PATIENT'S ACCEPTABILITY OF COMPREHENSIVE COMMUNITY-BASED INTEGRATED CARE SERVICES FOR HIV AND NON-COMMUNICABLE DISEASES IN DAR ES SALAAM

Zenais Anthon Kiwale, BSc.

Master of Public Health Implementation Science Dissertation

Muhimbili University of Health Allied Sciences

October, 2024

Muhimbili University of Health and Allied Sciences
School of Public Health and Social Sciences

PATIENT'S ACCEPTABILITY OF COMPREHENSIVE COMMUNITY-BASED INTEGRATED CARE SERVICES FOR HIV AND NON-COMMUNICABLE DISEASES IN DAR ES SALAAM

By

Zenais Anthon Kiwale

A Dissertation Submitted in (Partial) Fulfillment of the Requirements for the Degree of Master of Public Health Implementation Science of Muhimbili University of Health and Allied Sciences

October, 2024

CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by the Muhimbili University of Health and Allied Sciences a dissertation entitled: **"Patient's acceptability of comprehensive community-based integrated care services for HIV and non-communicable diseases in Dar es Salaam"** in (partial) fulfillment of the requirements for the degree of Master of Public Health Implementation Science of the Muhimbili University of Health and Allied Sciences.

_____

Dr. Emmy Metta

(Supervisor)

_____

Date

_____

Dr. Theresia Ambrose

(Co-supervisor)

_____

Date

DECLARATION AND COPYRIGHT

I, **Zenais Anthon Kiwale,** declare that this dissertation is my original work and that it has not been presented and will not be presented to any other university for a similar or any other degree award.

Signature…….**Date**…..……

This Dissertation is copyright material protected under the Berne Convention, the Copyright Act 1999, and other international and national enactments on that behalf of intellectual property. It may not be reproduced by any means, in full or in part, except for short extracts in fair dealings, for research or private study, critical scholarly review, or discourse with an acknowledgment, without the written permission of the Directorate of Postgraduate Studies, on behalf of both the author and the Muhimbili University of Health and Allied Sciences.

ACKNOWLEDGMENT

I am deeply grateful to all those who have contributed to the completion of this dissertation.

First and foremost, I would like to express my deepest gratitude to my supervisors, Dr. Emmy Metta and Dr. Theresia Ambrose, for their unwavering support, invaluable guidance, and insightful feedback throughout this research journey. Their expertise and encouragement have been essential in shaping the direction and quality of this work.

I am also indebted to the National Institute of Medical Research for funding the final semester.

I would like to give special thanks to the Department of Epidemiology and Biostatistics for their assistance throughout my research.

I sincerely thank my colleagues and peers, particularly Babuali Ahmed, Dr. David Solomon, and Subira Kashinde, for their collaborative spirit through provoking discussions and moral support. Their companionship has made this academic pursuit both stimulating and enjoyable.

I want to acknowledge the crucial role of the participants in this study. Their cooperation and openness were vital for the data collection process, and their contributions have provided the foundation for this research.

I am especially grateful to my family and friends for their unconditional support and understanding, to my parents for their endless encouragement and belief in my abilities, and to my spouse for their patience and unwavering support during challenging moments.

Finally, I appreciate the assistance and encouragement of all the faculty and staff members at Muhimbili University, who have supported me in various ways throughout my academic journey.

Thank you all for your invaluable contributions and support.

DEDICATION

This dissertation is dedicated to my parents, Anthon Z. Kiwale and Yovita L. Mamku, whose unconditional love, support, and encouragement have been my foundation throughout this journey. Your sacrifices and belief in my dreams have made this accomplishment possible.

To my wife, Upendo Jackson, thank you for your patience, understanding, and unwavering support during the long hours and different challenges. Your love and partnership have been my constant source of strength.

To my children, Gabriel Zenais Kiwale and Gabriella Zenais, you are my inspiration and motivation. I hope this work serves as a testament to the importance of perseverance and dedication.

Finally, my mentors, Dr. Vivien Barongo, Dr. Elizabeth Shayo, Prof Sayoki Mfinanga, Dr Nyanda Ntinginya and my field supervisor, Dr. Faith Aikaeli, thank you for your invaluable guidance, wisdom, and support. Your belief in my potential has been a driving force in my academic pursuits.

ABSTRACT

Background: HIV is a global public health threat, affecting nearly 40 million people worldwide, but the majority are in low-and-middle-income countries. Currently, the incidence of Non-Communicable Diseases (NCDs) among people living with HIV is increasing, which complicates efforts in care and management for both commodities within communities. Despite the presence of community-integrated care initiatives for the management of such comorbidities, the acceptability of the intervention from patients' perspectives isn't well explored.

Study Objective: The study aimed to explore patients' perspectives on the acceptability of comprehensive community-based integrated care services for HIV and NCDs in Dar es Salaam, Tanzania.

Materials and Methods: This study employed a qualitative cross-sectional design with a phenomenological approach. Conducted at four community sites in Kinondoni Municipality, the study focused on patients enrolled in the INTE-COMM program with diagnoses of HIV, hypertension, or diabetes. Using purposive sampling, 16 participants were selected. Data were analyzed thematically following Braun and Clarke's six-step process, with Dedoose software facilitating systematic coding and organization.

Results: Positive attitudes toward community-integrated care, driven by reduced logistical burdens, enhanced accessibility, and strengthened patient-provider relationships was observed. Patients reported high satisfaction with the personalized and supportive care they received, underscored by effective communication, privacy, reduced social stigma experience before and minimal disruption to daily activities. Additionally, the proximity and convenience of service locations fostered a sense of empowerment and self-efficacy, allowing patients to actively engage in their healthcare with greater ease and confidence. The consistent medication availability and punctual service delivery contributed significantly to patient adherence and trust in the care model.

Conclusion: Strong patient acceptance of community-based integrated care for HIV and NCDs in Dar es Salaam, attributed to its accessibility, convenience, and supportive care model. Findings suggest that community-based care models can effectively meet the needs of patients with chronic conditions, particularly in resource-limited settings.

TABLE OF CONTENTS

CERTIFICATION i
DECLARATION AND COPYRIGHT ii
ACKNOWLEDGMENT iii
DEDICATION iv
ABSTRACT v
LIST OF TABLES x
LIST OF FIGURES x
ABBREVIATIONS xi
DEFINITION OF TERMS xii
CHAPTER ONE 1
1.0 INTRODUCTION 1
1.1 Background Information 1
1.2 Problem statement 4
1.3 Theoretical and Conceptual Framework 5
1.3.1 Theoretical Framework 5
1.3.2 Conceptual Framework 6
1.4 Rationale 7
1.5 Research Questions 8
1.5.1 Main Research Question 8
1.5.2 Specific Research Questions. 8
1.6 Study Objectives. 8
1.6.1 Main Research Objective 8
1.6.2 Specific Research Objectives 8
CHAPTER TWO 9
2.0 LITERATURE REVIEW 9
CHAPTER THREE 13
3.0 RESEARCH METHODOLOGY 13
3.1 Study design 13

3.2 Study area. 13
3.3 Study Population 14
3.4 Sampling process 14
3.5 Recruitment of participants 14
3.8 Trustworthiness of the research 17
3.9 Credibility 17
3.9.1 Dependability 17
3.9.2 Transferability 18
3.9.3 Researcher Reflexivity 18
3.10 Ethical consideration 18
CHAPTER FOUR 19
4.0 RESULTS 19
4.3.1 Summary of the study findings 20
4.4 Patient's affective attitudes towards the comprehensive community-based integrated care services 22
CHAPTER FIVE 29
5.0 DISCUSSION 29
5.1 Introduction. 29
5.2 Patient's affective attitudes towards the comprehensive community-based integrated care services. 29
5.3 Patient's perceived self-efficacy to participate in the comprehensive community-based integrated care services. 30
5.4 Patient's perceived burden to comply with the requirements of the comprehensive community-based integrated care services. 31
5.5 Study Limitation and Mitigation 32
CHAPTER SIX 33
6.0 CONCLUSION AND RECOMMENDATIONS 33
6.1 Conclusion 33
6.2 Recommendations 33

REFERENCE 35
APPENDICES 43
Appendix I: Consent Forms - English 43
Appendix II: Consent Form – Swahili 45
Appendix III: Interview Guide – English 47
Appendix IV: Interview Guide – Swahili 50
Appendix V: Ethical Clearance 53
Appendix VI: Permission Letter 55

LIST OF TABLES

Table 1: Demographic and Clinical characteristics of patients 20
Table 2: Deductive coding utilized to generate codes and themes from field data aligning with concepts from the Theoretical Framework of Acceptability.....21

LIST OF FIGURES

Figure 1: A conceptual framework for understanding patients' acceptability of the comprehensive community-based integrated care services for HIV and NCDs in Tanzania.....7

ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ARTs	Antiretroviral Therapy
HIV	Human Immunodeficiency Virus
IDI	In-depth interview
LMICs	Low- and Middle-Income Countries
NCDs	Non-Communicable Diseases
PLHIV	People Living with HIV
PHC	Primary Health Care
SDGs	Sustainable Development Goals
WHO	World Health Organization
TDF	Theoretical Domain Framework

DEFINITION OF TERMS

Community-Based: Refers to activities, services, or initiatives that are planned, operated, and managed by members of a local community, often with a focus on addressing local needs and leveraging local resources and knowledge.

Patients: Individuals diagnosed with HIV and NCDs who are recipients of integrated care services.

Stigma: is a societal phenomenon that entails labeling people according to their social characteristics (such as attributes, illnesses, and identities), and then subjecting them to social devaluation, rejection, and isolation.

Antiretroviral therapy: Refers to medications used to treat HIV/AIDS by suppressing the HIV virus, thereby reducing the viral load in the bloodstream.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background Information

HIV is a global public health threat, affecting nearly 40 million people worldwide as of 2021 (1). Global statistics have shown that approximately 76% of people living with HIV (PLHIV) are getting treatment and care (1). In Tanzania, approximately 96% of PLHIV have been initiated on antiretroviral treatment (ART), with recent reporting in 2021 indicating that 98.9% of those on treatment have been virally suppressed (2,3).

Advancements in ART technology and therapy have been noted as having resulted in an increase in adherence to treatment among the PLHIV (4). Such an adherence trend has been found to be contributed by a reduction in the undesired side effects of the drug (i.e., ART), such as nausea, memory loss, hallucinations, depression, and skin rashes. These effects were noted as being common in the previous regimes (10). ART treatment has contributed to an increase in the life expectancy or the survival rates and quality of life (QoL of the PLHIV (11). However, in recent times, the increase in life expectancy has been threatened by both the emergence and an increase in the incidences of non-communicable diseases (NCDs) among the PLHIV (9).

Research evidence has revealed that PLHIV are at risk of developing NCDs, including diabetes, cervical cancer, hypertension and other cardiovascular diseases (CVDs), as compared to those without HIV (5–7). The scaling up of ART use with positive outcomes on the user's life expectancies meanwhile continuing to live with the virus itself has been linked with risks to NCDs in the PLHIV (6,8). Specifically, there has been several reports suggesting emergence of (CVD) for example, atherosclerosis that are linked with the damage on blood vessels induced by the virus (7). From another angle, ageing is also found to have become more prominent as life expectancy increases due to ART. This means that the longer the period of living with the virus, the more the PLHIV end up facing the risk of developing NCDs in old age (6,9). Currently, in Tanzania, the burden of NCDs among the PLHIV is estimated to be around 14% as per a representative study that was conducted in a clinical setting in the Dar es

Salaam region (10). Similar studies have reported high instances of NCD such as cervical cancer prevalence among the women affected by with HIV in the country. (11).

Fast paced emergence of NCDs among PLHIV has prompted for need to integrate care and treatment for the two group of conditions to better meet the special needs of the group without compromising the treatment outcomes of suppressing viral load (8). In the year 2023, a global report published by the World Health Organization (WHO) indicated the at integration of NCD care within Primary Care a lagging and therefore impacting negatively on the goal of attaining universal health coverage (UHC). Despite the lack of official published information on the state of integration of NCD care with HIV care, an obvious observation can be made in Tanzania where efforts of integration are at an infancy stage. Furthermore, current efforts have focused more on provider-based model for integration NCD and HIV care among PLHIV and not the community model which has greater impact on influencing behaviour change and facilitating enablers of attaining better outcomes for both two disease conditions.

Comprehensive community based NCDs and HIV integrated care model is an all-encompassing strategy to healthcare that aims to offer a variety of services under one coordinated roof, the typical services include those involving diagnosis, treatment, and management of different NCDs concurrently with those management of HIV at the community level (12). According to the WHO's 2023 report, merging the services that could have otherwise been provided individually, is a strategy has the potential to increase the effectiveness, accessibility, and the quality of healthcare and therefore contributed toward the UHC goal's attainment (13). Delivery of integrated community-based care (CBC) for NCDs and HIV can be implemented at any stage in the disease management continuum from disease screening and diagnosis to treatment and care (12).

In Tanzania, CBC interventions for HIV and NCDs are aimed at the provision of comprehensive healthcare services closer to where patients live, thereby increasing accessibility and improving health outcomes. These interventions typically involve a range of activities and services that are modified in ways that can meet the requirements for the residents who are HIV positive and those who have illnesses associated with/caused by (NCD), diabetes, hypertension, other CVDs, and cervical cancer, as mentioned before (REF).

Experience from several countries has shown that, patients can play a crucial role if carefully and strategically engaged in the activities of attending regular community visits at selected community sites, disease management, adherence to medication regimens, health talks, community mobilization, logistics coordination, screening, and dispensing (14). Another critical role of patients is to act as peers, which influences a self-driven model of service demand, delivery, and utilization at the community level (15). For these roles to be achieved, patients' perceptions, attitudes, and perspectives toward the integrated services offered are vital since they are critical in determining the acceptability of CBC services (14). For example, a study by Venables *et al.,* 2016 reported the acceptability of community-integrated services promoting medicine adherence among PLHIV with NCDs. In this study, acceptability was influenced by the perceived reduction in the burden of time and the workload when services were delivered in an integrated manner and at the community level as compared to the original act of delivering them in the health care facilities entertaining long queues of the clients (16,17). Another study in a comparable setting in Uganda examined the impact of community-integrated care on the QoL of individuals with NCD. At the same time, those who are also living with HIV found a 31% increase in QoL when focusing on environmental, social, and physical relationships (18). Both consecutive studies concluded that CBC significantly lowered stigma and improved effective social networks, increasing acceptability (16,18).

1.2 Problem statement

In Tanzania, approximately 96- 98% of the PLHIV had received ART as of 2021 (2,3). Advancement of ART technology and adherence was found to have contributed to the improvement in QoL of each individual among the PLHIV (4,6,22). This achievement is, however, threatened by the emergence of NCDs. For example, one recent report from a study done in selected clinical settings in Dar es Salaam indicated an estimated 14% prevalence of NCDs among the PLHIV (10). Given the medical attention they need for their health status, the PLHIV, concurrently with NCDs really need special care and handling, and therefore the types of care/services needed to be delivered and acceded by such individual in integrated manners so that desired impacts of services in terms of a significant reduction in the cost of accessing them as well as improved quality of the services concerned are eventually appreciated by the patients is critical (29).

Tanzania's HIV Management Guideline directs an integrated approach to community diagnosis and management of HIV along with diabetes, hypertension, and NCDs (24). Despite the implementation of such a guideline and the advocacy of the proposed initiatives, little focus has been exerted by the scientific community in evaluating the acceptability of community-based models for integrating NCDs with HIV care and management in the country (25). Patients' acceptability of integrated HIV-NCD services means having knowledge and generally positive perceptions, experiences and attitudes towards received services (26). Shayo *et al.,* 2022 in the study on the acceptability of integrated HIV-NCD facility-based services, found that patients had positive attitudes which were translated to high acceptability (19). A scoping review by Singh et al., 2021 with 11 studies conducted in Sub-Saharan Africa, reported positive patients' perspectives and experiences, which translates to the acceptability of integrated HIV - NCD care services being related to reducing health and travel costs, being more person-centered and patient-focused which reduced HIV related stigma (27). Another review focusing on CHWs reported patients' perspectives of increased stigma in integrated HIV-NCD services, which was perceived to be resulted from CHWs being part of the same community they serve (28). A study in a similar context by Venables *et al.,* 2016 reported perceptions of less burden of time and workload in integrated services offered at the

community level were reported to be more associated with the acceptability of community-based intervention compared to the facility where long queues were a barrier (16).

In Tanzania, however, issues of individual or community perceptions and, in particular, the patients' perspectives on CBC have yet to be extensively documented. With its counterpart, the facility-based model, Shayo et al., 2022 reported positive attitudes with high acceptability of services (19). Studies focusing on community-based HIV services, such as peer initiatives and community outreaches, have reported positive perceptions of acceptability which induced their success in improving adherence to ART, testing, case identification and elicitation, and reducing stigma (20). From the available studies in the country, it can be deduced that no study has focused on integrated community-based services for HIV and NCDs. Currently, there is only one protocol for a cluster randomized trial targeting to engage in the implementation of integrated community-based care models for NCDs and HIV and evaluate it against the standard facility-based models (21).

Studies focusing on patients' perspectives of the acceptability of HIV-NCDs integrated services exist only region-wise, and within the country, the primary focus has been more on facility-based models. This study, therefore, aimed to fill this information gap by providing a comprehensive exploration of the implementation acceptability of community-based integrated HIV-NCD services from the perspectives of patients and clients. Information from this study informs tailored services that meet clients' needs and strengthen community-based models, which are cost-efficient compared to facility-based models.

1.3 Theoretical and Conceptual Framework

1.3.1 Theoretical Framework

The study utilized the Theoretical Framework of Acceptability (TFA) by Sekhon et al., 2017 (29) to explore patients' perspectives on the acceptability of healthcare interventions. The TFA was chosen because it offers a structured approach to understanding patient engagement in the interventions. This framework consists of seven key constructs that help capture diverse aspects of acceptability. The first construct, *Affective Attitude*, examines emotional responses to the intervention and their experience during participation. *Burden* considers the perceived

effort and challenges associated with participating in the intervention. *Ethicality* assesses the extent to which the intervention aligns with personal values and beliefs. *Intervention Coherence* focuses on understanding of the intervention's purpose and procedures, which can affect willingness to engage. *Opportunity Cost* explores any sacrifices or trade-offs perceived as necessary to participate in the intervention. *Perceived Effectiveness* reflects the belief in the intervention's ability to achieve its intended health goals. Finally, *Self-Efficacy* evaluates confidence in their capacity to engage with and follow through on the intervention. Together, these constructs enabled a comprehensive examination of the factors influencing acceptability, capturing the emotional, practical, ethical, and cognitive dimensions of patients engaged in the intervention.

1.3.2 Conceptual Framework

Building on the TFA, this study focused on three constructs—*Affective Attitude*, *Self-Efficacy*, and *Burden*—to shape its conceptual framework. The *Affective Attitude* construct was used to examine patients' feelings and emotional responses toward participating in community-based integrated services (CBIS) for HIV and NCDs, particularly considering how these services align with their personal values, norms, and experiences. The *Self-Efficacy* construct assessed patients' confidence in their ability to adhere to the program's recommendations. This included examining participants' perceived capability, determination, and sense of control in meeting the requirements of the community-based integration program for HIV and NCDs. Finally, the *Burden* construct explored patients' views on the perceived effort needed to engage with the intervention, encompassing practical aspects like time, financial costs, and other resources required to participate effectively. Through these constructs, the study aimed to gain a comprehensive understanding of patients' acceptability of community-based integrated services for managing HIV, diabetes, and hypertension, capturing both the challenges and motivations influencing their engagement in this care model.

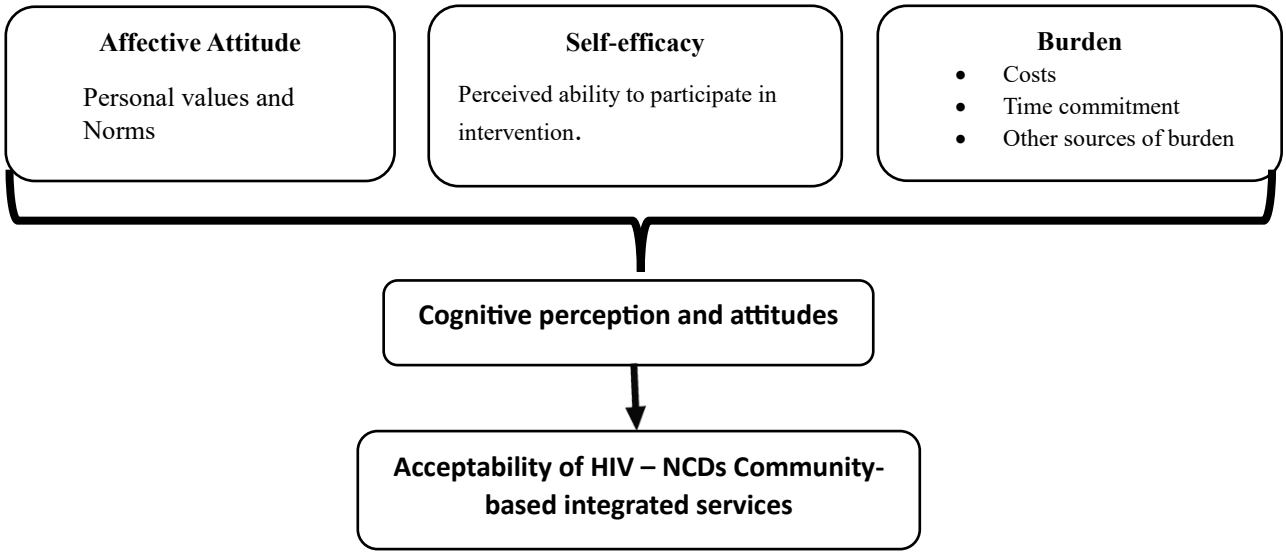


Figure 1: A conceptual framework for understanding patients' acceptability of the comprehensive community-based integrated care services for HIV and NCDs in Tanzania.

1.4 Rationale

This study on the acceptability of community-based integrated care for HIV and non-communicable diseases (NCDs) in Dar es Salaam is vital for several key stakeholders. Patients, the primary beneficiaries, gain from services designed to improve access and support effective disease management for HIV, hypertension, and diabetes. Understanding their experiences helps in developing more tailored and accessible care. Healthcare providers and community health workers also benefit from insights into patients' emotional, practical, and logistical challenges, enabling them to refine care delivery and enhance patient-provider communication. For policymakers and program planners, the study provides essential data on patient needs and barriers, supporting informed decisions on resource allocation, infrastructure improvements, and program design. Public health researchers and academics can use this study to advance patient-centered care knowledge, benefitting similar populations and informing health curricula. NGOs and international health agencies will find this research valuable for scaling integrated care initiatives and aligning interventions with local needs. Finally, local and national government bodies benefit by using these findings to develop

policies prioritising integrated care, optimizing resources, and supporting long-term health outcomes for those managing chronic diseases within their communities.

1.5 Research Questions

1.5.1 Main Research Question

How acceptable are the comprehensive community-based integrated care services for HIV and NCDs among patients in Dar es Salaam?

1.5.2 Specific Research Questions.

1. What are the patients' affective attitudes towards the comprehensive community-based integrated care services for HIV and NCDs in Dar es Salaam?
2. What is the patient's perceived self-efficacy in participating in the comprehensive community-based integrated care services for HIV and NCDs in Dar es Salaam?
3. What are the patient's perceived burdens to comply with the requirements of comprehensive community-based integrated care services for HIV and NCDs in Dar es Salaam?

1.6 Study Objectives.

1.6.1 Main Research Objective

To explore patients' acceptability of the comprehensive community-based integrated care services for HIV and NCDs in Dar es Salaam.

1.6.2 Specific Research Objectives

1. To explore patient's affective attitudes towards the comprehensive community-based integrated care services for HIV and NCDs in Dar es Salaam.
2. To explore patient's perceived self-efficacy in participating in the comprehensive community-based integrated care services for HIV and NCDs in Dar es Salaam.
3. To assess patient's perceived burden to comply with the requirements of the comprehensive community-based integrated care services for HIV and NCDs in Dar es Salaam.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Affective attitudes towards the comprehensive community-based integrated care services for HIV and NCDs

Attitudes are determined by the subjective assessment that directs behaviors and behavioral reactions (30). Integrated care models are increasingly popular globally to address populations' complex health needs. By bridging the gaps between managing communicable and non-communicable diseases, these models aim to improve patient outcomes and enhance the effectiveness of the healthcare system. For such integrated services to be implemented effectively, it is imperative to comprehend patients' attitudes toward them (31)**.**

To improve efficiency and personalization in the management of non-communicable illnesses, comorbidities, and multimorbidity in rural and urban sub-Saharan Africa, new and affordable therapies targeting HIV, hypertension, and diabetes are required (32). In Niger, support for an integrated approach is being cultivated within a community-based program that utilizes current community structures such as village commissions, ward committees, and elders' gatherings (33).

Research on HIV and NCD integration is being conducted in Tanzania; patients' providers maintained an effective and favorable attitude toward the integrated care delivery model throughout the study period. More exposure to service integration, contentment with clinic layout and seating arrangements, and the delivery of medical care services were all cited as reasons for this favorable response (19). Patients exhibit positive attitudes towards integration, which tend to increase with increased exposure to the integrated care model. Additionally, most patients express satisfaction with the approach, particularly appreciating the convenience of receiving all services in a single clinic setting (19).

Regardless of the integration strategy used, the growing number of people with non-communicable diseases (NCDs) can be effectively served by using the information gathered from HIV care models and adjusting present systems and resources. To enable managers and policymakers to fully address all chronic care needs, operational research is necessary to explore the viability of expanding and widening effective HIV and NCD integration models

(34). However, in Tanzania, the INTE-COMM model is currently treating patients with HIV, diabetes, and hypertension in the community through the devolution of NCD medicine delivery, health monitoring, and lifestyle counselling. This approach, developed in Tanzania and Uganda, aims to generate data that can be applied to various community contexts in sub-Saharan Africa (SSA) and beyond (34).

2.2 Perceived self-efficacy to participate in the comprehensive community-based integrated care services for HIV and NCDs

Globally, the concept of patient's perceived self-efficacy in participating in comprehensive community-based integrated care services for HIV and NCDs is gaining attention (35). Self-efficacy is the conviction that one can carry out the actions required to achieve particular performance goals. It conveys assurance in one's capacity to control one's incentives, actions, and social surroundings (35). Studies have shown that higher levels of self-efficacy are associated with better health outcomes and improved quality of life (35). For instance, a study on newly qualified physicians in Nigeria found that their perceived self-efficacy in practicing comforting care was advanced in family involvement and pain and symptom management (35). In another study conducted in the UK, the Integration of intervention programs for different chronic diseases was made possible by the realization that all chronic illnesses require the same self-management skills (36). Expert Patients is one program that focuses on universal self-management exercises for teams with a variety of diagnoses of chronic illnesses. Exercise, pain, sadness, diet, goal-setting, communication, and behavioral contracting are all successfully improved by integrated programs, which have been applied effectively in many nations (36). Also, the study conducted in Cambodia shows that the inclusion of PLH in a program with patients suffering from diabetes and hypertension lessens stigma against PLH and promotes effective utilization of medical resources. Documented summaries of self-management strategies for chronic illnesses show they include similar components (37).

In the African context, the importance of self-efficacy in healthcare is also recognized (38). A study in Nigeria highlighted the impact of cultural and religious factors and socioeconomic conditions in a resource-constrained environment on the self-efficacy perception of newly

qualified physicians in practicing palliative care (35). Another study emphasized the need to understand better the active components required for effective self-management support and how these might be delivered within primary care (38). According to the study, interventions should be customized to the patient's needs. They could include methods for increasing the patient's understanding of their condition or course of treatment, autonomous symptom monitoring, promoting self-treatment with a customized action plan in response to worsening symptoms or exacerbations, psychological coping and stress management techniques, and fostering greater accountability for medication adherence and lifestyle decisions (41).

While specific literature on patients perceived self-efficacy to participate in the comprehensive community-based integrated care services for HIV and NCDs in Tanzania is limited, there are relevant studies conducted in similar contexts. For instance, a study conducted in Nigeria, which shares similar socio-cultural and socio-economic variables with Tanzania, offers valuable insights (35). The study found that socioeconomic conditions in a setting with limited resources and cultural and religious concerns impacted newly certified physicians perceived self-efficacy and readiness to practice palliative care (35). With culturally and contextually relevant palliative care training initiatives, these findings may be transferable to the Tanzanian environment and contribute to acquiring suitable knowledge, skills, and attitudes among recently certified physicians (35). Further research is needed to explore this topic, specifically in the Tanzanian context.

2.3 Perceived burden to comply with the requirements of the comprehensive community-based integrated care services for HIV and NCDs in Tanzania

Successful management of chronic health conditions requires substantial and often complex behavioral changes by patients. The concept of "patient burden" encompasses the multifaceted challenges individuals may encounter throughout this process, including the workload of self-management, logistical barriers, financial strain, and psychological distress (39). Research consistently demonstrates that a high perceived burden is negatively related to treatment adherence, excellence of life, and health outcomes for patients with an extensive diversity of chronic illnesses (40). Understanding and addressing patient-perceived burdens are therefore

critical for optimizing models of care, particularly those catering to the complexities of multiple chronic conditions.

Integrated care models, which consolidate the management of multiple chronic diseases into a single setting, aim to improve care coordination, efficiency, and patient experience (41). However, the potential impact of integrated care on patients' perceived burden is a crucial area of investigation. While such models offer advantages like fewer clinic visits and the potential for stigma reduction, they might also create new burdens for patients. Studies suggest that navigating multiple healthcare providers, managing complex treatment schedules, and potential confidentiality concerns can contribute to these burdens (41). Investigating how burdens shift or evolve in the context of integrated care, especially for patients with HIV and NCDs, is vital for designing sustainable and patient-centered models.

The context of sub-Saharan Africa presents unique challenges influencing patients' perceived burdens within chronic disease management and integrated care. Resource constraints, including insufficient healthcare infrastructure, medication stockouts, and workforce shortages, can increase patient logistical and financial hurdles (42). Social stigma around chronic illnesses, particularly HIV, further contributes to patients' burdens (43). These challenges are amplified within integrated care models, requiring careful assessment to understand how patients perceive and negotiate these burdens in the quest for managing multiple health conditions.

Tanzania exemplifies the need to examine patient-perceived burdens within integrated community-based care for HIV and NCDs. Structural factors like long travel distances to clinics, economic inequities, and the lingering social stigma of certain diseases likely impact how burdensome integrated care may feel for patients (50). Additionally, a deeper understanding of how traditional beliefs about disease and healing might shape patient perceptions of the requirements for integrated care is necessary (43). While initial studies indicate general satisfaction with integrated HIV/NCD services in Tanzania, some patients raise concerns about a lack of privacy in clinical settings and the challenges of managing complex medication schedules.

CHAPTER THREE

3.0 RESEARCH METHODOLOGY

3.1 Study design

The study adopted a qualitative cross-sectional design with a phenomenological approach to explore patients' acceptability of community-based integrated care services for HIV and non-communicable diseases (NCDs) in Dar es Salaam. This design facilitates an in-depth examination of participants' lived experiences and perceptions, aligning to understand subjective interpretations and experiences related to healthcare. Phenomenological experts suggest that individuals derive meaning from real-life aspects shaped by multifaceted factors, including psychological, cultural, and social influences (44). This approach was ideal for gaining insight into participants' attitudes toward integrated care, allowing the study to explore complex personal and contextual factors influencing acceptability across diverse patient groups (45).

3.2 Study area

The study was conducted in four sites within Kinondoni Municipality: Magomeni, Tandale, Mwananyamala 1, and Mwananyamala 2. These sites, are part of the INTE-COMM program and were selected based on their established experience with community-integrated services for HIV and NCDs, enabling participants to provide informed insights on service acceptability. This area selection ensured accessibility, community support, and variation in participant backgrounds, enhancing the study's representativeness. A survey done in 2016 covering 1831 recruited individuals of male and female gender noted that 63.3% had hypertension, and of these, 51% were unaware of being hypertensive (46). A previous study involving several rural and urban districts in Tanzania also found Kinondoni district to be among the urban districts, with a considerable proportion of the resident women having gestational diabetes mellitus (GDM), but many did not know their condition and the risk factors (47).

3.3 Study Population

The study population consisted of patients actively participating in the INTE-COMM program who were diagnosed with HIV, hypertension, or diabetes. This inclusion criteria ensured that all participants had firsthand experience with integrated care services, allowing the study to capture relevant, informed perspectives on acceptability.

3.4 Sampling process

A purposive sampling was used to select a community-integrated site. 16 participants were selected from the four community sites. Each site provided four participants, including patients who had stayed actively longer in the INTE-COMM program. Those diagnosed with HIV, hypertension, or diabetes were prioritized. This sampling strategy enabled the collection of in-depth data that facilitated understanding the patient acceptability of comprehensive community-integrated care services.

3.5 Recruitment of participants

Participants were approached during their clinic visits by qualified research assistants in collaboration with study nurses and invited to participate in the study. Each study site contributed four participants adhering to the diversity of the population. Participants who agreed to participate in the study were thoroughly briefed about the objectives of the study and confidentiality agreements. This ensured that the participants understood the purpose of this research. All participants in this study agreed to take part voluntarily and were adequately connected to the ongoing INTERCOMM program. After obtaining informed consent in writing, participants were interviewed in special rooms at the study sites to ensure confidentiality and build rapport in that participants would feel free to discuss any relevant issues, including their attitudes towards health care in general.

3.6 Pretesting of data collection tools

IDI guide for collecting data was piloted among three patients with HIV, Diabetes and hypertension who were receiving community services at the Kimara site in Ubungo Municipal. During the pilot, we sought feedback from participants regarding the tool, identifying questions that posed difficulty or lacked clarity. Subsequently, the research team convened to review the pilot testing outcomes and made necessary revisions to the interview guide to produce the final version. The interview guide comprised various questions that explored patient acceptability of community-based integration care services. These questions were designed to extract themes from the Theoretical Framework of Acceptability" (TFA) by Sekhon, Cartwright, and Francis (2017).

3.7 Data collection

Data Management

All interviews were recorded electronically and transferred to a secure computer. Each file was assigned an anonymous identifier and stored in a password-protected folder. Transcribed and translated narratives were similarly safeguarded and stored in password-protected electronic files or locked hard drives. This rigorous data management protocol maintained high confidentiality and privacy, restricting data access solely to the research team. All recorded and collected data were securely kept in an area accessible only to authorized research personnel.

Data Analysis

The study's data analysis followed a structured thematic analysis approach, which included familiarizing the data, generating initial codes, identifying themes, reviewing themes, defining and naming themes, and generating the final report. The detailed steps are as follows:

Familiarization with the Data: the initial step involved thoroughly engaging with the dataset to develop an in-depth understanding. This process required multiple reviews of all collected data, including transcripts and related notes. Researchers engaged with the data by reading and re-reading it, noting recurring patterns, initial thoughts, and interesting observations. Listening

to audio recordings and cross-referencing them with transcripts helped capture nuanced participant narratives, such as variations in tone, emphasis, and content, forming a foundational understanding of participant responses.

Generating Initial Codes: after familiarization, researchers systematically coded the dataset by organizing it into meaningful segments, each labelled with a relevant "code." This process involved examining each data segment for content relevant to patient acceptability of integrated care services and assigning short descriptive labels, or codes. For example, phrases referring to ease of access or convenience in attending appointments were coded as "convenience" and "accessibility." Coding software such as Dedoose facilitated accurate coding and easy tracking of code frequency and context.

Searching for Themes: with initial codes generated, researchers grouped similar codes into broader categories, or "themes." This step involved identifying patterns among the codes to establish coherent themes encapsulating aspects of patient acceptability. For instance, codes related to "patient comfort," "time efficiency," and "service accessibility" were grouped under a broader theme, tentatively named "service convenience." The researcher conducted iterative reviews to assess code relationships and refine potential themes.

Reviewing Themes: the researcher then reviewed each theme to refine and validate it, ensuring it accurately represented the data with adequate supporting evidence. This process involved assessing themes for coherence and distinction at the coded data and entire dataset levels. Broad themes were subdivided, and overlapping themes were merged or redefined to ensure clarity. This review process was crucial to confirming that each theme was well-supported, internally consistent, and reflective of patient acceptability within the integrated care context.

Defining and Naming Themes: Once themes were finalized, the researcher defined and named each to ensure it represented its content. Each theme was assigned a distinct title and concise definition to capture its central concept. For example, "Patient-Provider Interaction" was defined to encompass all data relevant to the dynamics of the client-provider relationship, excluding unrelated information. Defining each theme's scope and focus enhanced the organization and clarity of the final report.

Generating the Report: The final step involved generating a comprehensive report and presenting findings in a structured and insightful manner. Each theme was discussed in detail, providing a narrative that directly addressed the research question on patient acceptability. Themes were supported by illustrative quotes from participants to emphasize key insights and enhance credibility. The report also linked findings to the study's objectives and theoretical framework, particularly the Theoretical Framework of Acceptability (TFA) constructs. Themes were discussed regarding their implications for affective attitude, self-efficacy, and burden within the context of integrated care services.

Through these systematic steps, the researcher extracted meaningful insights into patient acceptability of integrated care services for HIV and non-communicable diseases in Dar es Salaam, contributing valuable knowledge to this field of study.

3.8 Trustworthiness of the research

Qualitative research features of scientific rigor were considered to guarantee the reliability of this study. The investigator guaranteed that credibility, reliability, and transferability standards were upheld.

3.9 Credibility

Credibility was supported through the careful selection of study participants, focusing exclusively on those with extensive experience in community-integrated services. All selected patients were carefully informed about the study objectives to ensure an understanding. The researcher established rapport at the beginning of each interview to create a comfortable environment. Additionally, peer consultation was used to review and refine the codes applied in data analysis.

3.9.1 Dependability

To ensure the data's dependability, the researcher employed standardized procedures for data collection and analysis while thoroughly explaining the study's objectives to participants.

However, the interviews were conducted in Kiswahili to facilitate the provision of relevant information required for the study.

3.9.2 Transferability

To address transferability, the researcher gave detailed explanations of the study's contextual and participant characteristics as well as going over any limitations or restrictions on the transferability of the findings.

3.9.3 Researcher Reflexivity

Acknowledging my background in social science and its potential influence on data interpretation, I maintained reflexivity by discussing emerging themes with research assistants to minimize bias. I was also mindful of potential power dynamics, emphasizing participant anonymity and confidentiality to encourage open responses. Regular reflection and peer feedback helped to maintain objectivity, allowing for an accurate representation of participants' experiences.

3.10 Ethical consideration

The study sought ethical clearance from the Institutional Review Board (IRB) of the Muhimbili University of Health and Allied Sciences (MUHAS), certificate number MUHAS-REC-07-2024-2389. Before the survey and interview sessions, all participants provided written informed consent to participate in the study. The consent form provided details about the purpose and significance of the study. The ethical principles of anonymity, permission, and confidentiality were upheld to preserve trust. The information and data gathered are to be utilized only for research purposes.

CHAPTER FOUR

4.0 RESULTS

4.1 Introduction

This study originated with three main objectives: to explore patients' affective attitudes towards comprehensive community-based integrated care services for HIV and NCDs, explore perceived self-efficacy to participate in the comprehensive community-based integrated care services for HIV and NCDs, and find out the perception of burden among patients associated with participation in receiving care through community-based integrated services for HIV and NCDs. Analysis of findings within this study to answer the objectives revealed various perceptions of patients, which were grouped into three main themes. The first theme described the attitudes and perceptions of patients towards community-integrated services for HIV and NCDs. The second theme explains the empowered engagement and accessibility in integrated health services, highlighting patients' self-efficacy in receiving such services. Lastly is the perception of effortless engagement and efficient care associated with integrated services for HIV and NCDs.

4.2 Characteristics of Participants

The study comprised 16 participants, primarily female (n=10; 62.5%) and married (n=10; 62.5%), with half of the participants aged 61 or older (n=8; 50%). Educational attainment was generally low, with most having completed only primary education (n=12; 75%). In terms of employment, over half were self-employed (n=9; 56.3%), with others being unemployed (n=5; 31.2%). Regarding health conditions, a significant number had comorbidities—hypertension and diabetes (n=4; 25%), HIV and diabetes (n=2; 12.5%), and one participant managing all three conditions (n=1; 6.3%).

Table 1: Demographic and Clinical characteristics of patients

Characteristics	n=16	%
Sex		
Male	6	37.5
Female	10	62.5
Marital status		
Married	10	62.5
Widowed	4	25.0
Divorce	1	6.3
Age (years)		
20-30	1	6.3
41-50	3	18.8
51-60	4	25.0
Above 61	8	50.0
Level of education		
Primary Education	12	75.0
Secondary Education	2	12.5
No Formal Education	2	12.5
Source of Income		
Formal employment	2	12.5
Self-employed	9	56.3
Not Employed	5	31.2
Disease condition		
Hypertensive	3	18.7
Diabetes	3	18.7
HIV	3	18.7
Hypertensive & Diabetes	4	25.0
HIV & Diabetes	2	12.5
HIV, Hypertensive & Diabetes	1	6.3

4.3.1 Summary of the study findings

The study found that a positive patient-provider relationship was a crucial factor influencing the affective attitudes of the patients. Patients' appreciation of personal attention and proactive provider communication, such as appointment reminders and follow-up calls, significantly influenced satisfaction and acceptability. The study also revealed that patients felt more confident accessing community-integrated services due to their convenience and efficiency. The proximity of services to residential areas significantly reduced travel time and costs, allowing patients to manage their health without disrupting their daily activities. Consistent

medication availability in community-integrated services is another significant advantage identified within this study (Table 2).

Table 2: Deductive coding utilized to generate codes and themes from field data aligning with concepts from the Theoretical Framework of Acceptability.

Domain	Sub codes	Codes	Subtheme	Theme
Affective attitudes	-Timely services - Positive interactions - Cheerful providers - Efficient follow-up	-Timeliness - Provider attitude - Engagement - Quick access	Satisfaction with community-integrated services	Patients' attitudes and perceptions towards community-integrated care services
	-Friendly communication - Provider-patient care - Ample consultation time	-Trust - Closeness - Counseling	Patient-provider relationship	
Self-efficacy	-Private seating - Organized setting - Confidential interactions	-Comfort - Discretion - Stigma reduction	Patient Privacy	
	-Site selection - Engaged in decisions - Empowerment through education	-Empowerment Engagement	Empowered engagement of patients	Confidence in self-management and active participation in integrated care
	-Convenient access - Reduced travel - Access to timely care	- Confidence - Accessibility	Confidence in the accessibility of services	
Perceived burden	-Less waiting - Time savings - Flexible appointments	-Time reduction - Convenience	Reduction in time of receiving care	Reduced burden due to efficient and accessible community-integrated services
	-Reduced travel - Local access - Affordability	-Cost savings	Cost reduction associated with care	
	-Monthly medication - Consistent availability - Provider alerts	-Medicine assurance - No shortages	Availability of medication	

4.4 Patient's affective attitudes towards the comprehensive community-based integrated care services

To arrive at the key findings regarding the respective patients' attitudes towards and perceptions about the promoted community-integrated services, the focus elements were satisfaction with community-integrated services, patient-provider relationships, and patient privacy. Each sub-them was examined in triangulation as they seemed to have a synergistic contribution to the determinants of the acceptability of the promoted and eventually established community-integrated services targeting HIV and the selected NCDs.

4.4.1 Satisfaction with community-integrated services

Generally, the respondents had a positive attitude towards community-integrated health services. At their own times during the interview sessions separately held, all of them seemed to appreciate the services, seeing them as having been brought near to them at the crucial time. Such types of services were also claimed to have become their game-changer since, unlike in the past, the awareness created by friendly and cheerful service providers made an appreciable difference in their lives. As an example of the testimonies give, the follow statement reveals the manner and degree of acknowledgements expressed by some of the respondents.

> *"For follow-up, they took our phone numbers so that if we need to go to the clinic tomorrow, they will call to inform us. They remind us of the date. Even if you forget, don't worry, they will call to remind us; the service is good because our healthcare providers are cheerful, they make us laugh, and they care about us. Even if they find you quiet, they'll ask, 'Why are you so quiet today! (Patient with DM + HT, Female, Mwananyamala site).*

Furthermore, it was found that participants perceive community-integrated services to be much quicker and more efficient. Patients revealed that they can quickly access consultation and medication and get along quickly with their other daily activities. Participants also felt that community-integrated services offered more efficient follow-up through effective engagement with their providers.

> "*First, receiving timely service creates a very positive impact because I get my care quicker than facility-based services. Our providers do a great job, and they record my*

blood pressure medication from the beginning, so they know which medicine I should use until the end. For diabetes, the doctor attends to you there, asks you questions about your blood sugar levels, and when you're done, they give you your medication package right there" (Patient with DM + HT, Female, Tandale site).

4.4.2 Patient-provider relationship

This study revealed that patients have positively interacted with community health providers at all sites. All patients interviewed acknowledged an excellent relationship and enjoyed the services from their providers: prior phone contact towards their next visits to community sites, ample time to discuss their progress with the providers, continuous counselling, and open access to medical support in a timely and friendly manner justified their relationships. Furthermore, it was revealed that participants enjoyed the attention and closeness with providers and applauded the positive engagement during receiving services. One participant commented;

"*Our relationship is really close; we care for each other, the service providers are the reason we understand what's going on—whether they are strict, happy, or making us laugh." (Patient with HIV + HT, Male Mwananyamala 1).*

4.4.3 Patient Privacy

This study found that privacy was one of the reasons that made patients stick to and love the community-integrated health services in their selected community sites. All patients acknowledged that the seating arrangements at their sites and the positioning of the service provider made everything extremely private, making the patients feel free to express themselves to community health providers. This is an essential element in reducing social stigma and increasing service uptake:

"It is good because the private service is appreciated for such things; there wasn't the same crowding as we experienced at the health facility; at the community service site,

we are few and services are offered quickly. That's why private services are preferred…community clinics are good. I go on time, return without any trouble, and don't have to deal with many people." (Patient with DM + HT, female, Tandale site).

Apart from the sitting arrangements, participants revealed greater satisfaction with the confidentiality and discretion associated with community-integrated services. They also revealed that the service provision setting was large enough, and appointments and consultations with providers were well organized.

"As far as I know, we were brought together for clinics dealing with heart disease, diabetes, and possibly even HIV because it was confidential; no one knew each other's condition. We would meet there, and everyone had already been instructed about their medication. The doctor would interview us privately and give us our medication." (Patient with DM, Male, Tandale site).

4.5 Patient's perceived self-efficacy to participate in the comprehensive community-based integrated care services

During the analysis of findings, a theme on the empowered engagement of patients and their confidence in the accessibility of desired integrated health services emerged. This theme was characterized by two main subthemes: empowered engagement of patients and confidence in the accessibility of integrated health services. This emerging theme was vital in understanding the perception of confidence of patients towards receiving community-integrated services for HIV and NCDs.

4.5.1 Empowered engagement of patients

Study findings reveal that patients are very comfortable with how the seating arrangement is planned and how the sites are selected. They all ascertained that they were fully engaged in selecting community sites and appreciated the whole planning process. They feel comfortable talking to one another and discussing various ongoing issues in the community.

> *"I really liked it because of how it was handled in terms of healthcare. When you go to community site, they ask you which place or care provider you are comfortable with, and there you find a doctor who attends you there, and you receive services for blood pressure and diabetes there, and it's free. Now you find that at hospitals, different people come, and many come to get services. At our community site, you find that the sitting is well organized; the chairs are arranged, and when you arrive, you sit and wait for the doctor. At 8:30, they arrive on time and leave on time*." *(Patient with DM + HT, Female Mwananyamala 2 site).*

Patients interviewed in this study appreciated the level of engagement they get from healthcare providers and amongst themselves in community-integrated services. They acknowledged that they can learn many things from their health providers at community sites. They are taught how to measure their blood pressure and manage themselves at home, and above all, they have more time to discuss with the community healthcare providers, even on non-clinic days.

> *"The expertise is good; I haven't seen anyone mistreat or speak ill of anyone. I follow instructions given and receive education, such as classes on food and eating habits. For example, I am advised not to eat too much and to follow medication schedules precisely. The interactions among patients are good; we meet, talk, laugh, and exchange ideas. The relationships with service providers are also positive." (Patient with DM, Nale, Mwananyamala 1 site).*

4.5.2 Patient confidence in the accessibility of health services

The community-integrated services' delivery system, including the modality of service delivery, was cheered for by the respondents who claimed it to have a proven ability to make it easier and quicker for the services needed for the management of HIV and or for NCDs and even for both types of diseases to be accessed. The close nature of the introduced community-integrated services was acknowledged in that it has helped to reduce the travel time and the transport financial costs on the part of the patients residing far from conventional health care

facilities (HCFs). The reachability of the community-integrated health services was mentioned as having assured the patients of accessing the services they need within a short time and at almost no cost, thereby saving their time for them to proceed with their domestic activities while increasing their compliance with the recommended service uptake or their continuity with care.

> *"Community services are good; we are well attended to without long queues. When we arrive, we receive medication and return home to eat. Hospital services are the same, but we are many there, sometimes waiting from morning until noon. By dividing us into groups and assigning community centers, the process has been streamlined" (Patient with HIV + DM + HT, Female Mwananyamala 1 site).*

Furthermore, patients interviewed in this study revealed confidence and excitement when they were recruited to join community-integrated sites. They further commented that community-integrated services are more friendly, cost-effective, and reliable. Participants acknowledged that their monthly appointments are exclusive as they save time with increased time efficiency, unlike hospital appointments, which consume a lot of time due to long queues with multiple movements from one point to the other.

> *"I have never missed medication even once. They have the capability and treat us well. On the scheduled dates, they provide care, and their communication is friendly. They follow up closely, reminding us about upcoming appointments." (Patient with HIV + DM + HT, Female Mwananyamala 1 Site).*

4.6 Patient's perceived burden to comply with the requirements of the comprehensive community-based integrated care services

In the data analysis within this study, a theme emerged regarding the effortless engagement of patients and efficient care associated with integrated health services. This theme was characterized by three subthemes: reduction in time of receiving care, cost reduction

associated with seeking and receiving care, and availability and access to medication. These subthemes identified in the analysis of findings highlight the patients' perception of the reduction of burden associated with their participation and receiving care through community-integrated services programs targeting HIV and NCDs. Findings for each subtheme are further explained below.

4.6.1 Reduction in time of receiving care

All the patients interviewed appreciated that community-integrated services have reduced the waiting time for getting services. One respondent revealed that decreased time spent in community-integrated service programs recovers their time for other economic activities. Respondents reported that this greatly reduces their time burden, attracting most patients to this community-integrated service model.

> *"I liked it because of how it was handled regarding healthcare. When you go to the community site, the doctor attends to you there, and you receive services for blood pressure and diabetes there, and it's free. Now you find that at hospitals, different people come, and many come to get services. At our community site, you find that the seating is well organized; the chairs are arranged, and when you arrive, you sit and wait for the doctor. At 8:30, they arrive on time and leave on time." (Patient with HIV + HT, patient Mwananyamala site).*

Along with reducing the time spent receiving care services, respondents commented that flexible arrangements contribute to saving time and preventing inconveniences, as healthcare providers are always keen to adhere to set arrangements and appointments. They further explained that providers are always accommodative despite minor delays, and patients are politely given clarifications.

> *"Time is valuable, and with this service, we are served in time, which makes me happy. When I go there, I am attended well and return home on time" (Patient with HIV + HT, Male, Mwananyamala site).*

4.6.2 Cost reduction associated with seeking and receiving care

In line with the reduction of time associated with receiving care in community-integrated services, interviewed participants in this study have revealed that such services are more affordable than facility-based models. Respondents further commented that community-integrated services within nearby identified sites significantly reduce travel costs to seek care. In conjunction with time and costs, respondents also revealed that saving the two reduces the psychological burden associated with long travels and waiting time to receive services. They also commended community-integrated services for efficiency in delivery.

> *"Honestly, integrated services are quite affordable. First, there is no overcrowding. Second, we receive timely care because we are already selected and not too many, about twenty or thirty people. So, when we go there, we are attended to promptly. Even if you need to go to work, you can be on time because if you go to the hospital at your planned time and that day you want to work, you might have to cancel." (Patient with DM, Male, Mwananyamala 2 site).*

4.6.3 Availability of medication.

While comparing with facility-based models, respondents interviewed in this study reported no challenges associated with medication availability at the community point of care. They revealed that medicines are given in monthly dosages when they attend their community service centres. They further emphasized that every patient gets his/her required medications, and if there is any medicine change, the patient is alerted and given all the details. One respondent commented that assurance of the availability of medicine attracts more patients to like the community-integrated services.

> *"The environment is good, and I receive my medications. Although stigma is not a big issue, the service there are excellent, and medicines are always available." (Patient with DM, Male, Mwananyamala 1 Site).*

CHAPTER FIVE

5.0 DISCUSSION

5.1 Introduction

This study provides essential information on the acceptability of comprehensive community-based integrated care services for HIV and NCDs in Dar es Salaam. It aimed to explore and gain insight into the patients' feelings and attitudes, perceptions of burden, and self-efficacy associated with these services. Through thematic data analysis, we found that patients had positive attitudes and perceptions towards community-integrated services. This was combined with perceptions of empowered engagement and easiness of accessing such services, the perception of minimal effort in engagement and participation, and the perception of high efficiency as experienced. These elucidate an important interplay of factors influencing patients' satisfaction and acceptability of received services.

5.2 Patient's affective attitudes towards the comprehensive community-based integrated care services

Patients' affective attitudes towards community-integrated services were overwhelmingly positive. Satisfaction with these services was a recurrent theme, highlighting the joy and cheerfulness of healthcare providers, which significantly contributed to patients' positive experiences. This aligns with findings from Venables et al. (2016), who noted that the perceived reduction in the burden of time and workload was associated with higher acceptability of community-based interventions (17). Our study also found that positive patient-provider relationship was another crucial factor influencing affective attitudes. Patients' appreciation of personal attention and proactive provider communication, such as appointment reminders and follow-up calls, significantly influenced satisfaction and acceptability. Such observation is similar to the findings of a study conducted by Corneli *et al.* in 2008, which focused on provider-initiated and voluntary counselling services and reported that trust and good relationships between providers and patients were vital in ensuring satisfaction and continuity of receiving care (53). Such engagement and care foster a supportive environment that meets patients' overall expectations.

Moreover, patients highly value privacy during consultations. The strategic seating arrangements and confidentiality maintained by providers helped mitigate concerns about stigma, a significant barrier in HIV care (54). This finding underscores the importance of maintaining privacy in healthcare settings to improve service uptake and patient comfort.

5.3 Patient's perceived self-efficacy to participate in the comprehensive community-based integrated care services

Patients expressed high comfort and satisfaction with the seating arrangements and site selections for community-integrated services. Their involvement in planning fostered a sense of ownership and engagement (55). Patients appreciated the opportunity to interact with healthcare providers and other patients, which facilitated a supportive community atmosphere (56). This engagement highlights the importance of patient-centered care models prioritizing patient preferences and active participation in healthcare decisions (57). The ability to discuss ongoing community issues and health management techniques in an open and collaborative environment was particularly valued, contributing to a sense of empowerment and autonomy in managing their health (57,58).

The study also revealed that patients felt more confident accessing community-integrated services due to their convenience and efficiency. The proximity of services to residential areas significantly reduced travel time and costs, allowing patients to manage their health without disrupting their daily activities (59). This reduction in logistical barriers enhances the acceptability of integrated services (54,56) and underscores their role in improving healthcare accessibility and efficiency (60). Moreover, the reliable and friendly communication from healthcare providers reinforced patients' confidence in the continuity and quality of care received at community-integrated sites (61). Structured follow-ups and reminders about appointments further exemplify the benefits of integrated care in promoting adherence and sustained engagement in healthcare (17,62). Overall, the findings indicate that empowered engagement and improved accessibility are critical components in enhancing the acceptability of community-integrated health services. These elements facilitate better health outcomes and

foster a more inclusive and supportive healthcare environment, aligning with the principles of patient-centered care.

5.4 Patient's perceived burden to comply with the requirements of the comprehensive community-based integrated care services

The findings from this study highlight the minimum efforts endured by patients when receiving integrated services for HIV and NCDs under the community-based modality. This study notes that patients perceive community-integrated services as more time-efficient than facility-based models. This efficiency reduces the logistical burden on patients and allows them to reclaim valuable time for economic activities and other personal commitments (62). Community-based services organized and punctual nature ensures that patients receive timely care, enhancing their overall satisfaction and adherence to treatment regimens (60). The flexible arrangements and adherence to scheduled appointments further contribute to a streamlined process, minimizing the inconvenience typically associated with healthcare visits.

The proximity of care sites to patients' homes significantly lowers travel expenses, a substantial barrier in facility-based care models. This accessibility reduces out-of-pocket costs and alleviates the psychological burden linked with long travels and extended waiting periods (60). The affordability and efficiency of these services and the streamlined process allow for prompt care without overcrowding (62). Contrary to other models, where long queues and overcrowding while waiting for services are reported to be significant nuisances that burden patients and impact acceptability (17). This efficiency is particularly beneficial for patients with work commitments, as it enables them to receive necessary medical attention without disrupting their daily schedules.

Consistent medication availability in community-integrated services is another significant advantage identified within this study. Unlike facility-based models, where medication shortages are common, community sites ensure that patients receive their prescribed medications without interruption (62,63). This reliability enhances patients' trust in the community-integrated services and ensures continuous and effective management of their

conditions (60). The assurance of medication availability is a key factor in patients' preference for community-based care, as it guarantees that their treatment needs are consistently met.

5.5 Study Limitation and Mitigation

This study presents several limitations that may have impacted its findings and implications. Firstly, reliance on self-reported experiences introduces potential bias, as participants might feel pressured to provide favorable responses, particularly regarding sensitive topics like healthcare services. Mitigation strategies such as anonymized surveys and incorporating diverse data sources helped address this issue. Additionally, the focus on Dar es Salaam may limit the generalizability of results to other regions with different socio-economic conditions; thus, expanding research to include rural areas or other Tanzanian regions could enhance relevance. Furthermore, a potential for selection bias might occur as the study predominantly included individuals who have already inclined to use community-based services, resulting in an overly positive perspective; including those who opt out of such services would provide a more balanced view. The cross-sectional design limits insights into patients' long-term sustainability and evolving attitudes toward these services, suggesting that longitudinal follow-ups would yield a more comprehensive assessment. Lastly, provider enthusiasm during the study could influence patient experiences, indicating a potential Hawthorne effect; thus, blinding of providers or observing regular service conditions was done to minimize this.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This study demonstrates high patient acceptance of community-based integrated care for HIV and NCDs in Dar es Salaam, due to its accessibility, convenience, and supportive approach. Patients reported positive experiences with the services, highlighting easy access, shorter travel times, reliable medication availability, and supportive patient-provider relationships. Privacy and proactive communication from providers helped reduce stigma and encouraged continued engagement. These community-integrated services empower patients by addressing logistical and psychological barriers, fostering satisfaction, and enhancing adherence. The findings suggest that community-based care models are an effective approach to meeting the needs of patients with chronic conditions, especially in resource-limited settings.

6.2 Recommendations

The Ministry of Health should strengthen the relationship between healthcare providers and patients. This can be achieved through regular training for providers on effective communication and counselling techniques, ensuring they can offer timely and personalized support.

- The Ministry of Health should consider expanding and scaling up the community-based integrated health services model to other regions in Tanzania. This would involve conducting feasibility studies, securing funding, and ensuring the infrastructure and workforce are in place to support expanded services.
- The National Institute for Medical Research, under the program coordinator of the INTERCOMM project, advised continuing to foster community engagement in Decision-Making. This entails involving patients in the planning and decision-making processes related to community health services. Their input can provide valuable insights into how services can be further tailored to meet their needs.

- Areas for further studies: this study primarily focused on qualitative methods, which allowed for an in-depth exploration of patients' experiences. However, further research should use quantitative methods to measure and analyze factors associated with patient's acceptability of community-based integrated services for HIV and NCDs on a larger scale. The quantitative study will offer a more generalized assessment and could help identify trends across different demographic groups, regions and healthcare settings. On the other hand, the impact of integrated care on long-term health outcomes. This could include tracking disease progression, medication adherence, and overall quality of life among patients receiving integrated services compared to those receiving care through traditional, separated service delivery models.

REFERENCE

1. UNAIDS. Global HIV statistics Fact sheet. 2022.
2. Pinto T, Maokola W, Abdulkarim G, Mgomella GS, Mizinduko MM, Neal J, et al. Title: Identification of key populations living with HIV in Tanzania remains a substantial challenge for achieving UNAIDS 95-95-95 targets. Targeted and enhanced outreach is needed to identify HIV-positive FSW and PWID. Additional Information [Internet]. Abstract. 2023 [cited 2024 Feb 17]. Available from: https://www.croiconference.org/wp-content/uploads/sites/2/posters/2023/CROI_959595_Poster_final_14Feb23-133209459722047666.pdf
3. Tanzania HIV Impact Survey [Internet]. 2023 [cited 2024 Mar 26]. Available from: https://phia.icap.columbia.edu/wp-content/uploads/2023/12/This-SS_5DEC2023.pdf
4. Altice F, Evuarherhe O, Shina S, Carter G, Beaubrun AC. Adherence to HIV treatment regimens: Systematic literature review and meta-analysis. Vol. 13, Patient Preference and Adherence. Dove Medical Press Ltd.; 2019. p. 475–90.
5. Divala OH, Amberbir A, Ismail Z, Beyene T, Garone D, Pfaff C, et al. The burden of hypertension, diabetes mellitus, and cardiovascular risk factors among adult Malawians in HIV care: consequences for integrated services. BMC Public Health. 2016 Dec 12;16(1):1–11.
6. Bigna JJ, Ndoadoumgue AL, Nansseu JR, Tochie JN, Nyaga UF, Nkeck JR, et al. Global burden of hypertension among people living with HIV in the era of increased life expectancy: A systematic review and meta-analysis. Vol. 38, Journal of Hypertension. Lippincott Williams and Wilkins; 2020. p. 1659–68.
7. Crowe SM, Westhorpe CL V, Mukhamedova N, Jaworowski A, Sviridov D, Bukrinsky M. The macrophage: the intersection between HIV infection and atherosclerosis. J Leukoc Biol. 2009 Dec 1;87(4):589–98.
8. Moyo-Chilufya M, Maluleke K, Kgarosi K, Muyoyeta M, Hongoro C, Musekiwa A. The burden of non-communicable diseases among people living with HIV in Sub-

Saharan Africa: a systematic review and meta-analysis. EClinicalMedicine. 2023 Nov 1;65.

9. Achwoka D, Waruru A, Chen TH, Masamaro K, Ngugi E, Kimani M, et al. Noncommunicable disease burden among HIV patients in care: A national retrospective longitudinal analysis of HIV-treatment outcomes in Kenya, 2003-2013. BMC Public Health. 2019 Apr 3;19(1).
10. Mutagonda RF, Siril H, Kaaya S, Amborose T, Haruna T, Mhalu A, et al. Prevalence and determinants of non-communicable diseases including depression among HIV patients on antiretroviral therapy in Dar es Salaam, Tanzania. Tropical Medicine and International Health. 2022 Aug 1;27(8):742–51.
11. Chambuso RS, Shadrack S, Lidenge SJ, Mwakibete N, Medeiros RM. Influence of HIV/AIDS on Cervical Cancer: A Retrospective Study from Tanzania. American Society of Clinical Oncology [Internet]. 2016 Feb;3(1):72–8. Available from: https://ascopubs.org/go/authors/open-access
12. Njuguna B, Vorkoper S, Patel P, Reid MJA, Vedanthan R, Pfaff C, et al. Models of integration of HIV and noncommunicable disease care in sub-Saharan Africa: Lessons learned and evidence gaps. AIDS. 2018 Jul 1;32: S33–42.
13. World Health Organization. Member State Information Session | Integrating the prevention and control of noncommunicable diseases in HIV/AIDS, tuberculosis, and sexual and reproductive health programmes. 2023.
14. Singh S, Kirk O, Jaffar S, Karakezi C, Ramaiya K, Kallestrup P, et al. Patient perspectives on integrated healthcare for HIV, hypertension and type 2 diabetes: a scoping review. BMJ Open. 2021 Nov 16;11(11).
15. Forsythe S, Lee B, Tarimo K, Silvan B, Balampama M, Chitty J, et al. HIV treatment support services in Tanzania: a cost and efficiency analysis at facility and community levels. African Journal of AIDS Research. 2019 Dec 6;18(4):306–14.
16. Venables E, Edwards JK, Baert S, Etienne W, Khabala K, Bygrave H. “They just come, pick and go.” the acceptability of integrated medication adherence clubs for HIV and

Non-Communicable Disease (NCD) Patients in Kibera, Kenya. PLoS One. 2016 Oct 1;11(10).

17. Venables E, Edwards JK, Baert S, Etienne W, Khabala K, Bygrave H. "They just come, pick and go." the acceptability of integrated medication adherence clubs for HIV and Non-Communicable Disease (NCD) Patients in Kibera, Kenya. PLoS One. 2016 Oct 1;11(10).
18. Ddamulira C, Nsereko N, Musoke M. The Effect of Community Based Non-Communicable Disease Services on the Quality of Life of People Living with HIV in Uganda: A Randomized Controlled Trial. Official Publication of Direct Research Journal of Public Health and Environmental Technology [Internet]. 2020;5(6):xx–xx. Available from: https://doi.org/10.26765/DRJPHET59960600
19. Shayo EH, Kivuyo S, Seeley J, Bukenya D, Karoli P, Mfinanga SG, et al. The acceptability of integrated healthcare services for HIV and non-communicable diseases: experiences from patients and healthcare workers in Tanzania. BMC Health Serv Res. 2022 Dec 1;22(1).
20. Martelli G, Van Duffel L, Kwezi EC, Cavallin F, Salehe IA, Torelli GF, et al. Community- and facility-based HIV testing interventions in northern Tanzania: Midterm results of Test & Treat Project. PLoS One. 2022 Apr 1;17(4 April).
21. Van Hout MC, Akugizibwe M, Shayo EH, Namulundu M, Kasujja FX, Namakoola I, et al. Decentralising chronic disease management in sub-Saharan Africa: a protocol for the qualitative process evaluation of community-based integrated management of HIV, diabetes and hypertension in Tanzania and Uganda. BMJ Open [Internet]. 2024 Mar 20;14(3):e078044. Available from: https://bmjopen.bmj.com/lookup/doi/10.1136/bmjopen-2023-078044
22. Chen WT, Shiu CS, Yang JP, Simoni JM, Fredriksen-Goldsen karen I, Lee TSH, et al. Antiretroviral therapy (ART) side effect impacted on quality of life, and depressive symptomatology: A mixed-method study. J AIDS Clin Res. 2013;4(6).
23. Genberg BL, Wachira J, Steingrimsson JA, Pastakia S, Tran DNT, Said JA, et al. Integrated community-based HIV and non-communicable disease care within

microfinance groups in Kenya: Study protocol for the Harambee cluster randomised trial. BMJ Open. 2021 May 18;11(5).

24. The United Republic of Tanzania; ministry of health. National guidelines for the management of HIV and aids [Internet]. 2019. Available from: https://nacp.go.tz/download/national-guidelines-for-the-management-of-hiv-and-aids-april-2019/#
25. Adeyemi O, Lyons M, Njim T, Okebe J, Birungi J, Nana K, et al. Integration of non-communicable disease and HIV/AIDS management: A review of healthcare policies and plans in East Africa. BMJ Glob Health. 2021 May 4;6(5).
26. Sekhon M, Cartwright M, Francis JJ. Acceptability of healthcare interventions: An overview of reviews and development of a theoretical framework. BMC Health Serv Res. 2017 Jan 26;17(1).
27. Singh S, Kirk O, Jaffar S, Karakezi C, Ramaiya K, Kallestrup P, et al. Patient perspectives on integrated healthcare for HIV, hypertension and type 2 diabetes: a scoping review. BMJ Open. 2021 Nov 16;11(11).
28. Ngcobo S, Scheepers S, Mbatha N, Grobler E, Rossouw T. Roles, Barriers, and Recommendations for Community Health Workers Providing Community-Based HIV Care in Sub-Saharan Africa: A Review. AIDS Patient Care STDS. 2022 Apr 1;36(4):130–44.
29. Sekhon M, Cartwright M, Francis JJ. Acceptability of healthcare interventions: An overview of reviews and development of a theoretical framework. BMC Health Serv Res. 2017 Jan 26;17(1).
30. Ostrom TM. The Relationship between the Affective, Behavioral, and Cognitive Components of Attitude1p2. Vol. 5, JOURNAL OF EXPERIMENTAL SOCIAL PSYCHOLOGY. 1969.
31. World Health Organization Regional Office for Europe W. Integrated care models: an overview Working document [Internet]. 2016. Available from: http://www.euro.who.int/pubrequest

32. Van Hout MC, Akugizibwe M, Shayo EH, Namulundu M, Kasujja FX, Namakoola I, et al. Decentralising chronic disease management in sub-Saharan Africa: a protocol for the qualitative process evaluation of community-based integrated management of HIV, diabetes and hypertension in Tanzania and Uganda. BMJ Open. 2024 Mar 20;14(3).
33. Deconinck H, Hallarou ME, Pesonen A, Gerard JC, Criel B, Donnen P, et al. Understanding factors that influence the integration of acute malnutrition interventions into the national health system in Niger. Health Policy Plan. 2016 Dec 1;31(10):1364–73.
34. Silva-Matos C, Beran D. Non-communicable diseases in Mozambique: Risk factors, burden, response and outcomes to date. Vol. 8, Globalization and Health. 2012.
35. Oji N, Onyeka T, Soyannwo O, Paal P, Elsner F. Perspectives, perceived self-efficacy, and preparedness of newly qualified physicians' in practising palliative care—a qualitative study. BMC Palliat Care. 2022 Dec 1;21(1).
36. Swendeman D, Ingram BL, Rotheram-Borus MJ. Common elements in self-management of HIV and other chronic illnesses: An integrative framework. AIDS Care - Psychological and Socio-Medical Aspects of AIDS/HIV. 2009 Oct;21(10):1321–34.
37. Janssens B, Van Damme W, Raleigh B, Gupta J, Khem S, Soy Ty K, et al. Offering integrated care for HIV/AIDS, diabetes and hypertension within chronic disease clinics in Cambodia. Vol. 85, Bulletin of the World Health Organization. 2007. p. 880–5.
38. Dineen-Griffin S, Garcia-Cardenas V, Williams K, Benrimoj SI. Helping patients help themselves: A systematic review of self-management support strategies in primary health care practice. PLoS One. 2019 Aug 1;14(8).
39. Eton D, Elraiyah TA, Yost K, Ridgeway J, Johnson A, Egginton J, et al. A systematic review of patient-reported measures of burden of treatment in three chronic diseases. Patient Relat Outcome Meas. 2013 Jun;7.
40. Sav A, McMillan SS, Kelly F, King MA, Whitty JA, Kendall E, et al. The ideal healthcare: Priorities of people with chronic conditions and their carers. BMC Health Serv Res. 2015 Dec 14;15(1).

41. Tran VT, Barnes C, Montori VM, Falissard B, Ravaud P. Taxonomy of the burden of treatment: A multi-country web-based qualitative study of patients with chronic conditions. BMC Med. 2015 Dec 12;13(1).
42. Goudge J, Gilson L, Russell S, Gumede T, Mills A. Affordability, availability and acceptability barriers to health care for the chronically ill: Longitudinal case studies from South Africa. BMC Health Serv Res. 2009;9.
43. Nyblade L, Stangl A, Weiss E, Ashburn K. Combating HIV stigma in health care settings: What works? Vol. 12, Journal of the International AIDS Society. John Wiley and Sons Inc.; 2009.
44. Bouzioti D. Introducing the Phenomenological Model of Performance Practice (PMPP): Phenomenological Research Design and the Lived Experience in Performance. Int J Qual Methods. 2023 Jan 1;22.
45. Flick U. Qualitative Research Designs. Designing Qualitative Research. 2012;36–50.
46. Pallangyo P, Nicholaus P, Kisenge P, Aloyce M, Samlongo M, Shemu T, et al. Global Journal of Medical Research: I Surgeries and Cardiovascular System High Blood Pressure, an Epidemic Inadequately Diagnosed and Poorly Controlled: A Community-based Survey in Kinondoni District, Dar Es Salaam Tanzania High Blood Pressure, an Epidemic Inadequately Diagnosed and Poorly Controlled: A Community-based Survey in Kinondoni District, Dar Es Salaam Tanzania. 2016;
47. Wendelin Mwanri A. Gestational diabetes mellitus in Tanzania-public health perspectives.
48. Greg G, Kathleen M. M, Emily E. N. Applied Thematic Analysis-. London: Sage Publications; 2012.
49. Knutsen K, Solbakken R, Gallagher S, Müller RT, Normann B. Patients' experiences with early rehabilitation in intensive care units: A qualitative study about aspects that influence their participation. J Adv Nurs. 2024 May 1;80(5):1984–96.
50. Roberts LD, Povee K. A brief measure of attitudes toward mixed methods research in psychology. Front Psychol. 2014;5(NOV):1312.

51. Murphy FJ, Yielder J. Establishing rigour in qualitative radiography research. Radiography. 2010;16(1):62–7.
52. Ghafouri Raziyeh. Trustworth and rigor in qualitative research. ResearchGate. 2018;7(4):1914–22.
53. Corneli A, Jarrett NM, Sabue M, Duvall S, Bahati E, Behets F, et al. Patient and provider perspectives on implementation models of HIV counseling and testing for patients with TB. The International Journal of Tuberculosis and Lung Disease. 2008 Feb;12(1):79–84.
54. Shayo EH, Seeley J, Bukenya D, Karoli P, Jaffar S. The Acceptability of Integrated Healthcare Services for HIV and Non-Communicable Diseases: Experiences from Patients and Healthcare Workers in Tanzania. Res Sq [Internet]. 2021;1–22. Available from: https://www.researchsquare.com/article/rs-796756/latest.pdf
55. Shayo EH, Kivuyo S, Seeley J, Bukenya D, Karoli P, Mfinanga SG, et al. The acceptability of integrated healthcare services for HIV and non-communicable diseases: experiences from patients and healthcare workers in Tanzania. BMC Health Serv Res. 2022 Dec 1;22(1).
56. Ngcobo S, Scheepers S, Mbatha N, Grobler E, Rossouw T. Roles, Barriers, and Recommendations for Community Health Workers Providing Community-Based HIV Care in Sub-Saharan Africa: A Review. AIDS Patient Care STDS. 2022 Apr 1;36(4):130–44.
57. Stacey D, Kryworuchko J, Bennett C, Murray MA, Mullan S, Légaré F. Decision coaching to prepare patients for making health decisions: A systematic review of decision coaching in trials of patient decision aids. Vol. 32, Medical Decision Making. 2012.
58. Kasoka K. Autonomy in HIV testing: a call for a rethink of personal autonomy in the HIV response in sub-Saharan Africa. Vol. 23, Medicine, Health Care and Philosophy. Springer; 2020. p. 519–36.
59. Decroo T, Rasschaert F, Telfer B, Remartinez D, Laga M, Ford N. Community-based antiretroviral therapy programs can overcome barriers to retention of patients and

decongest health services in sub- saharan africa: A systematic review. Int Health. 2013 Sep;5(3):169–79.

60. Sande O, Burtscher D, Kathumba D, Tweya H, Phiri S, Gugsa S. Patient and nurse perspectives of a nurse-led community-based model of HIV care delivery in Malawi: A qualitative study. BMC Public Health. 2020 May 14;20(1).

61. Wachira J, Genberg B, Kafu C, Braitstein P, Laws MB, Wilson IB. Experiences and expectations of patients living with HIV on their engagement with care in western Kenya. Patient Prefer Adherence. 2018;12:1393–400.

62. Beichler H, Grabovac I, Dorner TE. Integrated Care as a Model for Interprofessional Disease Management and the Benefits for People Living with HIV/AIDS. Vol. 20, International Journal of Environmental Research and Public Health. MDPI; 2023.

63. Eshun-Wilson I, Awotiwon AA, Germann A, Amankwaa SA, Ford N, Schwartz S, et al. Effects of community-based antiretroviral therapy initiation models on HIV treatment outcomes: A systematic review and meta-analysis. PLoS Med. 2021 May 1;18(5).

APPENDICES

Appendix I: Consent Forms - English

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DIRECTORATE OF RESEARCH AND PUBLICATIONS

CONSENT FORM

Informed consent Form-English

My name is Zenais Anthon Kiwale, a student at Muhimbili University of Health and Allied Sciences, pursuing a Master's degree in Public Health (MPH). I am conducting a study on the Exploring Patient's Acceptability of Comprehensive Community-based Integrated Care Services for HIV and Non-communicable in Tanzania. Kindly, I am requesting your cooperation by accurately responding to all questions during an interview to enable me to obtain a scientific conclusion. The information to be collected is purely for academic purposes and you are assured of the highest degree of confidentiality. An interview will take about 30 minutes to 45 minutes.

Confidentiality

I would like to assure you that all the information collected will be confidential. Only people working in this study will have access to the information. We will not use names on the records of the information you provide.

Risks: No harm is anticipated to come upon you by joining this study. Rights to withdrawal and alternatives

Taking part in this study is completely at your will. If you choose not to participate in this study or if you decide to stop participating in the study, you will not get any harm. You can

stop participating in this study at any time, even if you have already consented. Refusal to participate or withdrawal from the study will not involve penalty or loss of any benefits to which you are otherwise entitled.

Benefits

The information you provide will help portray a clear picture of the factors influencing the implementation of comprehensive community-based integrated care services for HIV and non-communicable diseases in Tanzania.

Who to contact

If you ever have questions about this study, you may contact the Principal Investigator,

Zenais Anthon Kiwale,

University of Health and Allied Sciences (MUHAS),

P. O. Box 65001, Dar es Salaam,

Tell: +255756590247

If you ever have questions about your rights as a participant, you may contact

Doctor Emmy Metta or Doctor Theresia Ambrose

Department of Epidemiology and Biostatistics.

P.O. Box 65001 Dar es Salaam,

Tel 0221503026

I ……. I have read and understood what is stated on this form and my questions have been answered correctly. So, I agree to answer the questions that will be asked.

Interviewee signature …… Date ……

Interviewer signature ……..... Date ……

Appendix II: Consent Form – Swahili

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI

KURUGENZI YA UTAFITI NA MACHAPISHO

FOMU YA RIDHAA YA KUSHIRIKI KATIKA UTAFITI

Jina langu ni Zenais Kiwale ni mwanafunzi wa shahada ya uzamili ya Afya ya jamii na mtafiti kutoka Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili. Ninafanya uchunguzi juu ya kukubalika kwa huduma jumuishi za kijamii zinazolenga magonjwa ya VVU pamoja na magonjwa yasiyo ya kuambukiza nchini Tanzania kuzingatia mtazamo wa Wagonjwa/wateja.Tathmini ya ufuatiliaji katika Chuo cha Afya na sayansi shirikishi Muhimbili.

Dhumuni la utafiti

Lengo la utafiti huu ni kuchunguza juu ya kukubalika kwa huduma jumuishi ngazi ya jamii zinazolenga magonjwa ya VVU pamoja na magonjwa yasiyo ya kuambukizwa nchini Tanzania kuzingatia mtazamo wa Wagonjwa/wateja. Hivyo unaombwa kushiriki katika utafiti huu kwani naamini utakuwa na majibu sahihi yanayohitajika katika utafiti huu.

Kwa nini umechaguliwa kushiriki.

Umealikwa kushiriki katika utafiti huu kwa sababu unapata huduma ya matibabu jumuishi katika jamii na una ugonjwa mmoja au zaidi kati ya magonjwa matatu yanayoshughulikiwa katika program hii.

Kinachohusika kwenye utafiti huu

Kama utakubali kushiriki kwenye utafiti huu, mtafiti atafanya mahojiano ya kina yatakayochukua takribani dakika 45 mpaka lisaa limoja.

Usiri

Napenda kukuhakikishia kuwa taarifa zote zitakazopatikana zitakuwa ni za siri, zitatumika kwa madhumuni ya tafiti tu. Hatutotumia majina kwenye rekodi zozote zitakazofanyika.

Madhara

Hakutakua na madhara yoyote yatakayotokea kwako kwa kushiriki katika utafiti huu.

Faida

Taarifa utakazotoa zitasaidia kupata picha halisi ya kukubalika kwa huduma hizo ngazi ya jamii lakini pia taarifa tutakazozipata kutoka katika utafiti huu zitasaidia wizara ya afya kuamua kuhusu namna ya kutoa huduma za afya kwa watu kama wewe katika siku zijazo.

Haki ya kushiriki

Kushiriki kwenye utafiti huu ni wa hiari. Kama utachagua kutoshiriki au kutoshiriki basi hakutokua na madhara yoyote kwako. Unaweza kuamua kuacha kushiriki mda wowote. Hakuna tozo yoyote itakayokuwepo kama ukikataa kushiriki.

Nani wa Kuwasiliana naye.

Ukiwa na maswali yoyote kuhusu utafiti huu, uwe huru kuwasiliana nami, mtafiti mkuu

Zenais Kiwale,

Simu namba +255756590247.

Kama utakuwa na maswali kuhusu haki zako kama mshiriki, unaweza kumpigia

Daktari Emmy Metta au Daktari Theresia Ambrose,

Idara ya Epidemiolojia na Biostatistics,

Simu namba 0221503026

Kama umekubali kuhojiwa, tafadhali saini hapa:

Mimi .....…… nimesoma na kuelewa kilichoelezwa kwenye fomu hii na maswali yangu yamejibiwa kiufasaha. Hivyo ninakubali kujibu maswali yatakayoulizwa.

Sahihi ya mhojiwa ……. Tarehe …….....

Sahihi ya mkusanya taarifa…… Tarehe…….

Appendix III: Interview Guide – English

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

DIRECTORATE OF RESEARCH AND PUBLICATIONS

INTERVIEW GUIDE

Introduction

Thank you for agreeing to participate in this study. As I mentioned earlier, the purpose of this research is to explore the acceptance of community-level integrated health services targeting diseases such as HIV, diabetes, and hypertension, or all of them together. Your participation is voluntary, and we assure you of the utmost confidentiality for all the information you provide. We kindly ask your permission to record our conversation to ensure we capture your input accurately.

Personal Information and Medical History

- Could you please provide a brief history about yourself? **(Probe: age, marital status, education, source of income, residence)**

- I would like to know about your health condition and what illness you are suffering from. **(Probe: diabetes, hypertension, HIV, or a combination of these)**
    - When did you discover that you have this/these illness(es)?
    - How did you discover you had this condition? Probe about symptoms.
    - What was your first step when discovering your illness(es)? (Probe: self-medication, seeking care at health facilities, going for prayers or using traditional medicine, etc. Probe if these services were sought at the same time)

Probe: Reasons for taking these steps.

- What do you think are the leading causes of your illness? Probe about beliefs associated with its causes.

Perspective on the Structure of Integrated Community Health Services

- What do you know about the integrated services provided at the community level for hypertension, diabetes, and HIV?

Probe for:

  - Understanding of community-level integrated services and ability to differentiate between the services offered.
  - What are your views on the structure of integrated community services at the community level?
  - Willingness or reluctance of patients to continue seeking integrated services at the community level, and why (Reasons).
  - Positive aspects of integrated services include the time taken to receive services, quality of service, stigma, costs, continuity of care, availability of medication, views on health professionals/service providers, patient follow-up, personal relationships with providers, etc.
  - Negative aspects of integrated services include the time taken to receive services, quality of service, stigma, costs, continuity of care, availability of medication, views on health professionals/service providers, relationships between patients and providers, etc.

- Could you describe more about the area where you receive integrated community services?

Probe about:

- Reasons for choosing that area.
- Appearance of that area.
- Acceptance of that area.
- Sitting arrangements and whether service delivery is private.
- Whether you get enough time to discuss among yourselves and with the healthcare provider.
- Satisfaction of patients receiving services in those areas.
- Challenges faced in receiving services in those areas.

Questions Related to Service Burden

a. Waiting time to receive services.
b. Any costs you incur to receive these integrated services.
c. How about your time management about this service?
d. Medicine adherence: Do you take your medication on time? Do you get the full dosage? What methods do you use to remind yourself to take your medication? Any challenges related to the medication you are taking.

2. How do the integrated services for HIV, diabetes, hypertension, or all of them align with your values and beliefs? Were there any times when you felt the program conflicted with your values?

Probe for:

a. How do these ethical issues affect your willingness to use the integrated services?
b. Are there any benefits you gain from participating in the integrated community clinic services?
c. Any challenges in implementing these integrated services at the community level?
d. What should be done to facilitate more accessible access to integrated community services for patients?

Thank you for your participation.

Appendix IV: Interview Guide – Swahili

CHUO KIKUU CHA AFYA NA SAYANSI SHIRIKISHI MUHIMBILI

KURUGENZI YA UTAFITI NA MACHAPISHO

MUONGOZO WA MAHOJIANO NA WAGONJWA

Utangulizi

Asante kwa kukubali kushiriki katika utafiti huu. Kama nilivyosema hapo awali, Lengo la utafiti huu ni kuchunguza juu ya kukubalika kwa huduma jumuishi ngazi ya jamii, zinazolenga magonjwa ya (VVU, Kisukari, na Shinikizo la damu, ama yote kwa pamoja) ukihusisha mfumo wa huduma jumuishi kwa magonjwa hayo kwa pamoja kweye jamii unayotoka. Ushiriki wako ni wa hiari na tunakuhakikishia usiri wa hali ya juu kwa taarifa zote utakazotupatia. Tunaomba uturuhusu kurekodi mazungumzo yetu, ili kuhakikisha tunapata kwa usahihi taarifa unazotupatia wakati tunapoandika taarifa.

Taarifa binafsi na historia ya matibabu.

- Naomba nieleze historia fupi kuhusu wewe **(Dodosa: umri, hali ya ndoa, elimu, chanzo cha kipato, makazi)**

2. Ningependa kujua kuhusu hali yako ya afya na unasumbuliwa na ugonjwa gani? (Dodosa, kisukari, shinikizo la damu, VVU, mjumuisho wa yote)

- Lini ulijua kama una ugonjwa huo/ magonjwa hayo?
- Ulijuaje kama una hali hiyo? Dodosa kuhusu dalili.

- Ni hatua gani ulioichukua mwanzoni kabisa ulipogundua una ugonjwa/magonjwa hayo (Dodosa: matibabu ya kibinafsi, kutafuta huduma vituo vya afya, kwenda kwenye

maombi au kutumia dawa za asili nk) dodosa kama huduma hizi zilitafutwa kwa wakati mmoja)

Dodosa: Sababu za kuchukua hatua hizo.

A. Unafikiri nini zitakuwa sababu kuu za ugonjwa unaokisumbua? Dodosa kuhusu imani gani zinazohusishwa na sababu za ugonjwa huo/huu?

Mtazamo juu ya muundo wa huduma jumuishi katika ngazi ya jamii

B. Unafahamu nini kuhusu huduma jumuishi zinazotolewa kwenye ngazi ya jamii kwa magonjwa ya Shinikizo la damu, kisukari na VVU**.**

Dodosa kuhusu:

- Uelewa kuhusu huduma jumuishi ngazi ya jamii, uwezo wakutofautisha huduma jumuishi zinazotolewa ngazi ya jamii.

Je una mtazamo /mawazo gani juu ya muundo wa huduma jumuishi ngazi ya jamii?

- Utayari /kutokua tayari kwa wagonjwa kuendelea kutafuta huduma jumuishi katika ngazi ya jamii, Kwanini (Sababu)
- Mambo chanya yanayohusu huduma jumuishi mfano muda unaotumia kupata huduma, ubora wa huduma, unyanyapaa, gharama, kuendelea na huduma, upatikanaji wa dawa, mtazamo juu wa wataalam/uwezo wa watoa huduma ya afya, ufatiliaji wa wagonjwa, mahusiano binafsi na mtoa huduma nk).
- Mambo gani hasi yanayohusu huduma jumuishi mfano n.k. muda unaotumia kupata huduma, ubora wa huduma, unyanyapaa, gharama, kuendelea na huduma, upatikanaji wa dawa, mtazamo juu ya wataalam wa afya, uwezo wa watoa huduma,mahusiano kati ya wagonjwa na watoa huduma.

C. Je, unaweza kunielezea zaidi kuhusu eneo mnalotumia kupatia huduma jumuishi ngazi ya jamii?

Dodosa:

- Sababu yakuchagua eneo hilo.
- Muonekano wa hilo eneo.

- Kukubalika kwa hilo eneo.
- Mpangilio wa ukaaji na je, kuna usiri wa huduma.
- Je, mnapata muda wa kutosha kujadiliana wenyewe kwa wenyewe, na majadiliano na mtoa huduma wa afya?
- Wagonjwa wamerizika kupokea huduma katika maeneo hayo.
- Kuna chanagamoto gani mnazokumbana nazo katika kupokea huduma katika maeneo hayo?

D. Questions related to burden of service

- Waiting time/muda mnaosubiria kupata huduma
- Costs related to service/gharama zozote unazotumia ili kupata huduma hizi jumuishi.
- Time saving/ vipi kuhusu muda wako unaoutumia kwaajiri ya huduma hii.
- Medicine adherence/ vipi kuhusu ufuasi wako wa dawa, unameza kwa wakati, unapata dozi kamili, njia gani unazozitumia ili kukukumbusha muda wa kumeza dawa, changamoto zozote zitokanazo na matumizi ya dawa unazotumia

E. Huduma jumuishi za magonjwa ya VVU, Kisukari, Pressure au vyote kwa pamoja ziliendanaje na maadili na imani yako?

Kulikuwa na nyakati zozote ambapo uliona programu hiyo ikipingana na maadili yako?

Dadisi:

1.0 Je, masuala haya ya kimaadili yanaathirije nia yako ya kutumia huduma hii jumuishi?

2.0 Je kuna faida yoyote ambayo unaipata katika kushiriki katika kupata huduma katika kliniki hii jumuishi ngazi ya jamii?

- Kuna changamoto zozote katika utekelezaji wa huduma hizi jumuishi katika ngazi ya jamii?
- Unapendekeza nini kifanyike ili kuwezesha wagonjwa kupata kwa urahisi huduma jumuishi katika ngazi ya jamii.

Asante kwa ushiriki wako.

Appendix V: Ethical Clearance

UNITED REPUBLIC OF TANZANIA

MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

OFFICE OF THE DIRECTOR – RESEARCH, PUBLICATIONS AND INNOVATIONS

Ref. No.DA.282/298/01.C/2389 Date: 22/07/2024

MUHAS-REC-07-2024-2389
ZENAIS ANTHON KIWALE
SCHOOL OF PUBLIC HEALTH AND SOCIAL SCIENCES
MUHAS

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: EXPLORING PATIENT'S ACCEPTABILITY OF COMPREHENSIVE COMMUNITY-BASED INTEGRATED CARE SERVICES FOR HIV AND NON-COMMUNICABLE IN DAR ES SALAAM

Reference is made to the above heading,

I am pleased to inform you that the Chairperson has on behalf of the University Senate, approved ethical clearance of the above-mentioned study, on recommendations of the Senate Research and Publications Committee meeting accordance with MUHAS research policy and Tanzania regulations governing human and animal subjects research.

APPROVAL DATE: 22/07/2024
EXPIRATION DATE OF APPROVAL: 22/07/2025

STUDY DESCRIPTION:
Purpose:
The purpose of this observational study is to explore patients' acceptability of the comprehensive community-based integrated care services for HIV and NCD in Dar es Salaam.

The approved protocol and procedures for this study is attached and stamped with this letter, and can be found in the link provided: https://irb.muhas.ac.tz/storage/Certificates/Certificate%20-%2015881.pdf and in the MUHAS archives.

The PI is required to:

1. Submit bi-annual progress reports and final report upon completion of the study.
2. Report to the IRB any unanticipated problem involving risks to subjects or others including adverse events where applicable.
3. Apply for renewal of approval of ethical clearance one (1) month prior its expiration if the study is not completed at the end of this ethical approval. You may not continue with any research activity beyond the expiration date without the approval of the IRB. Failure to receive approval for continuation before the expiration date will result in automatic termination of the approval for this study on the expiration date.
4. Obtain IRB amendment (s) approval for any changes to any aspect of this study before they can be implemented.
5. Data security is ultimately the responsibility of the investigator.
6. Apply for and obtain Data Transfer Agreement (DTA) from NIMR if data will be transferred to a foreign country.
7. Apply for and obtain Material Transfer Agreement (MTA) from NIMR, if research materials (samples) will be shipped to a foreign country.
8. Apply for and obtain permission to publish the results from National Institute for Medical Research. The application should be before submitting to a publisher and not concurrently through the email publications@nimr.or.tz.
9. Any researcher, who contravenes or fail to comply with these conditions, shall be guilty of an offence and shall be liable on conviction to a fine as per NIMR Act No. 23 of 1979, PART III section 10 (2)
10. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
11. PI is required to be versed with necessary laws and regulatory policies that govern research in Tanzania. Some guidance is available on our website https://drp.muhas.ac.tz/.



Dr. Nahya Salim Masoud,
Chairperson, MUHAS Research and Ethics Committee

Appendix VI: Permission Letter

MHURI YA MUUNGANO WA TANZANIA

Ofisi ya Rais

TAWALA ZA MIKOA NA SERIKALI ZA MITAA

MKOA WA DAR ES SALAAM
Anwani ya Simu:
Simu: 2203156/58
Fa: +25522203213
Tovuti: www.dsm.go.tz
Barua Pepe: ras@dsm.go.tz
Unapojibu Tafadhali taja:

OFISI YA MKUU WA MKOA
3 Barabara ya Rashidi Kawawa,
S. L. P. 5429,
12880 - DAR ES SALAAM.

23 Agosti, 2024

Kumb. Na. EA.260/307/01B/162

Mkurugenzi wa Manispaa,
Manispaa ya Kinondoni,
DAR ES SALAAM.

YAH: UTAFITI "Exploring patients acceptability of comprehensive community - based integrated care services for HIV and Non- communicable in Dar es Salaam"

Tafadhali husika na kichwa cha habari hapo juu.

2. Ofisi ya Mkuu wa Mkoa wa Dar es Salaam inautambulisha utafiti tajwa hapo juu ambao umeombewa kibali kutoka Chuo Kikuu cha Tiba na Sayansi Shirikishi Muhimbili (MUHAS kumb. Na: REC-07-2024-2389). Utafiti unafanywa na **Mwanachuo Zenais Anthon Kiwale** wa shahada ya uzamili katika Afya ya jamii na sayansi ya utekelezaji kuanzia tarehe 22 Julai, 2024 hadi 22 Julai, 2025.

3. Utafiti utafanyika katika Halmashauri ya Manispaa ya Kinondoni hususan ngazi ya jamii kwenye kituo cha huduma katika jamii cha Mwananyamala 1, Mwananyala 2, Magomeni na Tandale hususan kwa wateja na wagonjwa wanaopata huduma katika Kliniki jumuishi ngazi ya jamii kwenye program inayoendelea, wenye ugonjwa wa HIV, Kisukari na Presha.

4. Mtafiti atafanya mahojiano na wateja husika wa HIV, Kisukari na Presha waliopo kwenye program ya inte-comm inayotoa huduma jumuishi ngazi ya jamii.Mahojiano yana husiana na kukubalika kwa huduma jumuishi ya HIV na magonjwa yasiyo ambukiza ngazi ya jamii.

5. Lengo la utafiti ni kukidhi matakwa ya mtaala wa masomo na kubaini kukubalika kwa huduma jumuishi ngazi ya jamii ambayo inahusisha ugonjwa wa HIV, Kisukari na Presha.

6. Kwa barua hii, **Mtafiti Zenais Anthon Kiwale** amepewa kibali cha kufanya utafiti, naomba apewe ushirikiano kwa kuwa ndiye mwenye dhamana ya kuusimamia.

Nashukuru kwa Ushirikiano.

Dkt. Mohamedi Mang'una
Kny; KATIBU TAWALA MKOA
DAR ES SALAAM

Nakala: Katibu Tawala Mkoa,
DAR ES SALAAM. – Aione kwenye jalada