the relationship between knowledge acquisition and self-confidence in self-care practices.

4. Sufficiency of Information:

The group considered whether the informational support met their needs, with most participants finding it sufficient and valuable. This sub theme emphasizes the alignment of support with individual needs and the perceived value of the information provided.

5. Recommendation to Others:

Participants discussed whether they would recommend the informational support from their peer mentors to other diabetic patients. Many expressed a willingness to do so,

highlighting the positive impact of such support. This sub theme reflects the potential for peer support to create a ripple effect, with satisfied individuals advocating for its benefits to others.

Proposition 2: Emotional Support:

1. Frequency of Emotional Support:

Participants shared how frequently they received emotional support from their peer mentors, with some mentioning daily interactions and others experiencing less frequent but meaningful support. This sub theme underscores the varied emotional needs of individuals and the importance of adaptable support strategies.

2. Forms of Emotional Support:

The group explored the various forms of emotional support they received, including active listening, empathy, and encouragement. This sub theme highlights the diversity of emotional support mechanisms and their impact on emotional well-being.

3. Coping with Diabetes-Related Stress:

Many participants attributed better coping with diabetes-related stress to the emotional support they received from their peer mentors. This sub theme underscores the role of emotional support in enhancing psychological resilience.

4. Emotional Resilience:

Participants discussed feeling more emotionally resilient since receiving support from their mentors. This sub theme emphasizes the potential for peer support to contribute to increased emotional resilience in individuals with diabetes.

5. Genuine Support:

The authenticity of emotional support was emphasized, with participants valuing the sincerity of their peer mentors. This sub theme underscores the importance of genuine and sincere interactions in building trust and emotional connections.Participants also felt more emotionally connected and understood due to the support they received from their peer mentors. This sub theme emphasizes the role of emotional support in fostering a sense of belonging and mutual understanding.

Proposition 3: Instrumental Support:

1. Frequency of Instrumental Support:

Participants shared how often they received tangible aid and services from their peer mentors, with varying frequencies mentioned. This sub theme reflects the flexibility of instrumental support to accommodate individual needs and circumstances.

2. Types of Instrumental Support:

The group discussed the types of instrumental support, such as transportation assistance, meal preparation, or medication reminders that they received from their mentors. This sub theme highlights the practical and tangible aspects of peer support.

3. Practicality and Helpfulness:

Participants evaluated whether the instrumental support they received was practical and helpful in managing their diabetic foot care effectively. This sub theme emphasizes the real-world impact of instrumental support on daily life.

5. Dependability of Mentors:

Participants discussed the reliability of their peer mentors when it came to providing instrumental support. Trustworthiness in delivering tangible aid was a key

consideration. This sub theme emphasizes the importance of reliability in peer support relationships.

6. Tailored Support:

The group highlighted the importance of instrumental support being tailored to meet their specific needs. Customization and personalization were valued aspects of this support. This sub theme emphasizes the individualized nature of instrumental support.

Proposition 4: Appraisal Support:

1. Frequency of Appraisal Support:

Participants discussed how often they received affirmation, feedback, and social comparison from their peer mentors. This sub theme underscores the regularity of appraisal support in peer relationships.

3. Positive Influence on Approach:

Many participants credited appraisal support for positively influencing their approach to managing diabetic foot care. This sub theme underscores the motivational aspect of appraisal support.

5. Motivation and Encouragement:

Participants felt more motivated and encouraged to manage their diabetes effectively due to the appraisal support from their peer mentors. This sub theme emphasizes the motivational power of affirmation and encouragement.

6. Accuracy and Reflection:

The feedback and affirmation received from peer mentors were considered accurate and reflective of participants' efforts. This sub theme underscores the importance of constructive and meaningful feedback.

7. Integral Part of Strategy:

Many participants valued appraisal support as an integral part of their diabetes management strategy. This sub theme reflects the recognition of appraisal support as a fundamental element in achieving self-care goals.

4.6.3 Proposed Peer Support Framework for Foot Care among Diabetic Patients (Peer-Care Framework)

Based on the analysis of the FGDs, the researcher proposes a framework for peer support in foot management among diabetics that encompasses the key themes and sub-themes identified in the focused group discussions. This model aims to create a structured approach to peer support for diabetic foot care. Below are the variables under each sub-theme per theme (proposition).

Title: Peer Support Framework for Foot Care among Patients with Diabetes Mellitus (PEER-CARE Framework)

Variables per proposition

I. Attitude towards Foot Care

1. Perceptions of Regularity of Foot Inspection:
    - Frequency of foot inspection (daily, irregular)
2. Feelings About Investing Time and Effort in Preventive Foot Care:
    - Emotional responses (motivation, frustration, resistance)
3. Motivation to Adhere to Recommended Foot Care Practices:

- Motivating factors (peer encouragement, awareness, personal goals)

4. Consequences of Neglecting Diabetic Foot Care:
    - Awareness of potential consequences (amputation, complications)

II. Informational Support

1. Informational Support from Peer Mentor:
    - Types of informational support received from peer mentors (advice on foot care, nutrition, medication management, blood sugar control)
2. Clarity of Information:
    - Assessment of the clarity and understandability of information provided by peer mentors
3. Confidence in Managing Foot Care:
    - Increase in participants' confidence levels in managing their diabetic foot care after receiving informational support
4. Sufficiency of Information:
    - Assessment of whether the informational support met participants' needs

III. Emotional Support

1. Coping with Diabetes:
    - Improvement in coping with diabetes-related stress attributed to emotional support from peer mentors
2. Emotional Resilience:
    - Participants' perceptions of increased emotional resilience since receiving support from their mentors
3. Genuine Support:

- Emphasis on the authenticity and sincerity of emotional support from peer mentors

4. Emotional Connection and Understanding:
    - Enhanced feelings of emotional connection and understanding due to support from peer mentors

IV. Instrumental Support

1. Types of Instrumental Support:
    - Types of tangible support provided by peer mentors (e.g., transportation assistance, meal preparation, medication reminders)
2. Practicality and Helpfulness:
    - Evaluation of whether instrumental support received is practical and helpful in managing diabetic foot care effectively
3. Improvement in Ability to Manage Foot Care:
    - Attribution of improved ability to manage diabetic foot care to instrumental support
4. Dependability of Mentors:
    - Discussion of the reliability of peer mentors in providing instrumental support
5. Tailored Support:
    - Emphasis on the importance of instrumental support being tailored to meet specific needs
6. Boosting Confidence:

- Impact of instrumental support on participants' feelings of capability in addressing diabetes management challenges

V. Appraisal Support

1. Frequency of Appraisal Support:
    - Frequency of receiving affirmation, feedback, and social comparison from peer mentors
2. Areas of Appraisal Support:
    - Specific areas in which participants primarily received appraisal support (e.g., diabetes management milestones, achievements)
3. Constructiveness and Benefits:
    - Evaluation of whether appraisal support received is constructive and beneficial to diabetic foot care management
4. Positive Influence on Approach:
    - Attribution of a positive influence on participants' approach to managing diabetic foot care to appraisal support
5. Accuracy and Reflection:
    - Consideration of the accuracy and reflection of feedback and affirmation received from peer mentors
6. Integral Part of Strategy:
    - Recognition of appraisal support as an integral part of participants' diabetes management strategy

This Peer Support Framework for Foot Care among Diabetic Mellitus Patients integrates the various dimensions of peer support discussed in the focused group discussions, providing a structured framework for designing and implementing effective peer support programs for diabetic foot care. The model highlights the importance of attitude, informational support, emotional support, instrumental support, and appraisal support in promoting successful diabetic foot management among peers

Proposed PEER-CARE framework

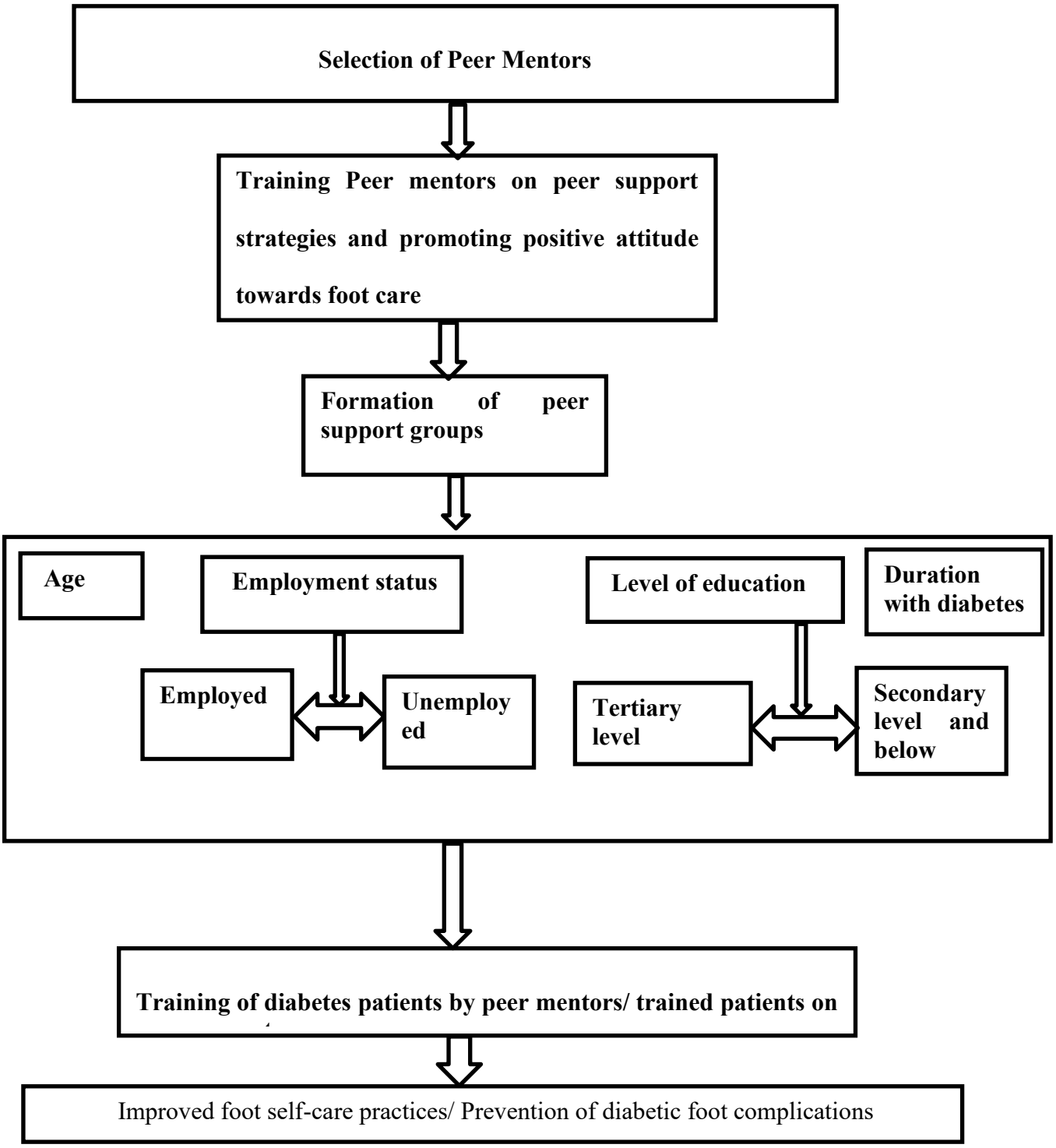

Figure 4.2: Schema for Peer support framework for foot self- care among diabetic patient (PEER-CARE Framework)

4.6.4 Measurement of the Proposed Peer Support Framework for Foot self-care among diabetic patients (PEER-CARE framework)

The "Peer Support framework for Foot Care among Diabetic Patients" (PEER-CARE FRAMEWORK) Assessment Questionnaire is designed to gather valuable insights from individuals diagnosed with diabetes. This questionnaire begins by collecting basic demographic information, such as age, gender, and the duration of diabetes diagnosis. Furthermore, it inquires if the respondent is currently receiving peer support for diabetic foot care.

The questionnaire comprises several key sections, each assessing different aspects of the PEER-CARE framework. Participants are asked to rate their agreement with statements on a scale of 1 to 5, where 1 represents "Strongly Disagree," and 5 represents "Strongly Agree."

Attitude towards foot care section explores participants' attitudes and beliefs regarding foot care as a preventive measure against diabetic foot complications. Questions assess their confidence in managing foot care, motivation to invest time and effort in preventive care, and the role of peer encouragement in adherence to recommended practices.

In the informational support section, participants are asked about the quality and impact of informational support received from peer mentors. Questions address the clarity and understandability of information provided, its effect on knowledge improvement, and its role in boosting confidence in managing diabetic foot care. Additionally, participants are asked if the informational support meets their specific needs and if they would recommend it to other diabetic patients.

The emotional support part delves into the emotional aspect of support received from peer mentors. Questions gauge the frequency and meaningfulness of emotional support, its impact on coping with diabetes-related stress, and its contribution to emotional resilience and attitude improvement. The authenticity of emotional support is assessed, along with its effect on participants' outlook and sense of emotional connection and understanding.

Participants' experiences with instrumental support from peer mentors are explored in this section. Questions cover the frequency and practicality of instrumental support types, such as transportation assistance and medication reminders, in managing diabetic foot care. Additionally, participants are asked about the impact of instrumental support on their daily lives, the reliability of their peer mentors in providing such support, and its customization to address their unique needs.

The appraisal support section evaluates the appraisal support received from peer mentors. Questions assess the frequency and focus of appraisal support on areas requiring feedback and affirmation in diabetic foot care management. The constructiveness and motivational aspect of this support are also explored, along with its influence on improving foot care routines, accuracy in reflecting participants' efforts, and fostering a sense of accomplishment and self-worth in diabetes management. Lastly, participants are asked to assess the integral role of appraisal support in their overall diabetes management strategy.

The PEER-CARE Model Assessment Questionnaire aims to provide valuable insights into the effectiveness of peer support in diabetic foot care and its impact on participants' attitudes, emotional well-being, and practical management of their condition. Through participants' feedback, this questionnaire aims to contribute to the refinement and optimization of the PEER-CARE framework for the benefit of individuals with diabetes.

Peer Support Framework for Foot Care among Diabetic Patients (PEER-CARE FRAMEWORK) Assessment Questionnaire

Demographic Information:

1. Age: _____
2. Gender: _____
3. How long have you been diagnosed with diabetes? _____

Please rate the following statements on a scale of 1 to 5 **Key:1 - Strongly Disagree, 2 - Disagree, 3 - Neutral, 4 - Agree, 5 - Strongly Agree**	**1**	**2**	**3**	**4**	**5**
Attitude Towards Foot Care:	**1**	**2**	**3**	**4**	**5**
1. Regular inspection of my feet is a preventive measure against diabetic foot complications.					
2. I feel confident in managing my foot care effectively.					
3. I am motivated to invest time and effort in preventive foot care.					
4. Peer encouragement plays a significant role in motivating me to adhere to recommended foot care practices.					
5. I am aware of the potential severe consequences of neglecting foot care, and this influences my commitment to proper foot care.					
Informational Support:	**1**	**2**	**3**	**4**	**5**
1. I receive valuable informational support from my peer mentor, including advice on foot care, nutrition, medication management, and blood sugar control.					
2. The information provided by my peer mentor is clear and understandable.					

3. The informational support I receive has improved my knowledge of diabetic foot care.					
4. I feel more confident in managing my diabetic foot care after receiving informational support from my mentor.					
5. The informational support I receive meets my specific needs and is valuable.					
6. I would recommend the informational support from my peer mentor to other diabetic patients.					
Emotional Support:	**1**	**2**	**3**	**4**	**5**
1. I receive emotional support from my peer mentor at an appropriate frequency.					
2. The forms of emotional support I receive, such as active listening, empathy, and encouragement, are meaningful to me.					
3. Emotional support has helped me cope better with diabetes-related stress.					
4. I feel more emotionally resilient since receiving support from my peer mentor.					
5. The emotional support I receive is genuine, and my peer mentor's sincerity is important to me.					
6. Emotional support has significantly improved my outlook and attitude towards managing diabetes.					
7. I feel more emotionally connected and understood due to the support I receive from my peer mentor.					
Instrumental Support:	**1**	**2**	**3**	**4**	**5**
1. I receive instrumental support from my peer mentor at a frequency that meets my needs.					
2. The types of instrumental support I receive (e.g., transportation assistance, meal preparation, medication reminders) are practical and helpful in managing my diabetic foot care.					
3. Instrumental support received is practical and helpful in managing diabetic foot care effectively					
4. Instrumental support from my peer mentor has significantly improved my ability to manage diabetic foot care.					

5. The instrumental support enhances my daily life and makes managing diabetes more manageable.					
6. I find my peer mentor to be dependable when providing instrumental support.					
7. The instrumental support I receive is tailored to meet my specific needs.					
8. Due to instrumental support, I feel more capable of addressing the challenges associated with diabetes management.					
9. Overall, I am satisfied with the level of instrumental support I receive from my peer mentor.					
Appraisal Support:	**1**	**2**	**3**	**4**	**5**
1. I receive appraisal support from my peer mentor at an appropriate frequency.					
2. Appraisal support primarily focuses on areas where I need feedback and affirmation in my diabetic foot care management.					
3. The appraisal support I receive is constructive and beneficial to my diabetic foot care management.					
4. Appraisal support has positively influenced my approach to managing diabetic foot care.					
5. I have improved my diabetic foot care routines as a result of appraisal support.					
6. Appraisal support motivates and encourages me to manage my diabetes effectively.					
7. The feedback and affirmation I receive from my peer mentor accurately reflect my efforts and progress.					
8. Appraisal support has fostered a sense of accomplishment and self-worth in my diabetes management journey.					
9. I consider appraisal support an integral part of my overall diabetes management strategy.					

4. Are you currently receiving peer support for diabetic foot care? (Yes/No)

Open-Ended Questions:

Please share any additional comments or suggestions regarding the peer support you receive for diabetic foot care.

Thank you for participating in this assessment. Your feedback is valuable in evaluating the effectiveness of the **Peer Support framework for Foot Self-Care among Diabetic Patients (PEER-CARE Model)**.

CHAPTER FIVE

DISCUSSION

5.1 Introduction

The study focused on the effectiveness of peer support for foot self care practices in prevention of diabetic foot complications among patients in Western Kenya. This was carried out among both male and female participants with a mean age of 51.7±10.9 years. Peer support had a substantial positive impact on foot self-care practices. Level of education, employment status, positive attitude towards foot care and diabetes foot care self evaluation significantly influenced foot care practices, emphasizing their role in preventing foot complications among diabetic patients. The factors that were shown to influence the effectiveness of peer support included study arm, support strategies, and various sociodemographic characteristics. Different support strategies, including informational, instrumental, and appraisal support, significantly contributed to better foot care practices. The PEER-CARE model, derived from the study, presents a structured framework for implementing peer support in foot self-care among patients with diabetes mellitus. The study provided valuable insights into foot care among diabetics, highlighting the important role of peer support. The PEER-CARE model and proposed measurement approach offer a comprehensive framework for implementation and evaluation, reiterating the multidimensional impact of peer support on diabetic patients' well-being.

5.2 Sociodemographic characteristics and Disease Related Aspects of Participants

The sociodemographic characteristics and disease related aspects of participantsare essential for contextualizing the findings within the broader scope of diabetes management. The participants' age profile, predominantly middle-aged and older adults, aligns with the increased vulnerability to diabetes-related complications in this age group. Thus the study was carried in a population with highest risk of foot complications. This equally ensured optimized benefits if the proposed intervention indeed conferred protection against foot complications among diabetes. As such, research has shown that age-specific interventions guarantee optimal outcome (Banik et al., 2020; Rossboth, Lechleitner, et al., 2021). Most of the participants had attained secondary level education, suggesting a moderate degree of health literacy, which, is crucial for the success of educational interventions in diabetes self-management (Marciano et al., 2019). Over a third of the participants were employed and had a higher representation in the intervention group. This could occasion a potential variation in engagement with the intervention. Nwobodo (2023) points out that employment can influence an individual’s participation in health programs due to time constraints or work-related stress (Nwobodo et al., 2023). Further, previous research has demonstrated a relationship between economic stability and diabetes outcomes (Hill-Briggs et al., 2021). The high proportion of married participants, a factor linked to better health outcomes in chronic diseases due to potential spousal support, adds another layer to understanding participant dynamics that is key in interpreting the findings (Gray et al., 2023).

In terms of health status, the prevalence of comorbidities in nearly a third of the participants mirrors global trends of co-occurrence of chronic conditions in individuals with diabetes (Nowakowska et al., 2019). The prevalence of Type 2 diabetes, accounting for 62.9% of the cases in our study, corresponds with the upward trend in the worldwide occurrence of type two diabetes compared to other types, notably in low- and middle-income nations(Khan et al., 2020; Lin et al., 2020). The diverse range of diabetes duration observed among the study participants highlights the necessity for a multifaceted approach to diabetes management. This diversity could signify that the challenges and strategies involved in managing diabetes differ with the progression of the disease. It is important to note that the risk of foot complications tends to increase with the duration of diabetes (Rossboth, Rossboth, et al., 2021).

5.3 Objective 1: Performance of Foot Self-care Practices for Prevention of foot Complications among Patients with Diabetes Mellitus in Western Kenya

The significantly higher mean score in foot self-care practices among the intervention group (61.1) compared to the control group (35.7) with a substantial partial Eta^2 of 0.84 reiterates the effectiveness of peer support in enhancing self-care practices. The concept of peer support involves patients receiving assistance and encouragement from individuals who share similar health conditions and experiences. This approach has been increasingly recognized for its effectiveness in improving health outcomes in chronic diseases, including diabetes, as shown by several other studies (Aziz et al., 2018; Doull et al., 2017; Ghasemi et al., 2021; Thompson et al., 2022). There are diverse mechanisms by which peer support achieves this. These include; the sharing of personal experiences and practical tips, emotional support, motivation through shared understanding, and the creation of a supportive community that understands

the specific challenges of living with diabetes. These factors collectively contribute to better self care practices, as individuals feel more understood, less isolated, and more equipped with practical strategies to manage their condition (Fisher et al., 2012; Ghasemi et al., 2021; Yin et al., 2015). Effective self-care practice is essential for managing diabetes, including practices like monitoring blood glucose, medication adherence, physical activity, diet maintenance, and foot care to prevent complications. This self-care significantly improves glycemic control, reduces complications, and enhances overall quality of life (Alodhayani et al., 2021; Gao et al., 2013; Maina et al., 2023). Therefore, the results from the current study show that peer support plays a crucial role in promoting self-care by providing a platform for sharing knowledge and experiences, offering emotional and social support, and empowering individuals to manage their condition effectively. Other studies have shown that peer support contributes to better foot health among diabetic patients especially when deliberate structured efforts are put in place (Tazangi et al., 2022;Wang et al., 2022).

The study's finding that age-related variations in foot self-care practices were minimal is particularly noteworthy suggesting that peer support is equally effective across different age groups. Managing diabetes presents distinct challenges at different life stages. Younger individuals experience issues such as integrating diabetes management with an active lifestyle, career, or education. In contrast, older adults might grapple with comorbidities and the complexities of managing diabetes alongside other age-related health issues (Beverly et al., 2014; Pandya et al., 2020). The minimal variation in effectiveness across age groups implies that peer support strategies are adaptable and can address the diverse needs and challenges faced by individuals at different life stages. However studies have demonstrated better foot

care among older patients where they were more conscious of their foot health than younger patients (Sari et al., 2022; Tuha et al., 2021; Woo & Cui, 2023).

The study's observation that gender differences had marginal impact on the effectiveness of peer support for foot self-care among participants resonates with broader research on diabetes self-management. Historically, there has been an assumption that gender plays a significant role in how individuals manage chronic illnesses like diabetes. However, recent studies, indicate that the differences in self-management behaviors between genders are not as pronounced as previously thought (Burner et al., 2013; Bygrave, 2018). This suggests that effective diabetes management strategies, including peer support, can be universally applied across genders. It also highlights the need for diabetes care programs to focus more on individual needs rather than on broad gender-based assumptions (Iregbu et al., 2023).

Another significant finding from the study is the higher scores in foot self-care practices among participants with primary education compared to other educational levels. This suggests that this peer support programs had a unique adaptability to individuals with varying educational backgrounds thus buttressing the perception that the intervention was simple, scalable and one that could be understood even without higher level of education, making it relevant to the general population. Blanchette et al., (2022) emphasize the importance of adaptability in the success of diabetes interventions (Blanchette et al., 2022). The ability of peer support programs to effectively communicate and engage with individuals who have varying levels of health literacy and educational attainment is crucial. It ensures that the program goals are inclusive and can cater to a wider population, thereby enhancing their overall

impact (Sharma & Khan, 2021). The success of peer support in individuals with primary education could be attributed to the program's emphasis on practical, experiential knowledge rather than on academic or technical information. This approach may resonate more with individuals who have less formal education, as it aligns more closely with their learning experiences and preferences. Additionally, peer support often involves sharing personal experiences and practical tips in managing diabetes, which can be more relatable and easier to understand and apply for individuals with varying educational levels. Previous studies have indicated that those with higher education tend to be less open to sharing personal experiences as opposed to those with lower education (Haregu et al., 2023; Joensen et al., 2016).

Sociodemographic variables such as education and employment status were demonstrated as determinants of foot self-care practices based on NAFF score. This finding is supported by other researches that reflect the understanding that sociodemographic factors have a bearing on health seeking behavior (Dey et al., 2022; Nimesh et al., 2019). A study by Nugent et al., (2023) supports the notion that education level plays a significant role in diabetes self-management. Education influences an individual's health literacy, which refers to their ability to understand and apply health-related information (Nugent et al., 2023). Individuals with lower education levels may struggle to comprehend the complexities of diabetes care recommendations, such as medication management, dietary choices, and blood glucose monitoring and their bearing on foot health (Ahmed et al., 2019). This knowledge gap can hinder their ability to effectively manage their condition. Additionally, lower health literacy is associated with poorer health outcomes and increased healthcare utilization for diabetic clients (Dahal & Hosseinzadeh, 2019). Employment status is another important socioeconomic factor that can impact

diabetes management. Individuals with stable employment often have better access to healthcare resources (Hill-Briggs et al., 2021). Employment may provide health insurance coverage, which can be critical for financial access to necessary medications, regular check-ups, and diabetes-related medical technologies (Chin et al., 2019). Moreover, individuals with full-time jobs may have more flexible schedules to accommodate medical appointments and self-care routines (Sari et al., 2020). On the other hand, unemployment can limit access to health resources, making it challenging for individuals to maintain consistent self-care practices and manage their diabetes effectively (Ahmed et al., 2019).

The study also explored foot care perceptions including attitudes toward foot care. While the current study did not reveal a significant association between most of these factors (with the exception of attitude towards foot care and self evaluation) and foot self-care practices previous research has consistently highlighted the importance of these elements in effective diabetes management (Ayele et al., 2019; Gulentie et al., 2020; Helgeson et al., 2019; Rana et al., 2022). Helgeson et al., (2019) and Rana et al., (2022) demonstrate how psychological factors, including attitudes and beliefs about diabetes, can significantly impact self-management behaviors. These studies emphasize that psychological factors, such as attitudes, beliefs and perceptions about diabetes, play a pivotal role in shaping self-management behaviors among individuals with diabetes. A positive attitude toward foot care is likely to enhance engagement with self-care practices, leading to better health outcomes. When individuals hold positive beliefs and perceptions about the significance of foot care in diabetes management, they are more inclined to prioritize foot health and adhere to recommended foot care practices. Conversely, negative attitudes or misconceptions

about foot care may hinder self-care efforts, potentially increasing the risk of foot neglect posing the risk of developing diabetic footcomplications (Helgeson et al., 2019; Rana et al., 2022).

5.4 Objective 2: Factors Influencing Peer Support on foot self-care practices for Prevention of Foot Complications among Patients with Diabetes Mellitus in Western Kenya

The study's analysis of the effectiveness of peer support for foot self-care practices in diabetic patients in Western Kenya significantly enhances our understanding of the prevention of foot complications among this population. The study elucidated a substantially higher level of self foot care practices as evidenced by the NAFF Score within the intervention group. This outcomes aligns with similar peer support interventions, emphasizing the effectiveness of peer support strategies in self management among diabetic patients(Aziz et al., 2018; Liang et al., 2021; Wang et al., 2022).Previous studies have also demonstrated the positive influence of peer support on various aspects of diabetes self-management beyond foot self- care such as; improved medication adherence by providing reminders and support, lifestyle modifications through shared experiences and motivation, emotional well-being by offering a safe space for discussing emotional struggles, fostering problem-solving skills, sharing of valuable knowledge, and empowering individuals to take control of their diabetes (Aziz et al., 2018; Liang et al., 2021; Sharma & Khan, 2021; Y. Wang et al., 2022). The current study findings emphasize the need to include peer support in diabetes care programs because it improves foot care practices among diverse patient groups. Peer support's effectiveness is not limited to specific demographics, making it a valuable component in diabetes management strategies. Studies conducted in

various healthcare settings and with different populations support the idea that peer support can play a crucial role in diabetes care, regardless of the patient's background or location (Fisher et al., 2012; Haregu et al., 2023; Liang et al., 2021). Haregu et al., (2023), highlights the positive impact of peer support in chronic disease management. Peer support provides a platform for shared experiences and mutual learning, which can be particularly effective in imparting practical skills and strategies for daily self-care routines, such as foot care in diabetes management. The peer support framework fosters an environment where individuals can learn from peers who have successfully navigated similar challenges, making the advice and strategies shared more relatable and practical. The weak correlations between individual characteristics (such as age, gender, and marital status) and foot care practices are particularly revealing. This suggests that the benefits of peer support in enhancing foot care practices are broadly applicable, surpassing demographic boundaries. This universality is significant as it implies that peer support programs can be effectively implemented across diverse patient populations, addressing the needs of various demographic groups. This finding resonates with the increasing recognition of peer support as a versatile and adaptable model in health interventions, capable of addressing the needs of a wide range of individuals with different backgrounds and experiences (Ghasemi et al., 2021; Haregu et al., 2023; Sharma & Khan, 2021; Wang et al., 2022). The observed reduction in correlation coefficients from zero-order to part for foot care practices reinforce the dominant role of peer support in this aspect, relative to other factors. This aligns with Greenwood et al. (2022), who emphasize the transformative potential of peer support in diabetes care. The ability of peer support to significantly enhance knowledge and self-care practices is a demonstration of its effectiveness as a healthcare intervention. This effectiveness can be attributed to the ability of peer-led approach to provide

tailored guidance, emotional support, and motivation, which are crucial for sustaining self- care practices(Greenwood et al., 2022).

5.5 Objective 3: Outcome of Peer Support Strategies on foot Self-care Practices for Prevention of Foot Complications among Patients with Diabetes Mellitus in Western Kenya

During the FGDs and key informant interviews, several themes emerged which are explored broadly as attitude towards foot care, informational support, emotional support, instrumental support, and appraisal support. These themes were them explored into sub-themes that best fitted to each as they arose from the analysis.

Analysis of attitude showed that it is a central and pivotal aspect in the experiences and perceptions of participants where their attitudes toward foot care played a fundamental role in shaping behaviors and decisions related to the management of diabetes in general and specifically to foot care. Perceptions of regularity of foot inspection emerged as a fundamental aspect of foot care among diabetics. Participants acknowledged its essential nature and, in some cases, incorporated it as a daily ritual. This is consistent with existing literature on foot care among diabetics, which emphasizes the significance of daily foot checks to detect early signs of complications (CDC, 2023; Shaqran et al., 2023). One participant passionately emphasized the role of regular foot inspection, stating, *"I think regular foot inspection is very important. I do it daily. I don't want to take any chances with my feet"*(FGD 12). This commitment to regularity was not uniform among participants, illustrating the multifaceted nature of individuals' approaches to this aspect of foot care. Peer support emerged as a central theme influencing effective foot care management. This aligns with research that highlights the value of peer support in diabetes self-management (Garizábalo-Dávila et al., 2021; Haregu et al., 2023). Participants not only acknowledged the

guidance provided by members of the support group lead by the peer mentors but also underscored how they helped instill proper foot care habits. As one participant articulated, *"Well, I've learned a lot from other people in this group. There is always a constant reminder to check our feet"*(FGD 32). Balancing foot care with other life responsibilities presented challenges, emphasizing the need for tailored interventions that address these challenges while emphasizing the importance of foot care. Likewise, participants unanimously recognized the inherent value of preventive foot care for maintaining holistic health and avoiding complications thus perceptions about investing time and effort in preventive foot care emerged. This sentiment resonates with studies emphasizing the importance of preventive care in preventing diabetic foot ulcers (Ghasemi et al., 2021; Tuha et al., 2021). Despite this consensus, participants acknowledged the ongoing struggle between understanding its significance and its practicality in everyday life. This therefore calls for interventions that bridge the gap between knowledge and practical implementation more so in scheduling of foot care activities. Further, motivation to adhere to foot care practices stemmed from various sources, including personal connections and broader life aspirations. Family and peer support played significant roles, aligning with existing research on the influence of social support in diabetes management (Busebaia et al., 2023; Mphasha et al., 2022; Onyango et al., 2022). A participant's statement, *"My family. I want to be there for them, so I follow my foot care plan diligently,"* (FGD 18) exemplifies the power of personal connections in motivating individuals to adhere to recommended practices. One study showed participants' sense of empowerment and control through dedicated foot care practices, which can be a powerful motivator in managing the complexities of diabetes (Varming et al., 2019). Lastly, participants vividly described the profound repercussions of neglecting foot care, including ulcers,

infections, and amputations. Beyond physical implications, participants were keenly aware of the emotional toll on themselves and their loved ones. The instrumental role of support in educating and raising awareness about the holistic impact of foot care negligence underscores the value of peer support models (Gray et al., 2023). The exploration of attitudes toward foot care among diabetic patients in the current study reveals a complex interplay of commitment, peer influence, perceived value, motivational factors, and awareness of potential consequences. These findings provide valuable insights into the development of a peer support model for foot care management among diabetics. Tailored interventions that consider the diverse attitudes and experiences of individuals are essential for promoting effective foot care practices and preventing complications in this vulnerable population.

The theme of "Informational Support" emerged as one that plays a pivotal role in providing essential information and guidance to diabetic patients. Participants consistently highlighted informational support covered vital areas such as foot care practices, dietary guidelines, medication adherence, and strategies for effective blood sugar management. Existing research supports the importance of comprehensive education in diabetes self-management (ALSharit & Alhalal, 2022; Marciano et al., 2019). The quote, *"I advise my peers to check their feet daily for any cuts, blisters, or sores"*(FGD 18), underscores the significance of daily monitoring as a preventive measure, aligning with established guidelines for foot care among diabetics (Otanga et al., 2022). Moreover, the specificity and tailored advice provided, such as recommending appropriate footwear, aligns with the personalized approach recommended for diabetes management (Rossboth, Rossboth, et al., 2021). Effective communication emerged as a cornerstone of successful peer mentorship. Participants

valued the clarity and comprehensibility of the information provided, as well as the patience of their mentors. Clear and understandable communication is critical in promoting patient understanding and adherence to recommendations, as emphasized in the literature (Gao et al., 2013; Özkan et al., 2023; Rachmawati et al., 2019). One of the participants intimated that, *"My peer mentor uses simple language and helps us to understand those difficult medical terms"*(FGD 1), highlights the importance of plain language and accessibility in health communication. Peer support also proved instrumental in enhancing participants' knowledge of foot care among diabetics as demonstrated by the sentiments of some of the participants like, *"...my mentor and I discussed the different risk factors and complications associated with diabetic foot care"*(FGD 16), which accentuates the educational value of peer support. The program empowered participants with essential knowledge, from recognizing risk factors to wound care, thus, highlighting the effectiveness of peer-led interventions in improving patient knowledge and its potential in enhancing self-care behaviors. Beyond knowledge acquisition, peer support boosted participants' confidence in managing foot care related activities (AlQahtani et al., 2020; Dahal & Hosseinzadeh, 2019). This increased confidence is a crucial aspect of self-efficacy, a key determinant of diabetes self-management (Vandenbosch et al., 2018). The emotional and motivational support offered by peer mentors played a pivotal role in building this confidence as shown by one of the participants, quote, *"My mentor's guidance and support made me feel less anxious about potential complications,"*(FGD 2). Further, feedback from participants indicates a largely positive reception of the peer support program. However, there was a recurring suggestion for the integration of supplementary materials into the program. Providing written resources aligns with recommendations for enhancing diabetes education (İlhan et al., 2021). Such

materials can act as valuable references, ensuring that participants have reliable information at their disposal, even when direct mentor interaction is not feasible. Lastly, participants enthusiastically endorsed the peer support program, emphasizing the dual role played by mentors as empathetic companions and knowledgeable guides. This endorsement underscores the unique and powerful effect of peer support, combining emotional understanding with actionable guidance. Existing literature supports the value of peer support in improving diabetes self-management outcomes and quality of life (Garizábalo-Dávila et al., 2021; Maina et al., 2023). Thus, informational support highlights the profound impact of peer support on knowledge acquisition, confidence building, and overall well-being. This peer support model not only empowers individuals with diabetes to better manage their condition but also offers a sense of camaraderie and emotional support as supported by other literature by Alessi et al., (2022)(Alessi et al., 2022).

In addition, the current study highlighted that the Ministry of Health guidelines and protocols serve as a primary source of material for providing information about foot care practices to diabetes patients. These guidelines cover essential aspects of diabetes care, including foot care instructions. Informants noted that these guidelines are prominently displayed, making them accessible however patients often refer to the guidelines independently, raising concerns about their comprehension. Another provider emphasized that guidelines evolve slowly. However, the field of diabetes management continually evolves, necessitating more frequent updates.

Key informants acknowledged the difficulty of tailoring information to individual patients. The large volume of patients makes it impractical to sit down with each

person and address their unique needs comprehensively. Health care providers often conduct group health education sessions. While efficient, this approach may not fully address individual concerns. Patients who arrive late to these sessions miss out, emphasizing the need for alternative strategies.

The recommendations from participants underscore the potential for enhancing such programs through supplementary materials and serve as valuable insights for the development of effective interventions in diabetic care.

"Emotional Support" emerged as a theme with profound impact of peer support in providing empathy, understanding, and encouragement to individuals managing diabetes. Participants noted varying frequencies of emotional support from their mentors, with interactions ranging from daily to monthly as supported by, quote, "I communicate with my mentor almost every other day,". The importance of regular contact was emphasized, providing participants with a consistent source of emotional solace. Research suggests that frequent contact with supportive individuals can improve psychological well-being and reduce feelings of isolation (Diriba et al., 2023; Varming et al., 2019). The participants noted that personal stories and shared experiences were powerful modes of emotional support, providing reassurance through common challenges. This aligns with the literature on the benefits of peer support in chronic illness management (Sharma & Khan, 2021). Digital interactions, including sharing of infographics on diabetes, telephone calls, were highlighted for enabling deeper emotional connections. The importance of face-to-face interactions and community building through online platforms aligns with the notion of social support networks (Greenwood et al., 2022; Pienaar & Reid, 2021). Emotional support

was credited with serving as a source of solace during challenging periods, alleviating feelings of isolation, stress and anxiety by some of the participants intimating that; *“Peer support has reduced the anxiety I used to feel around managing my diabetes"* (FGD 27). Studies by Alessi et al., (2022) and Helgeson et al., (2019) suggest that emotional support can enhance individuals' ability to cope with stress (Alessi et al., 2022; Helgeson et al., 2019). The study by Alessi et al., (2022) demonstrated relatively lower anxiety among diabetics related to emotional support received from peers, family and the whole treatment and care team (Alessi et al., 2022). Likewise, peer mentor support was recognized for making participants emotionally resilient and better prepared to tackle challenges as supported by sentiments like, *“with ... coping methods shared within the group, I've grown emotionally stronger,"*(FGD 29).Coping strategies shared by mentors were highlighted for strengthening emotional stability. This finding is similar to the concept of resilience-building through social support demonstrated by other studies (Chittooru et al., 2022; Nair et al., 2023; Y. Wang et al., 2022). Also authenticity and genuine empathy were celebrated as distinguishing features of peer support. The authentic nature of the relationship, rooted in shared experiences, was considered a potent aspect of the mentorship with other research highlights the importance of authentic and empathetic support in promoting psychological well-being (Aziz et al., 2018). The feeling was that, *"The relationship I share with the group is genuine and real. Here everyone just really wants you not to have bad health"*(FGD 17), underscores the authenticity of the emotional connection. Equally, emotional support from mentors had a transformative impact on participants' perceptions as demonstrated by some of the participants’ anecdotes like; *"the sense of being heard and valued is tremendous,"* (FGD 19). This enabled the clients to view diabetes as a manageable facet of life rather than an overwhelming identity. This shift

fosters optimism and a forward-looking approach to managing diabetes. Research suggests that positive emotional support can improve individuals' overall outlook on life (Alessi et al., 2022; Rana et al., 2022). The participants also demonstrated that mentorship goes beyond guidance, nurturing a deep emotional connection rooted in mutual comprehension and shared experiences, quote, *"It's more than just advice; it's a deep bond that's been formed"* (FGD 14). This emotional connection ensures that participants feel recognized, listened to, and cherished. Such emotional recognition and shared resilience are essential components of effective emotional support (Kowitt et al., 2015). The exploration of emotional support encompasses various modes of interaction, contributes to coping and emotional resilience, is characterized by authenticity, fosters a positive outlook, and nurtures deep emotional connections.

Health care providers acknowledged that there is no well-defined or systematic framework for providing emotional support to patients with diabetes. This lack of structure may result in inconsistent approaches and varying levels of emotional support across different healthcare settings. Despite the absence of a formal framework, healthcare providers recognized the critical importance of emotional support for patients. Emotional well-being significantly impacts overall health outcomes, and acknowledging patients' emotional needs is essential. Healthcare providers also expressed challenges related to offering emotional support. Balancing availability and boundaries while addressing patients' emotional needs remains a delicate task. This is consistent with existing literature which emphasize the role of emotional support in ensuring well-being of patients with resultant positive health outcomes (Varming et al., 2019; Alessi et al., 2022)

These findings emphasize the profound impact of emotional support on the well-being and self-management of individuals with diabetes, thus showcasing the importance of peer support in this regard.

"Instrumental Support" also emerged as a central theme that highlights the tangible aid and practical assistance provided by peer support to individuals managing diabetes. Participants experienced varying frequencies of instrumental support, emphasizing the customization of support based on individual preferences and schedules. The quote, *"I receive support from my peer mentor about once a week"*(FGD 11), illustrates the flexibility of mentorship. This adaptability shows the importance of tailoring support to meet the specific needs and situations of each participant. Research suggests that individualized support can enhance the effectiveness of peer-led interventions (Otanga et al., 2022). Participants also detailed a wide range of instrumental support, covering areas such as footwear recommendations, exercise guidance, wound care, medication management, and assistance with navigating insurance as highlighted by one of the quotes by the participants, *"My mentor helps me with choosing the right footwear. They've even accompanied me to the store to make sure I get the best shoes for my condition,"* (FGD 21). This holistic and comprehensive assistance aligns with the concept of addressing multifaceted needs in chronic illness management to optimize outcome (Jasemi et al., 2017; Juanamasta et al., 2021). Equally, the participants consistently found the support practical and beneficial, reporting improvements in foot comfort, pain management, stress reduction, medication adherence, and overall well-being, quote, *"The foot massages and exercises suggested in the peer support group have helped me manage pain and improve circulation"*(FGD 18). The personalized nature

of the support was particularly valued. Pienaar & Reid, (2021) suggests that practical assistance can enhance self-care behaviors and health outcomes (Pienaar & Reid, 2021). Favorable outcomes resulting from instrumental support were reported, *".....It's made healthy eating more manageable"*(FGD 30)These included increased confidence, effective pain management, improved circulation, early issue identification, fewer blisters, and increased mobility. Participants credited mentorship for refining their foot care practices, which is consistent with the literature on the positive impact of peer support on diabetes self-management (Chen et al., 2014). Participants also expressed the profound positive influence of instrumental support on various aspects of their daily lives, including pain relief, reduced anxiety, increased physical activity, enhanced work productivity, stress reduction, improved mobility, and increased independence. This all round impact on daily life aligns with the notion that effective self-management can lead to improved overall well-being (Maina et al., 2023; Otanga et al., 2022). Equally, trust and dependability characterized the relationship with mentors, with participants emphasizing their mentors' consistent availability and prompt response. The reliability of mentorship translated into reduced stress for participants, underscoring the importance of dependable support in chronic illness management as also highlighted by other studies (Ghasemi et al., 2021; Sharma & Khan, 2021). The quote, *"I've found my mentor to be quite reliable. They've never let me down when I needed assistance"*(FGD 29), emphasizes the reliability and trustworthiness of mentorship elucidated by this research. The research also showed that participants valued the personalized approach of mentors, taking into account individual challenges, preferences, lifestyles, and cultural backgrounds. This personalized touch enhanced the effectiveness and trustworthiness of the support provided. This is in tandem with Sari et al., (2022) research that highlighted the

importance of tailoring interventions to individual needs in chronic disease management (Sari et al., 2022). Participants stressed the significance of this personalized approach in strengthening the impact of peer support. It was also shown that increased confidence and empowerment in managing diabetes and foot care challenges emerged as significant outcomes of instrumental support. Participants attributed their advancements to the support received. Kowitt et al., (2015) and Vandenbosch et al., (2018) in their research highlighted the transformative power of mentorship in bolstering confidence and proactive care, thus, showing that peer support can enhance individuals' self-efficacy and sense of control in managing chronic conditions (Kowitt et al., 2015; Vandenbosch et al., 2018). While participants predominantly expressed satisfaction with the mentorship, they also provided constructive feedback for improvement. This feedback included suggestions for specialized guidance, regular interactions, additional resources, and broader program initiatives. The combination of satisfaction and constructive feedback emphasizes both the positive impact of mentorship and opportunities for enhancement thus highlighting the significant role of peer mentorship in enhancing the practical aspects of managing diabetes and foot care.

Lastly, *"appraisal support"* emerged as a recurrent theme in the analysis where the research showed that participants experienced varying frequencies of appraisal support from their peer mentors, reflecting the individuality of each diabetic journey. The consistency of check-ins and the frequency of support were tailored to meet each participant's unique needs and preferences. Research emphasizes the importance of regular feedback and support in improving self-care behaviors (Garizábalo-Dávila et al., 2021). Equally, the participants appreciated the delicate balance struck by their

mentors in providing appraisal support, quote, *"I appreciate that it's tailored to my needs,"*(FGD 5). This balance was tailored to individual needs and preferences, emphasizing the importance of personalized and balanced support in effective mentorship. Some participants expressed a desire for a structured approach to mentorship, with well-defined goals and feedback timelines. This structured approach aimed to create consistency and transparency in the mentorship journey. Research indicates that structured interventions can lead to improved outcomes in chronic disease management (Doull et al., 2017; Ferrari et al., 2023; Thompson et al., 2022). The participants felt that peer support ensured that *"...everyone is on the same page about…"* reflects the desire for a consistency in mentorship. Further, the anecdotes showed that appraisal support encompassed various aspects of diabetes management, including daily foot care, diet, exercise, medication, and doctor's visits. This diversity ensured a holistic experience for participants, addressing different dimensions of their diabetic journey. This need for a comprehensive approach to support aligns with the concept of addressing the diverse needs in chronic illness management (Doull et al., 2017; Ferrari et al., 2023). Participants also found practical advice and shared experiences to be beneficial in refining their routines and improving diabetes management. Constructive feedback can enhance individuals' self-care behaviors and outcomes as open communication serves as the bridge that aligned the mentorship process with the uniqueness of each participant (Tiruneh et al., 2019; Wei et al., 2020). Discussing needs and preferences facilitated a harmonious and effective mentorship journey with the quote, *"I talked to her about it, and she adjusted her approach"*(FGD12) illustrating the importance of dialogue in mentorship. It was also demonstrated that appraisal support had a positive impact on diabetes management, with participants reporting improvements in their foot care routines. The mentorship

transformed the diabetes narrative into a consistent improvement of well-being through the positive feedback and encouragement. The quote, *"The peer mentor gave me praises when I made a little effort in foot care or other care which helped me improve care of my feet"*(FGD 33) highlights the positive aspects of mentorship. Mentor-supported journeys became tales of achievement and pride as the participants celebrated personal accomplishments in managing their diabetes, which added depth and satisfaction to their diabetic narratives. Other studies have shown that recognizing achievements can boost individuals' self-confidence and motivation (Ghasemi et al., 2021; Pienaar & Reid, 2021). The participants' expression that self-care has *"... been consistent for six months now ...and ...really proud of that"*(FGD 22) reflects the sense of accomplishment nurtured by mentorship. Participants overwhelmingly agreed on the indispensability of appraisal support, considering mentors as essential pillars in diabetes management. The integral role of peer mentors in diabetes management aligns with research emphasizing the importance of social support in chronic illness care (Tseng et al., 2022). These findings highlight the significant impact of appraisal support in enhancing the self-care behaviors and well-being of individuals managing diabetes.

5.6 Objective 4: Peer Support Framework for Foot Self-care Practices

The qualitative analysis enabled the researcher propose a practice framework dubbed the PEER-CARE framework which represents a comprehensive framework developed through focused group discussions and thematic analyses, aiming to provide a structured approach to peer support strategies for foot care among diabetics. This framework comprises two meta-propositions and several sub-propositions, each delving into distinct facets of peer support in the context of foot care among diabetics.

The first meta-proposition is attitude towards foot care. This is dedicated to gaining insights into the attitudes of diabetic patients regarding foot care as these have also been shown by other researchers to be vital before considering peer support (Jia et al., 2022; Qasim et al., 2021). Subthemes elucidated within this proposition were; perceptions of regularity of foot inspection, ability to manage foot care effectively, feelings about investing time and effort, motivation to adhere to recommended practices, and consequences of neglecting foot care. These sub-themes shed light on the psychological aspects of foot care adherence and resonate with previous research (Alharbi & Sulaiman, 2022; Helgeson et al., 2019; Rana et al., 2022; Taksande et al., 2017). The second meta-proposition are peer support strategies which explore the diverse mechanisms of support by peer mentors. Peer support strategies are key in ensuring deliberate effort in delivering support to the peers as this guarantees replicability, measurability and evaluation of effectiveness of the strategies. Under the second meta-proposition there were four propositions that emerged. First proposition within this meta-proposition, termed informational support, entails providing guidance on essential aspects of foot care, nutrition, medication management, and blood sugar control. Components such as the clarity of information, knowledge improvement, confidence in managing foot care, sufficiency of information, and participants' recommendations to others emerged as sub-themes that form integral elements of this proposition. These were benchmarked with previous studies (Ayele et al., 2019; Dahal & Hosseinzadeh, 2019; Gulentie et al., 2020; Marciano et al., 2019; Mohebi et al., 2018; Saleh et al., 2012). The second proposition under support strategies was emotional support which assesses the frequency and forms of emotional support, the coping mechanisms for managing diabetes-related stress, emotional resilience, the authenticity of support, an improved outlook, and the

development of emotional connections and understanding between mentors and mentees. These aspects resonate with researches that advocate to emotional support embedded in psychosocial support for chronic illnesses (Alessi et al., 2022; Diriba et al., 2023; Onyango et al., 2022; Rana et al., 2022). Third, instrumental support, emerged as proposition under the second meta-proposition of support strategies. It explores the tangible aid and services provided by peer mentors, encompassing various types of assistance, its practicality, helpfulness, impact on foot care management, enhancement of daily life, dependability of mentors, customization of support, confidence-boosting, and overall satisfaction levels. Research has been done on instrumental support in chronic illnesses and it delineates the gains that can be made by including it in peer mentor support (Aziz et al., 2018; Ghasemi et al., 2021; Haregu et al., 2023; Joensen et al., 2016; Liang et al., 2021). Lastly, proposition four, appraisal support, which proposes affirmation, feedback, and social comparison in the management of foot care emerged. This is supported by research in diverse setting which approve appraisal as a key element of psychosocial support (Chittooru et al., 2022; Ferrari et al., 2023; B. E. Fisher et al., 2012; Mphasha et al., 2022; Nimesh et al., 2019). Appraisal support evaluates the frequency, focus, constructiveness, benefits, positive influence on participants' approach, improvement in routines, motivation, accuracy in reflecting efforts, fostering self-worth, and its integral role in the overall diabetes management strategy (Tseng et al., 2022; Yin et al., 2015).

Thus, the PEER-CARE framework stands as a robust and comprehensive framework that can address the different aspects of peer support for foot care among diabetic patients. Its foundation lies in qualitative thematic analyses, offering valuable insights for a structured understanding and practical implementation of peer support strategies

in real-world scenarios. To evaluate the effectiveness of this model, a structured assessment questionnaire has been proposed. This questionnaire combines quantitative and qualitative data collection methods to comprehensively assess the impact of the PEER-CARE framework and ensure its continuous improvement based on actual clinical experiences and participant feedback.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study highlights the positive impact of peer support for foot self-care practices in prevention of diabetic foot complications and offers valuable insights into the factors influencing its effectiveness. The study also identifies specific outcomes from peer support strategies that contribute to improved diabetes foot self-care. The PEER-CARE FRAMEWORK was derived from qualitative analysis and it provides a structured framework for implementing peer support strategies in real-world contexts, with the potential to enhance foot self-care practices preventing diabetic foot complications.

6.1.1 Objective 1: Performance of foot Self- care Practices for Prevention of Foot Complications among patients with Diabetes Mellitus in Western Kenya

Peer support significantly improved foot self-care practices among patients in the intervention group compared to the control groups. Positive predictors of better foot care practices included a positive attitude towards foot care, self-evaluation of foot care practices, employment status and level of education.

6.1.2 Objective 2: Factors Influencing Effectiveness of Peer Support on Foot Self-care Practices for Prevention of foot Complications among Patients with Diabetes Mellitus in Western Kenya

Level of education, employment status, receiving informational support, receiving instrumental support and receiving appraisal support influenced the effect of peer support in performance of foot self- care practices.

6.1.3 Objective 3: Outcome of Support Strategies in Foot Self-care Practices for Prevention of Foot Complications among Patients with Diabetes Mellitus in Western Kenya

Outcome of peer strategies included: regularity of foot inspection, motivation to adhere to recommended practices, confidence in managing foot care, coping, emotional resilience, dependability of mentors, tailored support.

6.1.4 Objective 4: Peer Support Framework for Foot Self-Care Practices in prevention of foot Complications among Patients with Diabetes Mellitus

There was the proposal of PEER-CARE framework with a proposed measurement tool. The framework offers a structured approach to peer support strategies for diabetic foot care derived from focused group discussions and thematic analyses.

6.2 Recommendations

6.2.1 Objective 1: Performance of foot Self-care Practices for Prevention of Foot Complications among patients with Diabetes Mellitus in Western Kenya

Health institutions should incorporate peer support programs in diabetes care settings: Based on the study's findings, it is recommended to integrate peer support programs into diabetes care settings to improve foot self- care practices. These programs should focus on promoting a positive attitude toward foot care and self-evaluation.

6.2.2Objective 2: Factors Influencing Effectiveness of Peer Support on Foot Self-care Practices for prevention of Foot Complications among Patients with Diabetes Mellitus in Western Kenya

Health care institutions should enhance peer mentor training on support strategies: To maximize the impact of peer support, mentors should receive training in effective support strategies such as informational, appraisal and instrumental support.

6.2.3 Objective 3: Outcome of Peer Support on Foot Self-care Practices for Prevention of Foot Complications among Patients with Diabetes Mellitus in Western Kenya

Health care institutions should adopt a comprehensive approach to peer support in diabetes care programs that should encompass informational, emotional, instrumental, and appraisal support to maximize on the benefits of outcomes of all the support strategies. This ensures that patients receive holistic support that addresses both their practical and emotional needs.

6.2.4Objective 4: Proposed Peer Support Framework for foot self-Care practices among Patients with Diabetes Mellitus

Healthcare institutions should consider incorporating the proposed PEER-CARE framework as a structured approach for peer support in diabetic foot care. This framework grounded in focused group discussions and thematic analyses, provides valuable insights for designing and implementing effective peer support programs. The framework also provides a measurement tool that will contribute to the refinement and optimization of the PEER-CARE framework for quality improvement.

6.2.5 Further Research

To assess its effectiveness, healthcare providers should develop and utilize measurement tools based on the proposed model framework. Regular evaluations of the model's impact on diabetes management and prevention of diabetic foot complications can inform ongoing improvements and adaptations.

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APPENDICES

Appendix I: Copy of Consent Form for Peer Mentees

My name is Lucy Kageha Kavinguha. I am a Doctor of Philosophy in Nursing student from Masinde Muliro University of Science and Technology under the supervision of university lecturers Professor John Okoth and Dr. Tecla Sum of School of Nursing Midwifery and Paramedical Sciences of MMUST

Your participation in this study will provide useful information and enhanced understanding of this topic. You qualify for participation because you a diabetic patient without a current foot complication. You will be required to participate in the process, answer oral questions asked by the interviewee and fill a questionnaire. The total time involved in participation will be approximately 45 minutes. This is an ongoing study that will take approximately six months during which period I will reach out to you and evaluate your progress with regards to the study objectives.

You will be required to join a peer support group comprised of patients with diabetes and offer each other support as guided by the peer mentors. The study aims to determine if the peer support can be used as an intervention strategy to prevent foot complications.

Participation in this study is strictly voluntary. You may withdraw from the study at any point without any repercussion. Participation is will not influence the care you receive at the hospital. All data from this project are confidential and will be used for academic purposes and development of a foot care model only. There is minimal to no risk to participants in this study. If you have questions at any time during your participation, please contact me. If you have concerns, please feel free to decline from participation at any point in this project. By signing this consent form, you are agreeing that you read, or it has been read to you, and you fully understand the

contents of this document and are openly willing consent to take part in this study. Thank you for your assistance in this research study.

Lucy Kageha Kavinguha (Principal Investigator) 0714340621

Name (Initials) ----------

Signature of researcher ---------- date----------

Appendix II: Copy of Consent Form for Peer Mentors

My name is Lucy Kageha Kavinguha. I am a Doctor of Philosophy in Nursing student from Masinde Muliro University of Science and Technology under the supervision of university lecturers Professor John Okoth and Dr. Tecla Sum of School of Nursing Midwifery and Paramedical Sciences of MMUST

Your participation in this study will provide useful information and enhanced understanding of this topic. You qualify for participation because you are a diabetic patient who has been able to successfully manage their diabetes with minimal complications. You will be required participate in the process, answer oral questions asked by the interviewee and partly fill a questionnaire. The total time involved in participation will be approximately 45 minutes. This is an ongoing study that will take approximately six months during which period I will reach out to you and evaluate your progress with regards to the study objectives.

You will be required to join a peer support group comprised of patients with diabetes and offer each other support with you guiding the group as a peer mentor. The study aims to determine if the peer support can be used as an intervention strategy to prevent foot complications.

Participation in this study is strictly voluntary. You may withdraw from the study at any point without penalty. All data from this project are confidential and will be used for research purposes only. There is minimal to no risk to participants in this study. If you have questions at any time during your participation, please contact me. If you have concerns, please feel free to decline from participation at any point in this project. By signing this consent form, you are agreeing that you read, or it has been read to you, and you fully understand the contents of this document and are openly

willing consent to take part in this study. Thank you for your assistance in this research study.

Lucy Kageha Kavinguha (Principal Investigator) 0714340621

Name (Initials) ----------

Signature of researcher ---------- date----------

Appendix VII: Questionnaire

CLIENT UNIQUE NUMBER									

I. Sociodemographic Characteristics

1. What is your age in years? _____ years
2. What is your gender?

   □ Male

   □ Female

   □ Other

   □ Prefer not to say

3. What is your employment status?

   □ Employed

   □ Business

   □ Unemployed

   □ Retired

   □ Prefer not to say

4. What is your marital status?

   □ Single

   □ Married

   □ Divorced

   □ Widowed

   □ Prefer not to say

5. Do you have any other pre-existing health conditions?

   □ Yes

   □ No

   □ Prefer not to say

II. Disease related aspects

1. What type of Diabetes do you suffer from
   - Type 1
   - Type 2
   - Gestational diabetes
   - Late Onset type 1 diabetes

2. For how long have you had diabetes _____years

3. Have you ever suffered from a foot related diabetes complication?
   - Yes
   - No

4. If yes in 3 above, kindly state the type of foot complication

Appendix VIII: Client Exit Interview

CLIENT UNIQUE NUMBER									

I. Foot care perceptions

1. People with diabetes are at an increased risk of foot complications so they should inspect their feet daily Yes_____ No_____ What extend to do you agree with this statement?
   - □ Strongly Disagree
   - □ Disagree
   - □ Neither Agree nor Disagree (Neutral)
   - □ Agree
   - □ Strongly Agree
2. I believe that regular foot inspection is unnecessary unless there is discomfort or pain.Yes_____ No_____What extend to do you agree with this statement?
   - □ Strongly Disagree
   - □ Disagree
   - □ Neither Agree nor Disagree (Neutral)
   - □ Agree
   - □ Strongly Agree
3. I am confident in my ability to manage my diabetic foot care effectively.Yes_____ No_____What extend to do you agree with this statement?
   - □ Strongly Disagree
   - □ Disagree
   - □ Neither Agree nor Disagree (Neutral)
   - □ Agree
   - □ Strongly Agree
4. I feel that investing time and effort in preventive foot care is not worth the benefits it might bringYes_____ No_____.What extend to do you agree with this statement?
   - □ Strongly Disagree
   - □ Disagree
   - □ Neither Agree nor Disagree (Neutral)
   - □ Agree
   - □ Strongly Agree

5. I am motivated to adhere to recommended foot care practices to prevent diabetic foot complicationsYes_____ No_____.What extend to do you agree with this statement?

   - Strongly Disagree
   - Disagree
   - Neither Agree nor Disagree (Neutral)
   - Agree
   - Strongly Agree

6. I think that the consequences of neglecting diabetic foot care are often exaggeratedYes_____ No_____.What extend to do you agree with this statement?

   - Strongly Disagree
   - Disagree
   - Neither Agree nor Disagree (Neutral)
   - Agree
   - Strongly Agree

7. I receive adequate foot care related services from the hospital Yes_____ No_____What extend to do you agree with this statement?

   - Strongly Disagree
   - Disagree
   - Neither Agree nor Disagree (Neutral)
   - Agree
   - Strongly Agree

8. I have adequate information for foot care Yes_____ No_____

   What extend to do you agree with this statement?

   - Strongly Disagree
   - Disagree
   - Neither Agree nor Disagree (Neutral)
   - Agree
   - Strongly Agree

9. I have adequate resources for foot care Yes_____ No_____

   What extend to do you agree with this statement?

   - Strongly Disagree
   - Disagree
   - Neither Agree nor Disagree (Neutral)
   - Agree
   - Strongly Agree

10. I am able to perform self evaluation of my foot care practicesYes_____ No_____. To what extend to do you agree with this statement?

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

Satisfaction with peer support program

S. No	To which extend do you agree with the following statement (5 - Strongly agree 4 – Agree, 3 - Neither agree nor disagree, 2 – Disagree, 1- Strongly disagree)	1	2	3	4	5
1	My mentee and I are enjoying a high quality relationship.					
2	My mentee is effectively utilizing me as a peer mentor					
3	I am improving my ability to communicate effectively with others					
4	It is easy to talk to my mentee					
5	My mentee and I respect each other					
6	Both my mentee and I are benefiting from support relationship.					
7	I am more open minded and able to consider others' feelings					
8	The training I received prepared me for the role of a mentor					
9	I seek support from other peer mentors					
10	The peer support program runs smoothly					
11	I would recommend the peer support program to others					
12	I am gaining new skills.					
13	My mentor is always available whenever I need him/ her					
14	It is easy to talk to my mentor					
15	My mentor and I respect each other					
16	Both my mentor and I are benefiting from support relationship.					
17	I am able to better manage my diabetes					
18	I am gaining new skills through the peer support program.					

Appendix IX: Follow Up Questionnaire

CLIENT UNIQUE NUMBER									

A. Peer Support Strategies

I. Informational Support

1. How often do you receive informational support from your peer mentor?

- Daily
- Weekly
- Monthly
- Rarely
- Never

2. Rate the types of informational support that you receive from your peer mentor on a scale of 0 to 5 Where 0- none, 1 - Very few times 2 - somewhat few times, 3 - somewhat many times, 4 - many times, 5 - very man times.

No	Peer support (Tick ü in the appropriate box)	0	1	2	3	4	5
a	Foot care advice						
b	Nutritional advice						
c	Medication management advice						
d	Blood sugar management advice						
e	Others (Please specify: _____)						

3. Do you find the informational support received from your peer mentor to be helpful and accurate?

- Yes
- No
- Not Sure
- Not received any

4. Have you been able to apply the information received from your peer mentor effectively?

- Yes
- No
- Partially
- I haven't received any information

5. The information provided by my peer mentor is clear and understandable. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

6. The information received from mentorship has improved my knowledge of diabetic foot care. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

7. I feel more confident in managing my diabetic foot care after receiving informational support from my peer mentor. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

8. The informational support provided by my peer mentor is sufficient for my needs. 1 (Strongly Disagree) - 5 (Strongly Agree)

- □ Strongly Disagree
- □ Disagree
- □ Neither Agree nor Disagree (Neutral)
- □ Agree
- □ Strongly Agree

9. I would recommend the informational support from my peer mentor to other diabetic patients. 1 (Strongly Disagree) - 5 (Strongly Agree)

- □ Strongly Disagree
- □ Disagree
- □ Neither Agree nor Disagree (Neutral)
- □ Agree
- □ Strongly Agree

II. Emotional Support

1. How frequently do you receive emotional support from your peer mentor?

- □ Daily
- □ Weekly
- □ Monthly
- □ Rarely
- □ Never

2. In what forms do you typically receive emotional support from your peer mentor? (Select all that apply)

- □ Empathetic listening
- □ Encouraging words
- □ Affectionate support
- □ Reassurance
- □ Others (Please specify: _____)

3. Would you say that the emotional support provided by your peer mentor has positively impacted your overall well-being?

    - Yes
    - No
    - Not Sure

4. Have you faced any situations where you felt the need for more emotional support than was provided by your peer mentor?

    - Yes
    - No
    - Not Sure

5. The emotional support from my peer mentor helps me cope better with my diabetes-related stress. 1 (Strongly Disagree) - 5 (Strongly Agree)

    - Strongly Disagree
    - Disagree
    - Neither Agree nor Disagree (Neutral)
    - Agree
    - Strongly Agree

6. I feel more emotionally resilient since receiving support from my peer mentor. 1 (Strongly Disagree) - 5 (Strongly Agree)

    - Strongly Disagree
    - Disagree
    - Neither Agree nor Disagree (Neutral)
    - Agree
    - Strongly Agree

7. The emotional support provided by my peer mentor is genuine and sincere. 1 (Strongly Disagree) - 5 (Strongly Agree)

    - Strongly Disagree
    - Disagree
    - Neither Agree nor Disagree (Neutral)

- Agree
- Strongly Agree

8. The emotional support from my peer mentor has improved my outlook and attitude towards managing my diabetes. 1 (Strongly Disagree) - 5 (Strongly Agree)

   - Strongly Disagree
   - Disagree
   - Neither Agree nor Disagree (Neutral)
   - Agree
   - Strongly Agree

9. I feel more emotionally connected and understood due to the support from my peer mentor. 1 (Strongly Disagree) - 5 (Strongly Agree)

   - Strongly Disagree
   - Disagree
   - Neither Agree nor Disagree (Neutral)
   - Agree
   - Strongly Agree

III. Instrumental Support

1. How often do you receive instrumental support (tangible aid and services) from your peer mentor?

   - Daily
   - Weekly
   - Monthly
   - Rarely
   - Never

2. What types of instrumental support do you receive from your peer mentor? (Select all that apply)

- Assistance with daily tasks
- Help with accessing medical services
- Support with medication management
- Assistance with mobility
- Others (Please specify: _____)

3. Do you find the instrumental support received from your peer mentor to be practical and helpful?

- Yes
- No
- Not Sure

4. Has the instrumental support received from your peer mentor improved your ability to manage diabetic foot care effectively?

- Yes
- No
- Partially
- I haven't received any instrumental support

5. The instrumental support provided by my peer mentor significantly enhances my daily life. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

6. I can depend on my peer mentor for instrumental support when needed. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

7. The instrumental support from my peer mentor is tailored to meet my specific needs. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

8. Due to the instrumental support from my peer mentor, I feel more capable of managing my diabetes-related challenges. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

9. I am satisfied with the level of instrumental support I receive from my peer mentor. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

IV. Appraisal Support

1. How often do you receive appraisal support (affirmation, feedback, social comparison) from your peer mentor?

- Daily
- Weekly
- Monthly
- Rarely
- Never

2. In which areas do you primarily receive appraisal support from your peer mentor? (Select all that apply)

- Management of diabetes
- Foot care practices
- Lifestyle and dietary habits
- Medication adherence
- Others (Please specify: _____)

3. Do you find the appraisal support received from your peer mentor to be constructive and beneficial?

- Yes
- No
- Not Sure

4. Has the appraisal support received from your peer mentor positively influenced your approach to managing diabetic foot care?

- Yes
- No
- Partially
- I haven't received any appraisal support

5. The appraisal support provided by my peer mentor helps me to improve my diabetic foot care routines. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

6. I feel more motivated and encouraged to manage my diabetes well due to the appraisal support from my peer mentor. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

7. The feedback and affirmation from my peer mentor are accurate and reflective of my efforts in managing my diabetic foot care. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

8. The appraisal support from my peer mentor helps in fostering a sense of accomplishment and self-worth in my diabetes management journey. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

9. I value the appraisal support from my peer mentor and consider it an integral part of my diabetes management strategy. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

B. Factors Influencing Peer Support

I. Social Status

1. How would you describe your social status within your community?

- High
- Middle
- Low
- Prefer not to say

2. Do you believe your social status influences the level or type of peer support you receive?

- Yes
- No
- Not Sure

3. Have you ever felt that people of a different social status received more or better support within the peer support program?

- Yes
- No
- Not Sure

4. In your opinion, does your social status affect your ability to relate to and connect with your peer mentor and other participants in the program?

- Yes
- No
- Not Sure

5. My social status has a significant impact on the quality of peer support I receive. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

6. Individuals with higher social status are prioritized and receive better support in the program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

7. I feel that social status creates a barrier to open communication and sharing within the peer support program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

8. Social status differences among participants should be addressed to improve the effectiveness of the peer support program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

9. Equal support is provided to all participants regardless of their social status within the peer support program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

II. Personal Commitments

1. How often do your personal commitments (work, family, etc.) conflict with your participation in the peer support program?

- Always
- Often
- Sometimes
- Rarely
- Never

2. Have you ever had to miss a peer support session due to personal commitments?

- Yes
- No

3. Do you find it challenging to balance your personal commitments with your participation in the peer support program?

- Yes
- No
- Sometimes

4. Would flexible scheduling or virtual sessions assist you in better balancing personal commitments with program participation?

- Yes
- No
- Not Sure

Perceived impact of personal commitments on peer support

5. My personal commitments significantly hinder my ability to fully participate in the peer support program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

6. Balancing personal commitments with the peer support program is a source of stress for me. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

7. Adequate support and accommodations are provided to help manage conflicts between personal commitments and program participation. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

8. The peer support program needs more flexible scheduling options to accommodate participants' personal commitments. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

9. I am able to manage my time effectively to fulfill personal commitments while participating in the peer support program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

Perceived impact of sociodemographic aspects on level of peer support

10. My sociodemographic characteristics impact the type and level of support I receive in the program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

11. Differences in sociodemographic characteristics among participants enrich the peer support program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

12. I feel that people with similar sociodemographic characteristics understand my struggles better. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

13. The peer support program adequately addresses the diverse needs of participants with varied sociodemographic characteristics. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

14. I feel comfortable sharing and participating in the program irrespective of the sociodemographic characteristics of other participants. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

III. Similarities in Characteristics

1. How important is it for you to share similar characteristics (such as age, gender, or background) with your peer mentor or other participants?
   - Very important
   - Important
   - Neutral
   - Unimportant
   - Very unimportant
2. Have you experienced challenges in the peer support program due to differences in characteristics between you and your peer mentor or other participants?
   - Yes
   - No
   - Not Sure
3. Do you believe sharing more similarities in characteristics with your peer mentor or participants would enhance the support you receive?
   - Yes
   - No
   - Maybe

4. Would you prefer to be matched with a peer mentor who shares more similar characteristics with you?

- Yes
- No
- No preference

Perceived impact of similarity in characteristics and quality of peer support

5. Similarities in characteristics with my peer mentor enhance the quality of support I receive. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

6. Differences in characteristics with other participants have made it difficult for me to relate to them and share my experiences. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

7. Having a peer mentor with similar characteristics is crucial for building trust and open communication in the peer support program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

8. The program effectively accommodates the diverse characteristics of all participants, fostering inclusivity and mutual respect. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

9. Similarities in characteristics among participants create a supportive and cohesive environment in the peer support program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

A. Peer Mentor Characteristics

I. Experience

1. How many years of experience does your peer mentor have in providing support for diabetic foot care?

- Less than 1 year
- 1-2 years
- 3-4 years
- 5 years or more
- Not Sure

2. Do you believe your peer mentor's experience is sufficient to meet your support needs?

- Yes
- No
- Not Sure

3. Has your peer mentor's experience positively impacted your ability to manage diabetic foot care?

- Yes
- No
- Partially
- Not Sure

4. In your opinion, how important is the experience of a peer mentor in providing effective support?

- Extremely important
- Very important
- Moderately important
- Slightly important
- Not important at all

5. My peer mentor's experience significantly contributes to the effectiveness of the support provided. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

6. I feel more confident in managing my diabetic foot care due to the experienced guidance provided by my peer mentor. 1 (Strongly Disagree) - 5(Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

7. A higher level of experience in a peer mentor is crucial for addressing my individual needs and concerns. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree

- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

8. The experience of my peer mentor has enriched the learning and support environment of the program. 1 (Strongly Disagree) - 5 (Strongly Agree)
   - Strongly Disagree
   - Disagree
   - Neither Agree nor Disagree (Neutral)
   - Agree
   - Strongly Agree
9. The practical insights and knowledge shared by my experienced peer mentor have enhanced my understanding and management of diabetic foot care. 1 (Strongly Disagree) - 5 (Strongly Agree)
   - Strongly Disagree
   - Disagree
   - Neither Agree nor Disagree (Neutral)
   - Agree
   - Strongly Agree

II. Competence

1. How would you rate the overall competence of your peer mentor in providing support for diabetic foot care?
   - Excellent
   - Very Good
   - Good
   - Fair
   - Poor
2. Have you ever questioned the competence of your peer mentor based on the advice or support they provided?
   - Yes
   - No
   - Not Sure

3. Do you feel that the competence of your peer mentor meets your support needs?

- Yes
- No
- Not Sure

4. In your opinion, how crucial is the competence of a peer mentor in providing effective support?

- Extremely crucial
- Very crucial
- Moderately crucial
- Slightly crucial
- Not crucial at all

5. The competence of my peer mentor significantly impacts the quality of support I receive. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

6. I feel more assured and supported when my peer mentor demonstrates high competence in addressing my needs and concerns. 1 (Strongly Disagree) - 7 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

7. A competent peer mentor is essential for enhancing my knowledge and skills in managing diabetic foot care. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

8. My peer mentor's competence has enriched my experience and learning in the peer support program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

9. I am more likely to trust and follow the advice of a highly competent peer mentor. 1 (Strongly Disagree) - 5 (Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

A. Health System Factors

I. Hospital Policy

1. Are you aware of the hospital policies related to the peer support program?

- Yes
- No
- Partially Aware

2. Do you believe that the hospital policies are supportive of the peer support program and its participants?

- Yes
- No
- Not Sure

3. Have you ever experienced any challenges or limitations due to the existing hospital policies related to the peer support program?

- □ Yes
- □ No
- □ Not Sure

4. In your opinion, do the hospital policies need amendments to better support the peer support program and its participants?

- □ Yes
- □ No
- □ Maybe

5. The existing hospital policies effectively support and facilitate the running of the peer support program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- □ Strongly Disagree
- □ Disagree
- □ Neither Agree nor Disagree (Neutral)
- □ Agree
- □ Strongly Agree

6. Hospital policies create a conducive environment for participants to gain maximum benefit from the peer support program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- □ Strongly Disagree
- □ Disagree
- □ Neither Agree nor Disagree (Neutral)
- □ Agree
- □ Strongly Agree

7. Strict hospital policies hinder the flexibility and adaptability of the peer support program to meet individual needs. 1 (Strongly Disagree) - 5 (Strongly Agree)

- □ Strongly Disagree
- □ Disagree
- □ Neither Agree nor Disagree (Neutral)
- □ Agree
- □ Strongly Agree

8. Clear and supportive hospital policies are crucial for the success and effectiveness of the peer support program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- □ Strongly Disagree
- □ Disagree
- □ Neither Agree nor Disagree (Neutral)
- □ Agree
- □ Strongly Agree

9. Amendments in hospital policies can significantly enhance the experience and outcomes of the peer support program for participants. 1 (Strongly Disagree) - 5Strongly Agree)

- □ Strongly Disagree
- □ Disagree
- □ Neither Agree nor Disagree (Neutral)
- □ Agree
- □ Strongly Agree

II. Health Care Providers

1. What was the cadre of your primary health care provider in the hospital

- □ Consultant doctor
- □ General doctor
- □ Nurse
- □ Clinical officer
- □ Pharmacist
- □ Community health worker

2. How old can you rate your primary care provider

- □ Very young
- □ Young
- □ Middle age
- □ Old
- □ Very old

3. How would you rate the overall support received from health care providers within the peer support program?

- Excellent
- Very Good
- Good
- Fair
- Poor

4. Are the health care providers involved in the peer support program knowledgeable about diabetic foot care?

- Yes
- No
- Not Sure

5. Do health care providers play an active role in facilitating and supporting the peer support program sessions?

- Yes
- No
- Occasionally

6. Have you ever felt the need for more involvement and support from health care providers during the peer support sessions?

- Yes
- No
- Sometimes

7. In your opinion, are the health care providers approachable and available when you need support or have queries?

- Yes
- No
- Sometimes

8. Do you receive regular feedback and guidance from health care providers on managing your diabetic foot care?

- Yes
- No
- Occasionally

9. Do you believe that the health care providers are committed to the success of the peer support program?

- Yes
- No
- Not Sure

10. Have the health care providers addressed your individual needs and concerns adequately within the peer support program?

- Yes
- No
- Partially

11. How important is the role of health care providers in the success of the peer support program?

- Extremely important
- Very important
- Moderately important
- Slightly important
- Not important at all

12. Would you like to see any changes in the way health care providers participate in and support the peer support program?

- Yes
- No
- Maybe

13. The involvement of health care providers enhances the quality and effectiveness of the peer support program. 1 (Strongly Disagree) - 5(Strongly Agree)

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree (Neutral)
- Agree
- Strongly Agree

14. I feel more supported and confident in managing my diabetic foot care due to the active participation of health care providers. 1 (Strongly Disagree) - 5 (Strongly Agree)

- □ Strongly Disagree
- □ Disagree
- □ Neither Agree nor Disagree (Neutral)
- □ Agree
- □ Strongly Agree

15. A stronger collaboration between peer mentors and health care providers is needed for the success of the program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- □ Strongly Disagree
- □ Disagree
- □ Neither Agree nor Disagree (Neutral)
- □ Agree
- □ Strongly Agree

16. The guidance and feedback provided by health care providers are crucial for improving my diabetic foot care management. 1 (Strongly Disagree) - 5 (Strongly Agree)

- □ Strongly Disagree
- □ Disagree
- □ Neither Agree nor Disagree (Neutral)
- □ Agree
- □ Strongly Agree

17. Health care providers play an essential role in addressing the diverse needs of all participants in the peer support program. 1 (Strongly Disagree) - 5 (Strongly Agree)

- □ Strongly Disagree
- □ Disagree
- □ Neither Agree nor Disagree (Neutral)
- □ Agree
- □ Strongly Agree

Sno	Practice	Rating			
1	Do you examine your feet?	More than once a day	Once a day	4–6 times a week	Once a week or less
2	Do you check your shoes before you put them on?	Often	Sometimes	Rarely	Never
3	Do you check your shoes when you take them off?	Often	Sometimes	Rarely	Never
4	Do you wash your feet?	More than once a day	Once a day	Most days a week	A few days a week
5	Do you check your feet are dry after washing?	Often	Sometimes	Rarely	Never
6	Do you dry between your toes?	Always	Often	Sometimes	Rarely/ Never
7	Do you use moisturizing cream on your feet?	Daily	Once a week	Once a month	Never
8	Do you put moisturizing cream between your toes?	Daily	Once a week	Once a month	Never
9	How often are your toenails cut?	About once a week	About once per month	Less than once a month	Never
10	Do you wear open shoes (sandals, slippers, flip flops)?	Never	Rarely	Sometimes	Most of the time
11	Do you wear trainers/ Fitting sports shoes?	Never	Rarely	Sometimes	Most of the time
12	Do you wear lace-up shoes?	Never	Rarely	Sometimes	Most of the time
13	Do you wear pointed-toed shoes?	Never	Rarely	Sometimes	Most of the time
14	Do you wear flip-flops or mules?	Never	Rarely	Sometimes	Most of the time
15	Do you break in new shoes gradually?	Never/ Rarely	Sometimes	Most of the time	Always
16	Do you wear artificial fiber (e.g., nylon) socks?	Never	Rarely	Sometimes	Most of the time
17	Do you wear shoes without socks/ stockings/tights?	Never	Rarely	Sometimes	Often
18	Do you change your socks/stockings/tights?	More than once a day	Daily	4-6 times a week	Less than 4 times a week
19	Do you walk around the house in	Never	Rarely	Sometimes	Often

	bare feet?				
20	Do you walk outside in bare feet?	Never	Rarely	Sometimes	Often
21	Do you use a hot water bottle in bed?	Never	Rarely	Sometimes	Often
22	Do you put your feet near the fire/ heater?	Never	Rarely	Sometimes	Often
23	Do you put your feet on a radiator?	Never	Rarely	Sometimes	Often
24	Do you use corn remedies/corn plasters/paints when you get a corn?	Never	Rarely	Sometimes	Often
25	Do you put a dry dressing on a blister when you get one	Never	Rarely	Sometimes	Often
26	Do you put a dry dressing on a graze, cut or burn when you get one?	Never	Rarely	Sometimes	Often

Practice (Based on Nottingham Assessment of Functional Footcare 2015 - 26 criteria)

Status of the Foot for the participant

Code	Grade	Description	Score
WSG0	Grade 0	Intact skin	5
WSG1	Grade 1	Superficial ulcer	4
WSG2	Grade 2	Deep ulcer	3
WSG3	Grade 3	Ulcer involving bone	2
WSG4	Grade 4	Fore foot gangrene	1
WSG5	Grade 5	Full foot gangrene	0

Appendix IX: Focus Group Discussion Guide

1. Has peer support had any impact on your foot self- care practices?
2. Can you describe to me your experience in the peer support program
3. Would you advocate for peer support in management of diabetes foot care?
4. What would be your recommendations regarding peer support for diabetes foot care practices?

Appendix X: Key Informant Interview Guide

1. How is peer support offered in this health care facility?
2. How can you describe the informational support given to patients with diabetes to enable have appropriate foot care practices?
3. How can you describe the emotional support given to patients with diabetes to enable have appropriate foot care practices?
4. How can you describe the instrumental support given to patients with diabetes to enable have appropriate foot care practices?
5. How can you describe the appraisal support given to patients with diabetes to enable have appropriate foot care practices?
5. Would you advocate for peer support in management of diabetes foot care?
6. What would be your recommendations regarding peer support for diabetes foot care practices?

Appendix X: MMUST Ethical Approval Letter

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY

Tel: 056-31375
Fax: 056-30153
E-mail: ierc@mmust.ac.ke
Website: www.mmust.ac.ke

P. O. Box 190,
50100.
Kakamega,
KENYA

Institutional Ethics and Review Committee (IERC)

REF: MMU/COR: 403012 Vol 6 (01)

Date: February 22nd, 2022

To: Lucy Kageha Kavinguha

Dear Madam.,

RE: EFFECTIVENESS OF PEER SUPPORT AS A PRIMARY PREVENTION INTERVENTION STRATEGY FOR DIABETIC FOOT THERAPY COMPLICATIONS AMONG PATIENTS IN WESTERN KENYA

This is to inform you that ***Masinde Muliro University of Science and Technology Institutional Ethics and Review Committee (MMUST-IERC)*** has reviewed and approved your above research proposal. Your application approval number is **MMUST/IERC/017/2022.**The approval period is ***February 22nd, 2022-February 22nd, 2023.***

This approval is subject to compliance with the following requirements;

i. Only approved documents including informed consents, study instruments, MTA will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by ***MMUST-IERC.***
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 ***MMUST-IERC*** 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 ***MMUST-IERC*** within 72 hours
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days upon completion of the study to ***MMUST-IERC.***

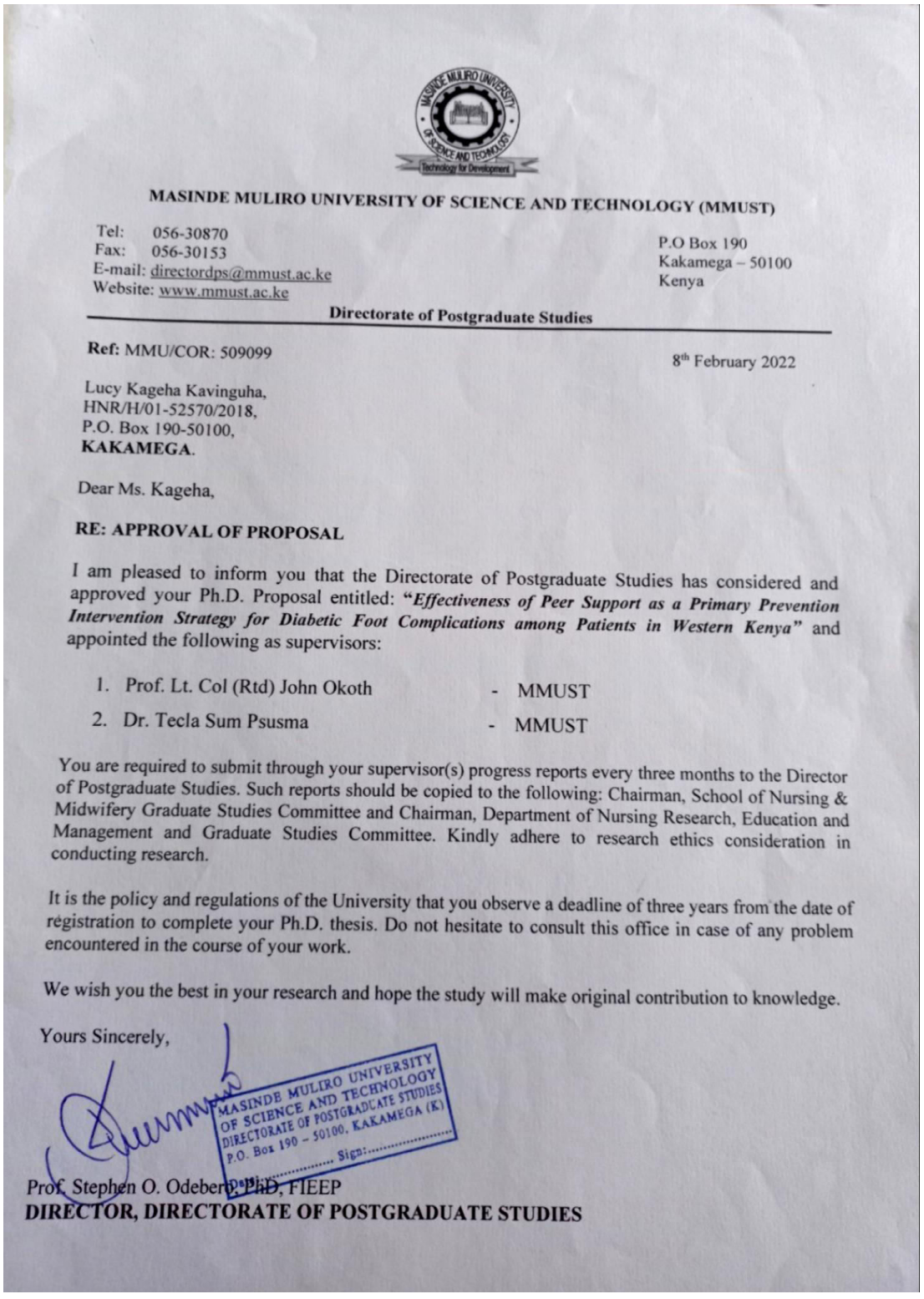
Prior to commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology and Innovation (NACOSTI) https://research-portal.nacosti.go.ke and also obtain other clearances needed.

Yours Sincerely,

Prof. Gordon Nguka (PhD)
Chairperson, Institutional Ethics and Review Committee

Copy to:
- The Secretary, National Bio-Ethics Committee
- Vice Chancellor
- DVC (PR&I)

Appendix XI: School of Graduate Studies Approval Letter



MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

Tel: 056-30870
Fax: 056-30153
E-mail: directordps@mmust.ac.ke
Website: www.mmust.ac.ke

P.O Box 190
Kakamega – 50100
Kenya

Directorate of Postgraduate Studies

Ref: MMU/COR: 509099

8th February 2022

Lucy Kageha Kavinguha,
HNR/H/01-52570/2018,
P.O. Box 190-50100,
KAKAMEGA.

Dear Ms. Kageha,

RE: APPROVAL OF PROPOSAL

I am pleased to inform you that the Directorate of Postgraduate Studies has considered and approved your Ph.D. Proposal entitled: ***"Effectiveness of Peer Support as a Primary Prevention Intervention Strategy for Diabetic Foot Complications among Patients in Western Kenya"*** and appointed the following as supervisors:

1. Prof. Lt. Col (Rtd) John Okoth - MMUST
2. Dr. Tecla Sum Psusma - MMUST

You are required to submit through your supervisor(s) progress reports every three months to the Director of Postgraduate Studies. Such reports should be copied to the following: Chairman, School of Nursing & Midwifery Graduate Studies Committee and Chairman, Department of Nursing Research, Education and Management and Graduate Studies Committee. Kindly adhere to research ethics consideration in conducting research.

It is the policy and regulations of the University that you observe a deadline of three years from the date of registration to complete your Ph.D. thesis. Do not hesitate to consult this office in case of any problem encountered in the course of your work.

We wish you the best in your research and hope the study will make original contribution to knowledge.

Yours Sincerely,

MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY DIRECTORATE OF POSTGRADUATE STUDIES P.O. Box 190 – 50100, KAKAMEGA (K) Sign:..... Date:.....

Prof. Stephen O. Odeberi, PhD, FIEEP
DIRECTOR, DIRECTORATE OF POSTGRADUATE STUDIES

Appendix XII: Nacosti Approval Letter

REPUBLIC OF KENYA

NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Ref No: **696793**

Date of Issue: **28/March/2022**

RESEARCH LICENSE

This is to Certify that Ms.. LUCY KAGEHA of Masinde Muliro University of Science and Technology, has been licensed to conduct research in Kisumu on the topic: EFFECTIVENESS OF PEER SUPPORT AS A PRIMARY PREVENTION INTERVENTION STRATEGY FOR DIABETIC FOOT COMPLICATIONS AMONG PATIENTS IN WESTERN KENYA for the period ending : 28/March/2023.

License No: **NACOSTI/P/22/16534**

696793

Applicant Identification Number

Director General
NATIONAL COMMISSION FOR SCIENCE,TECHNOLOGY & INNOVATION

Verification QR Code

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

Appendix XIII: JOOTRH IREC Approval Letter

COUNTY GOVERNMENT OF KISUMU
DEPARTMENT OF HEALTH

Telephone: 057-2020801/2020803/2020321
Fax: 057-2024337
E-mail: ercjootrh@gmail.com
Website: www.jootrh.go.ke
When replying please quote

JARAMOGI OGINGA ODINGA TEACHING & REFERRAL HOSPITAL
P.O. BOX 849
KISUMU

Ref: ISERC/JOOTRH/621/22

Date: 6th February, 2023

RE: APPROVAL: STUDY TITLE
EFFECTIVENESS OF PEER SUPPORT AS A PRIMARY PREVENTION INTERVENTION STRATEGY FOR DIABETIC FOOT COMPLICATIONS AMONG PATIENTS IN WESTERN KENYA.

REF: ISERC/JOOTRH/621/22

To: Lucy Kageha Kavinguha

Dear Lucy,

RE: STUDY TITLE

This is to inform you that JOOTRH ISERC has reviewed and approved your above research proposal. Your application approval number is ***ISERC/JOOTRH/621/22.*** The approval period is ***6th February, 2023 to 6th February, 2024.***

This approval is subject to compliance with the following requirements;

i. Only approved documents including (informed consents, study instruments, MTA) will be used
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by JOOTRH ISERC.
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 JOOTRH ISERC 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 JOOTRH ISERC within 72 hours.
v. Clearance for export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.

1

COUNTY GOVERNMENT OF KISUMU
DEPARTMENT OF MEDICAL SERVICES, PUBLIC HEALTH AND SANITATION

Telephone: 057-2020801/2020803/2020321
Fax: 057-2024337
E-mail: medsuptnpgh@yahoo.com
ceo@jaramogireferral.go.ke
Website: www.jaramogireferral.go.ke

When replying please quote
GEN/21A

Ref. No: .....

JARAMOGI OGINGA ODINGA TEACHING & REFERRAL HOSPITAL
P.O. BOX 849-40100
KISUMU

4th April, 2023
Date: .....

TO: Dr. Lucy Kagelia Kavinguha

Dear Lucy

RE: PERMISSION TO COLLECT DATA

Following approval of protocol titled "Effectiveness of Peer Support as a Primary Prevention Intervention Strategy for Diabetic Food Complications Among Patients in Western Kenya at Jaramogi Oginga Odinga Teaching and Referral Hospital", you are hereby permitted to proceed with the activity.

Thank you.

Yours sincerely

DEPUTY CEO/ DIRECTOR CLINICAL SERVICES
JARAMOGI OGINGA ODINGA TEACHING & REFERRAL HOSPITAL (JOOTRH)
P.O. BOX 849 - 40100, KISUMU
DATE.....

DR. DEDAN ONGONGA
DIRECTOR CLINICAL SERVICES
JOOTRH – KISUMU

Appendix IVX: Research Authorization Letter Kakamega County

REPUBLIC OF KENYA
COUNTY GOVERNMENT OF KAKAMEGA

OFFICE OF THE GOVERNOR
COUNTY SECRETARY AND HEAD OF PUBLIC SERVICE

Telephone: 056-31850/31852/31853
Website:www.kakamega.go.ke
E-mail:countysecretary@kakamega.go.ke

When replying please Quote

Ref No: CGK/OCS/GEN.CRR./04/VOL.5/215

County Government of Kakamega
P.O. Box 36-50100
KAKAMEGA

Date: 14th March, 2022

Lucy Kageha Kavinguha
Masinde Muliro University of Science & Technology
P. O. Box 190-50100
KAKAMEGA

RE: RESEARCH AUTHORIZATION

The above subject matter refers.

Following your authorization letter Ref. No.NACOSTI/P/22/16534 dated 28th March, 2022 by NACOSTI to undertake research on "**Effectiveness of Peer Support as a Primary Prevention Intervention Strategy for Diabetic Foot Complications among patients in Western Kenya**" for the period ending 28th March, 2023, I am pleased to inform you that you have been authorized to carry out the research on the same in Kakamega County.

It is therefore expected that you shall forward a copy of the thesis to this office.

Thank you.

COUNTY SECRETARY
KAKAMEGA COUNTY
P. O. Box 36 - 50100
KAKAMEGA

Dr. Lawrence Omuhaka, CBS
County Secretary and Head of Public Service

Copy to: H.E. the Governor