EVALUATING HEALTH SERVICE ACCESS AND ASSOCIATED FACTORS AMONG IMPROVED COMMUNITY HEALTH FUND INSURED PATIENTS ATTENDING SAME DISTRICT HOSPITAL IN KILIMANJARO

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By

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A Dissertation Submitted in (partial) Fulfillment of the Requirements for the Master's Degree in Public Health of Muhimbili University of Health and Allied Sciences

October, 2024

CERTIFICATION

The undersigned certify that they have read and hereby recommend for acceptance by Muhimbili University of Health and Allied Sciences the dissertation entitled; ‘‘**Evaluating Health service access and associated factors among Improved Community Health Fund insured patients attending Same district hospital in Kilimanjaro**’’, in (partial) fulfilment of the requirements for the Master’s degree of Public Health of the Muhimbili University of Health and Allied Sciences**.**

_____

Dr. Happiness Saronga

(Supervisor)

_____

Date

_____

Ms. Makene Twilumba

(Co-Supervisor)

_____

Date

DECLARATION AND COPYRIGHT

I, **Chande A. Makaranga**, declare that this **dissertation** is my own 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**……...….....

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LIST OF ABBREVIATIONS

ANC	Antenatal care
iCHF	Improved Community Health fund
NHIF	National Health Insurance Fund
OOP	Out of Pocket payments
WHO	World Health Organization
UHC	Universal Health Coverage
CBHI	Community Based Health Insurance
URT	United Republic of Tanzania
DMO	District Medical Officer
HSSP III	Health Sector Strategic Plan III (2009 – 2015)
HSSP V	Health Sector Strategic Plan V (2021 – 2026)
MUHAS	Muhimbili University of Health and Allied Sciences

DEFINITION OF TERMS

Access to healthcare is the ability to utilize health services example treatment and prevention of diseases which is measured in terms of affordability, physical accessibility and acceptability of services and not merely adequacy of supply. (1)

Health Insurance also referred to as medical insurance, refers to an agreement in which an insurance company agrees to provide coverage for a portion or the entirety of an individual's medical expenses in exchange for a monthly premium payment.(1)

Community based Health Insurance is the system of health insurance that is voluntary based on solidarity and community preferences, aims at providing financial protection and access towards healthcare services among vulnerable and low income communities.(2)

Out of pocket payments is the direct payment provided to health provider which will not be reimbursed by third party which is mostly done by client without insurance coverage or service procured is not being covered by insuring entity.(3)

ABSTRACT

Background: Community Health Fund permits family members to access health care services from primary health facilities and secondary health services up to regional referral hospital without out-of-pocket payments. Despite the source of fund and mode of payment for health services, patient access to health service is a major factor for attaining quality health service.

Objectives: This study aimed at evaluating health service access and associated factors among improved Community Health Fund members attending Same District Hospital in Kilimanjaro.

Methods: The study used a hospital-based, analytical cross-sectional design with a quantitative approach, targeting clients aged 18 and older at Same District Hospital, Kilimanjaro. Data was collected using a pretested questionnaire from randomly selected respondents. Key aspects assessed included affordability (ability to pay for health services), physical accessibility (transportation convenience), facility accessibility (distance from residences), and acceptability (satisfaction with services). SPSS version 23 was used for data analysis, with chi-square tests to evaluate associations and Modified Poisson regression analysis to identify factors associated with healthcare access. Significance was set at 0.05.

Results: 479 iCHF members consented to participate. Participants were predominantly aged 30-44 years, male, married and had secondary education and above. Affordability issues were significant, with 45.9% finding iCHF unable to provide necessary services without extra payments, and high dissatisfaction with cost of medicine, medical supplies, investigations, procedures, and referrals. Physical accessibility was viewed positively by 74.5%, though 27.8% still faced barriers. Acceptability was high, with 68.7% participants finding services acceptable overall. Significant associations were found between access to healthcare and non-infectious disease status (adjusted PR: 1.85, $p=0.001$) and age over 45 years (adjusted PR: 2.41, $p<0.001$).

Conclusion and Recommendations: The study reveals significant gaps in affordability, physical accessibility, and overall access despite high levels of service acceptability. A substantial number of members, particularly from lower and middle-income brackets, encounter financial hurdles due to costs not covered by the insurance. Notably, access varies

by illness type and age. It is recommended that enhancing financial protection by expanding iCHF coverage to include essential and specialized services, thereby reducing the financial burden. Improving physical accessibility through investments in transportation infrastructure and the addition of more health facilities, along with mobile clinics and community outreach programs, are suggested to mitigate physical barriers.

CHAPTER ONE

1.0 INTRODUCTION

1.1 Background

Access to healthcare services is more than just the availability of services; it encompasses multiple dimensions that affect an individual's ability to receive healthcare(4,5). Penchansky and Thomas' Five A's framework—affordability, availability, accessibility, accommodation, and acceptability—remains a comprehensive tool for evaluating healthcare access. Affordability pertains to the cost of services relative to a patient's ability to pay, while availability looks at whether healthcare resources, such as doctors and medical supplies, meet the needs of the population. Accessibility addresses the geographical and logistical ease with which people can reach healthcare providers. Accommodation refers to how well healthcare facilities adapt to patients' needs, including operational hours and scheduling flexibility, and acceptability evaluates whether healthcare services are socially and culturally acceptable to patients(6–8).

Countries are moving toward Universal Health coverage, which is one of the ways of mitigating health problems; the World Health Organization Assembly called for countries to focus on universal health care coverage, where by all citizens would have access to preventive, curative and rehabilitative services at minimum affordable cost. (9) Universal health coverage (UHC) means that all individuals and communities receive the health services they need without suffering financial hardship (10). Countries like Tanzania aim to achieve Universal Health Coverage (UHC), ensuring that all individuals receive the health services they need without financial hardship. However, out-of-pocket (OOP) expenditures remain a significant barrier, particularly for the poor and vulnerable populations. All of these are due to inability to pay out-of-pocket (OOP), access health services, and has been regarded as one of the main obstacles to access healthcare particularly for the poor and the vulnerable, and at moment millions of people are unable to access health services due to OOP expenditure(11). Household expenditures are being consumed by health expenditures mainly because of user charges (official or unofficial) in both public and private facilities upon access to different services such as diagnostics, medicines, consultation and surgery(12).

Tanzania among many other countries has prioritized to put UHC policy into action, aiming for single health insurance system, but at the moment Tanzania has two public health insurance systems which are NHIF for formal sector workers involving also some of private sectors and individuals and iCHF for informal sector workers and rural households(13).

In Tanzania, Community Health Fund (CHF) officially started to operate in 1996. Five years later, in 2001 the Community Health Fund Act No.1 was endorsed and made the CHF scheme to be a voluntary pre-payment mechanism of health financing to be advocated to every household. The fee for membership enrollment for the Community Health Fund was initially grouped according to family size between 5,000 to 15,000 Tanzanian shillings per year for 6 family members.

In 2009, the scheme evolved into a voluntary insurance scheme as TibakwaKadi (TIKA). This scheme had similar mode of operation as the CHF, however it focused on urban populations. Community Health Fund permits family members to get health care services from primary health facilities and secondary health services up to regional referral hospital without out of pocket payments (14). Due to different weaknesses observed in CHF including inadequate membership enrollment, fund management and benefits coverage, it was decided to transfer the management of CHF to National Health Insurance Funds.(15)

In the interim, in March 2018, council health management teams and enrollment officers began training for the initiation of the iCHF, an alternative insurance scheme to CHF intended to cover the informal sector and rural households. Immediate plans for the iCHF are to pool funds at the regional level, iCHF have different premiums charged to its members based on locations of the beneficiaries. At Dar-es-Salaam, the contributions are fixed at TZS 40,000 for each beneficiary individually or TZS 150,000 for a household of six members. In different parts of the nation, premiums contribution set per beneficiary is TZS 30,000/= for both urban and rural areas(13). All these reforms were important as the scheme was facing different challenges in its implementation. The improved CHF follows the basic principles of any other insurance including prepayment, resource pooling, risk-sharing as well as collaborations with other health system partners in improving the quality and the access of healthcare services in facilities(16).

Despite the source of fund and mode of payment for health services, ability of the patients to access all the health services they need is one of the fundamental indicators of relative quality of health care provided(17,18). A study conducted in rural Tanzania highlighted that members of the iCHF scheme experienced better protection against catastrophic health expenditures compared to non-members. However, socioeconomic disparities continue to influence healthcare access, suggesting that improvements to the iCHF scheme, including better financial protection, are necessary to enhance progress toward universal health coverage (UHC)(19). A 2023 review revealed that insurance schemes targeting informal workers in Tanzania, such as the iCHF, face significant challenges due to irregular incomes and high attrition rates. This highlights the difficulty in enforcing mandatory health insurance contributions in the informal sector. Even in countries with more developed schemes like Ghana and Rwanda, low-income groups struggle to afford premiums(20). Another study done by JM Msuya and others in 2000 at igunga (21) addressing impact of community health funds on access to health services in rural Tanzania showed that iCHF members had financial protection during health shocks compared to non members but it also showed that there were no significant differences on health expenditure and utilization of health service between members and non members, which pose a question, does iCHF increase access to health services, above that some of poorest families were unable to afford iCHF premiums. A study by R. Kigume and S.O. Maluka in 2019 with title of failure of Community Based Health Insurance in Tanzania which was conducted in four districts namely Kinondoni, Kibaha, Iringa and Songea came with realization that, poor availability of health services which was presented with out of stock of drugs and medical supplies played major role on non renewal of membership (22). More so, another study by SO Maluka and G. Bukagile on Implementation of Community Health Funds in Tanzania, which was carried out in Lindi found not only availability of health services being an issue but also poor acceptability, where community members lack trust toward health services provided by CBHF schemes(23).

1.2 Problem statement

Community-based health insurance funds globally aim to increase universal health coverage and access to healthcare services(15). The Improved Community Health Fund (iCHF) in Tanzania, targeting poor and vulnerable populations in both rural and urban areas, seeks to break the vicious cycle where poverty leads to illness and illness perpetuates poverty(8).

Despite its goals, the iCHF has achieved only a 12% coverage rate among informal sector and low-income individuals, significantly below the Health Sector Strategic Plan III's target of 30% coverage by 2015(24), a shortfall that persists in the current HSSP V and dropping to 5-3.5%. Recent data indicates that both rural and urban areas show below-expected participation rates and service accessibility(25), some of the observed reasons are issues in the health services provision and poor management of the scheme(26)(27).

If this problem is not addressed, it will lead to worsening health outcomes as untreated illnesses persist among the poor and vulnerable populations. This will increase the financial burden on low-income households, pushing many further into poverty due to high out-of-pocket medical expenses. Additionally, Tanzania will continue to fall short of its national health goals, as the Health Sector Strategic Plans (HSSP) will fail to achieve their targets for universal health coverage, hindering progress toward improving the health system

Most studies have reviewed challenges and reasons to why the schemes have not reached their targets as expected. However, there is scarcity of published evidence concerning access of health services for clients, who are the target population, with the iCHF membership.

This study evaluated access to healthcare services amongst iCHF insured members at Same District Hospital in Kilimanjaro Region, aiming to identify barriers to access.

1.3 Conceptual Framework

The conceptual framework that is presented below illustrates several factors that could impact access to health services. This comprise of independent factors which are affordability, physical accessibility, acceptability of services and moderator variables, factors that alters the strength or direction of the relationship between the independent and dependent variables which comprises social demographic data (example age, sex and income) and type of illness.

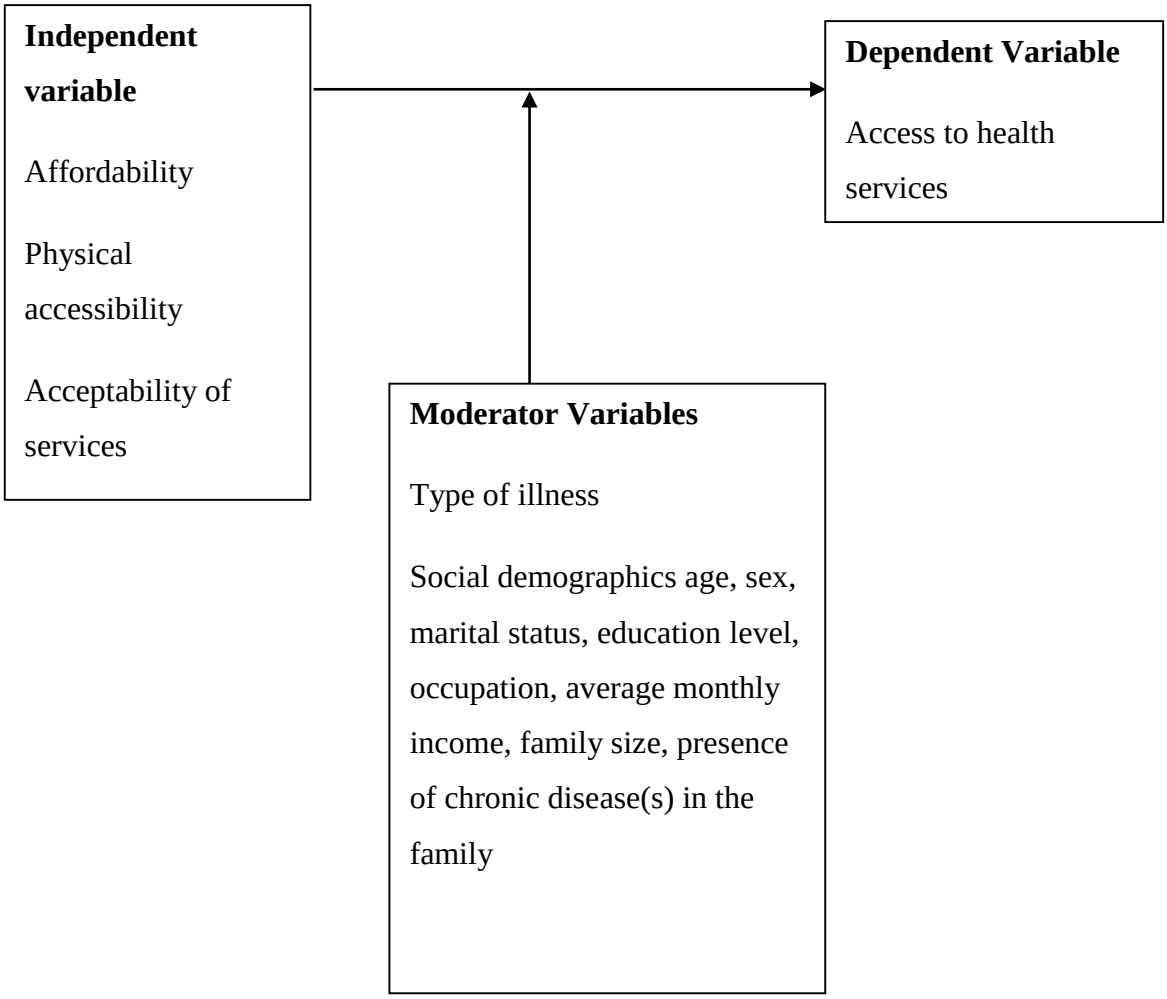


Figure 1: Conceptual Framework

1.4 Rationale

This research provides valuable insights into the affordability, physical access, and acceptability of health services among iCHF members, potentially aiding the government's goal of increasing coverage beyond 30%. The study offers evidence-based data to the Ministry of Health and local government authorities, informing policy decisions and refining iCHF by evaluating its effectiveness. Furthermore, it benefits healthcare providers including district hospitals, primary healthcare facilities, and health workers by highlighting how iCHF impacts clients, enabling them to address specific challenges faced by the population. This research also lays the groundwork for further studies on iCHF and suggests actionable solutions to enhance its contribution to health equity.

1.5 RESEARCH QUESTIONS.

1.5.1 Main Research question

What is the level of access to health services and associated factors among iCHF members attending Same District Hospital in Kilimanjaro?

1.5.2 Specific Research questions

1. What is the affordability of services among iCHF members attending Same District Hospital?
2. How is the physical accessibility of services among iCHF members attending Same District Hospital?
3. How is the acceptability of services among iCHF members attending Same District Hospital?
4. What is the association between type of illness and health service access among iCHF members attending Same District Hospital?

1.6 OBJECTIVES.

1.6.1 Broad objective:

To evaluate health service access and associated factors among iCHF members attending Same District Hospital in Kilimanjaro.

1.6.2 Specific Research objectives:

1. To assess the affordability of health services among iCHF members attending Same District Hospital.
2. To determine the physical accessibility of services among iCHF members attending Same District Hospital.
3. To assess the acceptability of services among iCHF members attending Same District Hospital.
4. To determine the association between type of illness and health service access among iCHF members attending Same District Hospital.

CHAPTER TWO

2.0 LITERATURE REVIEW

2.1 Introduction

Universal Health Coverage (UHC) is a widely endorsed global policy that aims to ensure everyone can access essential health services without financial hardship (28). One solution proposed by the World Health Organization (WHO) for achieving UHC, particularly in low-income and rural areas, is the implementation of Community-Based Health Insurance (CBHI) schemes (10,29). These schemes are designed to create voluntary, community-based risk-pooling mechanisms that reduce user fees as barriers to healthcare access. It has become increasingly important in developing countries like those in Sub-Saharan Africa, as it helps ensure affordable access to healthcare while protecting households from catastrophic health expenditures. CBHI schemes have been shown to increase healthcare utilization and improve household financial protection by spreading the risk of healthcare costs across a larger group (30).

Health insurance is reported to be effective in ensuring that the costs for accessing healthcare is affordable. It is currently gaining more attention in developing countries, especially in sub Saharan Africa, as one of the major means for healthcare financing. It improves reliable health care utilization and shields households from problems arising from out-of-pocket expenditures for healthcare services(30–32).

Community Based Health Insurance (CBHI) is a form of micro health insurance, a broad term for health insurance intended for those with low incomes (33). A specific feature of CBHI is the community involvement in its setup and management(34). One of the aim of the initiating CBHI is to reduce the “under the table payments” which are unofficial payments charged by healthcare providers to clients in addition to the official fees for services that are supposed to be free of charge (14).

2.2 Affordability of health services among iCHF members

It was reported that about 50% of poorest households are more likely to make informal payments (under the table payments) at public health facilities in low-income countries and

resource-limited settings(35,36). This raises concerns about affordability even with insurance programs like iCHF.

Some iCHF member incur additional costs to access health services not covered by iCHF insurance. This is due to the policies and agreements between the insured and the insurer, which limit extent of benefits members can receive from iCHF(37)(38). Consequently, the insured must contribute cash to cover these additional costs. Multiple studies have reported that these additional costs contribute to poor access to some services (11) (25).

In Tanzania, most diagnostic health services are found in higher referral facilities rather than in lower settings. Due to the nature of the referral system in Tanzania, most specialized care is available at referral hospitals, and most surgical services are also provided at these facilities. However, iCHF coverage is limited to the regional level (32,39). Consequently, clients needing tertiary and specialized health services may not be able to benefit from the insurance, leading to additional costs(27).

Recent studies indicate that while iCHF has aimed to improve access to affordable healthcare, many low-income households still face significant out-of-pocket (OOP) expenses. This is largely due to the limited coverage of iCHF. Additionally, the reliance on external donor funding and inconsistent government contributions has hampered the scheme's ability to provide adequate financial protection. A study noted that 32% of healthcare funding in Tanzania still comes from OOP payments(40).

2.3 Acceptability of health services among iCHF members

It was found that younger population has lower enrollment in iCHF compared to older individuals, affecting their accessibility toward healthcare and their ability to mitigate catastrophic health expenditures(41).

Higher income levels are associated with a greater willingness to pay for and renew the iCHF scheme, which in turn increases accessibility to healthcare services. Additionally, higher education levels tend to improve accessibility to healthcare services among iCHF members by increasing awareness of the scheme(41,42).

Exemptions and fee waivers have been blamed for decreasing the quality and sustainability of health services. Many people in exemption groups are hardly convinced to join the iCHF scheme(14,30). In most developing countries, exemption fees have been provided to a wide range of demographic populations, including children under five, the elderly, pregnant women, and patients with chronic illnesses(30).

Some studies have reported inadequate customer care services as one of the challenges faced by iCHF members. Some members reported experiencing exaggerated and unreasonable waiting times for certain services, more so than non-insured patients (user fee clients)(43,44).

Despite being covered by insurance, some facilities lack important medicines and drugs. As a result, clients need to be referred to other facilities or seek medications from other sources (27). This leads to reduced satisfaction and additional costs(45,46).

2.4 Health services access among iCHF members

A study conducted in Kenya by Mwaura et al. (2012) showed that community-based health insurance indeed increases health access. Health-seeking behavior is cultivated among the low-income population, which in turn increases health service utilization. The study revealed that the proportion of insured inpatients is about 50% higher than that of non-insured inpatients(5). Additionally, insured patients tend to have a hospital stay that is approximately twice as long as that of non-insured patients(47).

A study conducted in four districts in Tanzania by Kigume et al. in 2021 concluded that the iCHF scheme has the potential to increase accessibility to healthcare. However, the study also found that the iCHF scheme depended heavily on government grants, which were often delayed or not provided at all. This led to poor quality or reduced accessibility of healthcare services for iCHF members.(15)

Another study by Msuya et al. (2004) shows that there is an increased level of accessibility to health services among households with CBHI. About 87% of members from these households sought healthcare from government health facilities, while less than 5% sought healthcare through alternative means such as self-medication without consulting a physician, buying

medication directly from pharmacies, using local herbs, or consulting traditional healers. In contrast, among households without CBHI, the rates were 51.9% and 30.6%, respectively(16)

2.5 Association between type of illness and healthcare service access among iCHF members

Uganda has abolished user fee schemes and embraced health insurance strategies. Several studies have found that this has led to increased access to treatment for acute illnesses, such as acute respiratory diseases in children. These children had shorter hospital stays since they were treated in the early stages of the disease. However, it was also found that access to treatment for chronic illnesses remained poor, as the majority of chronic illnesses were not covered by health insurance funds(48).

A study conducted in the Morogoro region of Tanzania deduced that long-term illness is associated with the enrollment and renewal of iCHF membership. This is because the benefits of accessing health services through iCHF are more cost-effective for individuals with long-term illnesses(41).

Recent research highlights the significant relationship between illness type and healthcare access in low and middle-income countries. For example, a multi-country survey conducted in 2021 during the COVID-19 pandemic showed that individuals with critical care needs, particularly those with infectious diseases, faced greater challenges in accessing healthcare services. This was especially prominent among those at high risk for severe outcomes, such as people living with HIV or those using alternative medical services due to barriers in accessing regular care(49).

Another study conducted in low and middle-income countries in 2023 emphasized that older adults and individuals with chronic non-infectious diseases, such as diabetes and hypertension, reported better access to primary healthcare services than those with infectious diseases. This is likely due to established care pathways and targeted programs for chronic disease management in many healthcare systems(50).

CHAPTER THREE

3.0 METHODOLODY

3.1 Study design

Hospital-based analytical cross-sectional study by means of quantitative approach.

3.2 Study area:

Same District Hospital in Kilimanjaro Region was selected as the study area from 1st June to 30th June 2024 due to its geographical convenience for the researcher and its pivotal role in healthcare delivery in the region. Kilimanjaro, with a population of approximately 1,861,934 (2022 National Census), has a growth rate of 1.3%, and about 90% of its population resides in rural areas, making healthcare accessibility a critical concern.(51). Historically, Kilimanjaro had one of the lower rates of enrollment in the Community Health Fund (CHF)(13), but recent efforts have increased iCHF enrollment to around 5.5%, probably due to enhanced awareness campaigns and involvement of private healthcare providers. Same District Hospital is strategically located and provides a broad range of services, including outpatient and inpatient care, and specialized clinics for reproductive health, diabetes, hypertension, tuberculosis, and HIV/AIDS treatment. The hospital is supported by diverse funding sources—central government, health insurance schemes (including iCHF), out-of-pocket payments, and external funding through the basket fund. Its accessibility and comprehensive service offerings make it ideal for studying the factors influencing iCHF enrollment and healthcare access in the region. The hospital's location in Kilimanjaro, with both rural and urban dynamics, ensures the study's findings will be representative and relevant for similar regions across Tanzania.

3.3 Study population

iCHF members attending Same District Hospital participated in this study.

3.4 Inclusions and Exclusions criteria:

3.4.1 Inclusions criteria:

a) Adult patients aged 18 years and above attending services at Same District Hospital.

3.4.2 Exclusions criteria

a) Mentally ill patients
b) Terminally ill patients

3.5 Estimation of Sample Size

The sample size for this study was calculated using the modified Kish Leslie (1965) formula as shown below.

$$N = Z^2 (P)(1-P)/ e^2$$

Where:

Sample size is represented by N

Significant level i.e. 1.96 (95% confidence interval) is represented by Z

P= 50.1% prevalence of the insured patients who had access to out-patient services in Nzega and Igunga districts(52)

$N = (1.96)^2 \times 0.501 (1-0.501) \div (0.05)^2$

N= 384

Calculating adjusted sample size using 80% response rate:

Adjusted Sample Size = Minimum Sample Size / 0.8

Adjusted Sample Size = 384/0.8 = 480

The final sample size was 480 participants.

3.6 Sampling procedure

iCHF patients were randomly selected at their exit points after they had already received their respective services. Each patient arriving at the insurance desk was assigned a number, starting with one, and all patients with odd numbers were chosen as candidates. After completing their services, patients returned to the insurance desk to retrieve their insurance cards, at which point the research was conducted. Study participants were enrolled until the targeted size was reached. All eligible clients who were willing to participate were provided with informed consent and included in the study.

3.7 Data collection

3.7.1 Recruitments and training of research assistants:

The study required 2 research assistants, who were recruited to assist with the data collection process.

3.7.2 Data collection tool

An interviewer-administered, structured, pre-tested questionnaire adopted from the study by **G. Mselle et al. (2022),** modified to fit the local context, was used (8). The questionnaire included;

Section A) socio-demographic information which includes sex, age, marital status, education level, occupation, average monthly income, family size, presence of chronic disease(s) in the family, type of illness and distance to the health facility.

Section B) consists of closed ended questions on health service access measured using 5-point Likert type scale where Strongly agree scores 5, agree scores 4, neutral scores 3, disagree scores 2 and strongly disagree scores 1.

3.7.3 Pre-testing of the questionnaire

Pre-testing of the questionnaire was conducted at Hai District Hospital, involving participants equal to 10% of the actual sample size, which is 48.

3.7.4 Data collection procedure

Prior to beginning the data collection process, a familiarization visit to the hospital under study was conducted following ethical clearance. Self-introduction, explanation of the study's goal, and request for permission to carry out the investigation were made.

Informed written consent was obtained after the participant had completed their healthcare service. Participants were considered recruited upon providing consent to participate in the study. The interviewer administered a standardized questionnaire to guide the interview (see Appendix II), and all responses from participants were recorded directly into the questionnaire during the interview.

Data were gathered from Monday through Friday between the hours of 8:00 AM and 4:00 PM on working days

3.8 Study variables and their measurements

3.8.1 Independent variables

Includes affordability (measured as affordable and not affordable), physical accessibility (measured as accessible and not accessible) and acceptability (measured as acceptable and not acceptable). Moderator variable includes social demographic factors which are

1. Participants Age measured in years
2. Participants sex as male / female
3. Participants Marital status as single/ married/ divorced/widow/widower.
4. Education level/academic standing measured as no formal education, primary, secondary or higher education.
5. Occupation measured as employed, self-employed, peasant or others as named by respondent.
6. Average monthly income measured in TZS.
7. Family size measured as small (1-6 members) or large (≥7 members).
8. Presence or absence of chronic disease(s) in the family.
9. Type of illness as named by respondent.

3.8.2 Dependent variable

Access to health services among iCHF insured patients was measured as either good or poor. This was based on following factors: affordability (ability to pay for services like drugs and tests), physical accessibility (ease and reliability of transportation to the facility, distance to the facility), and acceptability (satisfaction with the quality of services provided).

3.9 Data management and analysis

An electronic questionnaire was used during data collection. Data were stored in a password-protected computer with access restricted to the main researcher.

Data were examined using SPSS version 22 software. Frequencies, proportions, standard deviations, and, if appropriate, the median and interquartile range were generated as part of the analysis process. Tables, charts, and graphs were used to present the data. Access to health services was assessed using a grading score scale for each objective, calculated by counting the number of points responded to on a particular objective.

Participants were scored based on their responses to each question, and an overall score was calculated. The median (50th percentile) was used as a threshold to categorize variables into affordable and not affordable, accessible and not accessible, acceptable and not acceptable. For the overall score, this threshold distinguished between poor and good access. Chi-square tests and regression analysis were used to check associations, with a confidence interval set at 95%. P-values less than 0.05 were considered statistically significant.

Table 1: Summary of specific objectives and their assessment

Objectives/variable	**Statistical method**	**Statistical measures**
To assess the affordability of services among iCHF members attending Same District Hospital. This is determined by question 8-12 in section B.	Descriptive analysis	**Frequency, Percentage.**
To determine the physical accessibility of services among iCHF members attending Same District Hospital. This is determined by question 13 and 14 in section B.	Descriptive analysis	**Frequency, Percentage.**
To assess the acceptability of services among iCHF members attending Same District Hospital. This will be assessed by question 1-7 in section B questions.	Descriptive analysis	**Frequency, Percentage.**

To determine the association between type of illness and health service access among iCHF members attending Same District Hospital. This will be assessed by question 10 in section A.	Inferential analysis	**Chi-square test, Modified Poisson Regression.**

3.9 Ethical consideration

Prior to data collection, ethical clearance was sought from the MUHAS Institutional Ethical Review Committee, which came with reference number DA.282/298/01.C/2322. Permission for data collection was obtained from the District Medical Officer of the Same District Council and the Facility Medical Officer in charge of Same and Hai District Hospitals. A pre-test was conducted at Hai District Hospital.

Each participant was thoroughly informed about the study, its benefits, and the risks associated with participating. Participants were assured of confidentiality and informed that the information provided would be used solely for research purposes. Additionally, participants were assured that their participation was voluntary and that they could withdraw from the study at any time.

CHAPTER FOUR

4.0 RESULTS

4.1 Social demographic characteristics of participants

From demographic data obtained, participants were between 30 and 44 years old (47.6%), slightly male-skewed population with a high proportion of married individuals (67.6%) (table 2). Most have secondary education and above (70.8%), and the main occupations is peasantry (44.1%) and self-employment (41.3%). Income levels are generally low to moderate (94.9%), with most families being small to medium-sized (74.9%). Distance to health facilities is relatively good, 52.8% were within 5 kilometers of the hospital. Chronic diseases were present in almost half the families. Non-infectious diseases are the most common health conditions in the population with 83.7% reporting having chronic illness in the family.

Table 2: Demographic characteristics of participants

Characteristics	**N (%)**
Age	
60 and above	45 (9.4)
45 - 59	106 (22.1)
30 - 44	228 (47.6)
18 - 29	100 (20.9)
Sex	
Female	225 (47.0)
Male	254 (53.0)
Marital Status	
Divorced	31 (6.5)
Married	324 (67.6)
Single	97 (20.3)
Widow/widower	27 (5.6)
Education level	
Higher education	110 (23.0)
Secondary education	229 (47.8)
Primary education	117 (24.4)
No formal education	23 (4.8)
Occupation	
Employed	17 (3.5)
Others	53 (11.1)
Peasant	211 (44.1)
Self-employed	198 (41.3)

Income per month	
Above 400,000	8 (1.7)
200,000 - 400,000	187 (39.0)
50,000 - 200,000	268 (55.9)
Below 50,000	16 (3.3)
Family Size	
7 and above	120 (25.1)
1-6	359 (74.9)
Distance to Health facility	
5 kilometers and above	226 (47.2)
Less than 5 kilometers	253 (52.8)
Chronic disease in Family	
No	256 (53.4)
Yes	223 (46.6)
Disease Condition	
Infectious	78 (16.3)
Non-infectious	401 (83.7)

4.2 Affordability of health services among iCHF members attending Same district

The data indicates that 45.9% of participants find iCHF unable to provide access to the necessary services without additional payments, highlighting its limitations in covering required healthcare (figure 2). Specifically, 39.5% of respondents find the prices of medicine to be unaffordable. For medical supplies, 47% disagree that prices are affordable. More than half (50.7%) find medical investigations such as full blood picture to be unaffordable, while 49.9% disagree with the affordability of medical procedures like wound dressing. The highest dissatisfaction is with the referral process, with 50.9% finding it unaffordable. Data also highlights a clear association between income levels and the sense affordability of health services by iCHF. The statistically significant p-value of 0.004 underscores the impact of income on the perceived affordability of these services (table 3).

Many participants across all income categories find services unaffordable 45.9%.

Figure 2: Affordability of Healthcare Services among iCHF members

Affordability of health services				
	Not affordable	**Affordable**	**Total**	**P-value**
Income per month				
above 400,000	1 (0.5%)	7 (2.7%)	8 (1.7%)	0.004
200,000 - 400,000	103 (46.8%)	84 (32.4%)	187 (39.0%)	
50,000 - 200,000	111 (50.5%)	157 (60.6%)	268 (55.9%)	
Below 50,000	5 (2.3%)	11 (4.2%)	16 (3.3%)	
	220 (45.9%)	259 (54.1%)	479 (100.0%)	

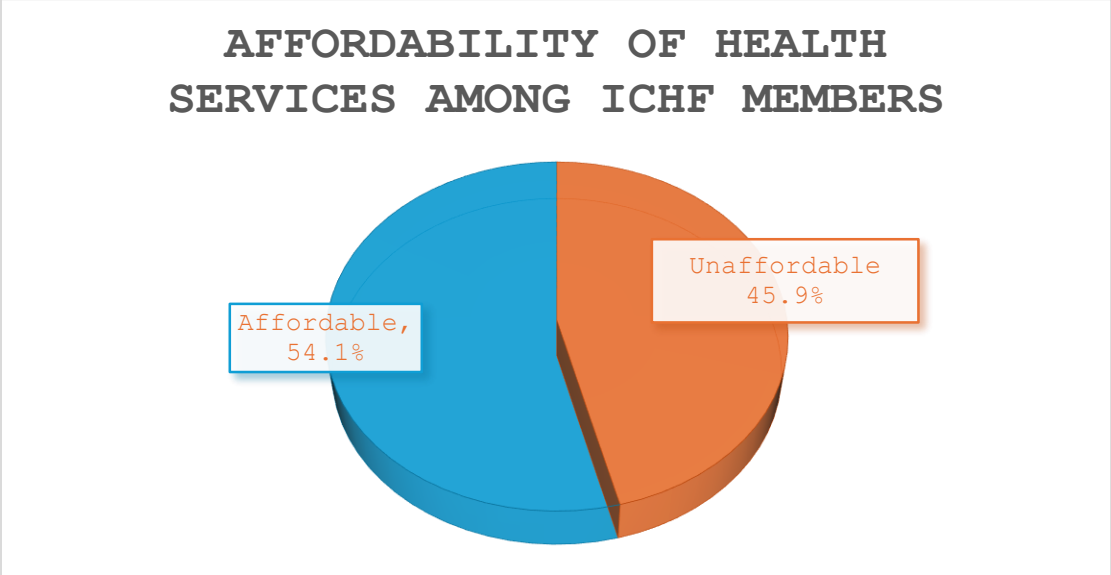
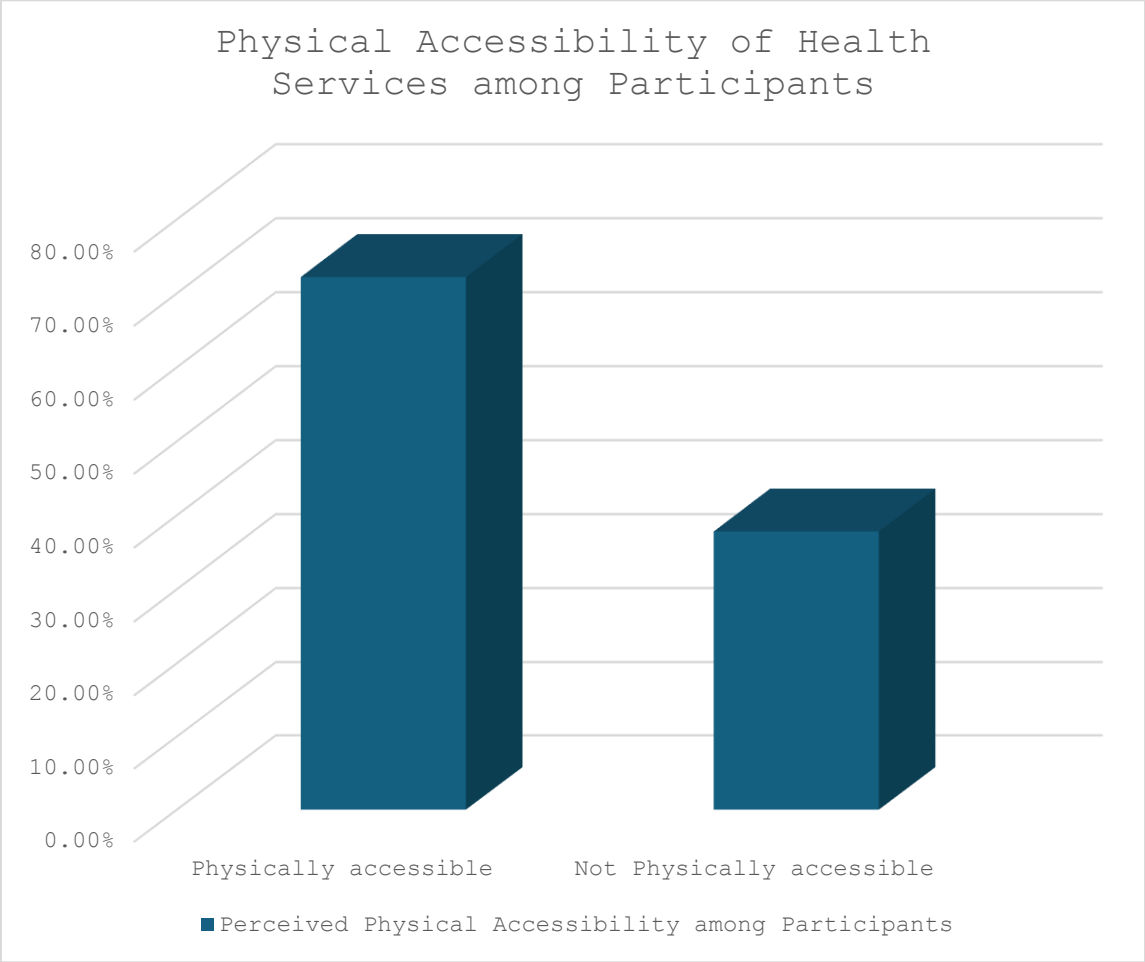


Table 3: Affordability of services and monthly income

4.3 Physical accessibility of health service among iCHF members

The data obtained shows 74.5% of respondents agree that there is convenient and reliable means of transportation (figure 3). Additionally, 87.1% agree that transportation route to healthcare facilities is convenient and reliable. Out of 479 participants, 133 individuals (27.8%) perceived health services as not physically accessible, while 346 individuals (72.2%) found them to be physically accessible.

Figure 3: Physical Accessibility of Health Services among iCHF members



4.4 Health service acceptability among iCHF members

The data shows a high level of acceptability among respondents regarding various aspects of healthcare services (table 4). Specifically, 75.4% were satisfied with health workers, indicating overall positive perceptions of the healthcare staff (table 5). The availability of acceptable medicine is affirmed by 71.2% who agree. The timeliness of health services is endorsed by 71.4% who agree, suggesting that most respondents are satisfied with the promptness of the healthcare services provided. Additionally, the referral systems are considered acceptable by 72% who agree. Overall, after analysis, results indicated that 68.7% of the 479 respondents found the health services acceptable, while 31.3% did not, reflecting a generally high level of acceptance with the services provided.

Table 4: Health Service Acceptability among iCHF membes

	Acceptability of Health Services		
	Not acceptable n (%)	Acceptable n (%)	Total
N	**150 (31.3)**	**329 (68.7)**	**479 (100.0)**

Table 5: Health Service Acceptability responses among iCHF membes

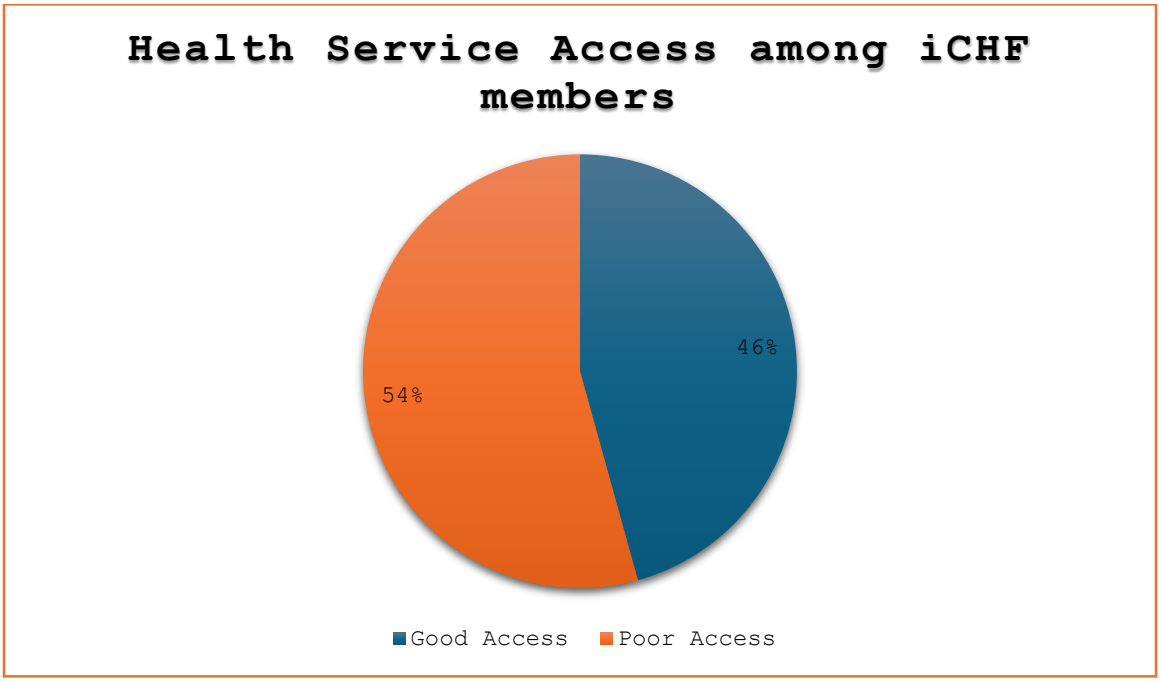
Domain	Responses in percentage (%)
Facility has satisfactory health worker	
disagree	**17 (3.5%)**
Neutral	**73 (15.2%)**
Agree	**361 (75.4%)**
strongly agree	**28 (5.8%)**
Facility has satisfactory medicine	
strongly disagree	**1 (0.2%)**
Disagree	**11 (2.3%)**

Neutral	**82 (17.1%)**
Agree	**341 (71.2%)**
strongly agree	**44 (9.2%)**
Facility provides health services time	
disagree	**16 (3.3%)**
Neutral	**88 (18.4%)**
Agree	**342 (71.4%)**
strongly agree	**33 (6.9%)**
Facility has satisfactory referral systems	
disagree	**9 (1.9%)**
Neutral	**87 (18.2%)**
Agree	**345 (72.0%)**
strongly agree	**38 (7.9%)**

4.5 Overall Level of Access of health services among iCHF members

Using a comprehensive assessment of healthcare services' acceptability, affordability, and physical accessibility, a significant majority of respondents expressed satisfaction with the acceptability and physical accessibility of services. However, concerns about affordability were prominent. After analyzing all the data, results revealed that more than half of the respondents, 260 (54.3%), reported poor access to health services, indicating significant barriers in obtaining needed healthcare (figure 4).

Figure 4: Health Service Access among iCHF members



4.6 Association between type of illness and access to healthcare service among iCHF members

After adjusting for other variables, the results show that, type of illness has a significant association with access to healthcare services (table 6). Individuals with non-infectious diseases report significantly better access compared to those with infectious diseases, with a crude prevalence ratio (PR) of 2.05 (95% CI: 1.37-3.07, p=0.001) and an adjusted PR of 1.85 (95% CI: 1.27-2.69, p=0.001).

Another association with significance was age, participants aged above 45years reported significantly better access compared to those with age 18 to 29 years, with a crude prevalence ratio (PR) of 2.83 (95% CI: 1.97-4.06, p <0.001) and an adjusted PR of 2.41 (95% CI: 1.67-3.46, p <0.001).

Table 6: Association of type illness and access of healthcare services

Characteristic	CRUDE PR (95%CI)	P-Value	ADJUSTED PR (95%CI)	P-Value
Age				
60 and above	2.93 (2.0-4.30)	<0.001	2.44 (1.66-3.59)	<0.001
45 - 59	2.83 (1.97-4.06)	<0.001	2.41 (1.67-3.46)	<0.001
30 - 44	1.51 (1.03-2.20)	0.033	1.45 (1.00-2.08)	0.047
18-29	1			
Gender				
Female	1			
Male	1.11(0.91-1.36)	0.283		
Education level				
higher education	1.08 (0.47-2.53)	0.846	1.08 (0.48-2.45)	0.847
secondary education	2.53 (1.15-5.55)	0.02	2.02 (0.94-4.35)	0.073
primary education	2.44 (1.10-5.39)	0.028	1.9 (0.88-4.13)	0.104
No formal education	1			
Occupation				
Employed				
Others	1.41 (0.63-3.15)	0.401		
Peasant	1.69 (0.79-3.58)	0.169		
Self-employed	1.49 (0.70-3.17)	0.297		
Income per month				
above 400,000	0.74 (0.29-1.83)	0.512		
200000-400000				
50,000 - 200,000	0.85 (0.69-1.04)	0.111		
Below 50,000	0.61 (0.29-1.29)	0.199		
Family size				
7 and above	1.29 (1.05-1.58)	0.013	1.14 (0.94-1.39)	0.183
1-6	1			
Distance to Health facility				

5 kilometers and above				
Less than 5 kilometers	0.87 (0.71-1.06)	0.159	1.01 (0.84-1.22)	0.891
Chronic disease in Family				
No	1			
Yes	1.12 (0.9-1.35)	0.266		
Disease Condition				
Infectious	1			
non-infectious	2.05 (1.37-3.07)	0.001	1.85 (1.27-2.69)	0.001

CHAPTER FIVE

5.0 DISCUSSION

The study aimed to evaluate health service access and associated factors among iCHF members at Same District Hospital in Kilimanjaro.

5.1 Affordability of health services among iCHF members attending Same District

The data underscores significant limitations in the iCHF's ability to provide comprehensive health service coverage without additional payments, with 45.9% of participants indicating that they incur extra costs for necessary services. This shortfall highlights a crucial gap in the iCHF's coverage, particularly for specialized health services that are not included in the basic insurance package. Additionally, there is a statistically significant correlation between income level and the perceived affordability of health services provided by iCHF, Lower-income individuals (earning between 50,000 - 200,000) and those earning below 50,000 may find the services affordable within the insurance package, likely due to targeted support or adequate coverage of essential services. In contrast, middle-income earners (200,000 - 400,000) face more financial strain due to the need for additional payments for services not covered by iCHF. High-income earners (above 400,000) generally find the services affordable, which aligns with their financial capacity to cover additional costs, these finds aligns with study done in Ubungo, assessing factors that affecting the implementation of iCHF.(14,42)

Comparative studies provide further context to these findings. For instance, Macha et al. (2014) conducted research on the Community Health Fund (CHF) in Tanzania and found similar affordability issues. They highlighted that lower-income households often face financial barriers despite being enrolled in community health insurance schemes. This aligns with the current study's finding that a significant portion of individuals in the lower-income bracket (50,000 - 200,000) find services not affordable. Their study suggests that to improve affordability, subsidies and more comprehensive coverage are necessary for lower-income households (53).

Further supporting these findings, a study by Chuma and Okungu (2011) in Kenya examined the impact of community-based health insurance on healthcare access. They found that while health insurance improved access to services, it did not eradicate out-of-pocket payments, which remained a significant burden for lower-income households. This mirrors the current study's observation that many iCHF members still find services unaffordable without additional payments, especially those in the lower and middle-income brackets (54).

Additionally, a study by Xu et al. (2006) on catastrophic health expenditure in low- and middle-income countries provides relevant insights. They found that health insurance schemes often do not cover all necessary services, leading to substantial out-of-pocket expenses that can push households into poverty. This is particularly pertinent to the current study, which shows that iCHF's inability to fully cover services results in financial strain for many members, particularly those with lower incomes (55)

A contrasting perspective is offered by a study by Msuya et al. (2007) in Tanzania, which found that enrollment in community health funds like iCHF can significantly reduce out-of-pocket payments and improve access to healthcare. However, they noted that the effectiveness of such schemes is highly dependent on the design and implementation, including the range of services covered and the level of financial protection provided. This study suggests that with proper adjustments, iCHF could potentially offer more affordable and comprehensive coverage, reducing the financial burden on lower-income members (16).

Overall, the data indicate that while iCHF aims to improve healthcare access, it falls short in providing fully affordable services, particularly for lower and middle-income households. Comparative studies highlight the need for enhanced financial protection and broader coverage to ensure that health insurance schemes like iCHF can effectively reduce out-of-pocket expenses and improve affordability for all income groups.

5.2 Health service acceptability among iCHF members attending Same District Hospital

Results shows a generally high level of acceptance with the services provided. This high level of acceptability aligns with findings from other research on community-based health insurance schemes. For example, a study conducted by Macha et al. (2014) on the performance of community health funds in Tanzania found that acceptability of health services was crucial for the success of such schemes. The study emphasized the importance of service quality and availability as key factors influencing community members' satisfaction/acceptance and continued enrollment in health insurance programs (53).

Another relevant study by Stoermer et al. (2012) on the impact of health insurance in rural Tanzania highlighted that acceptability of healthcare services is significantly influenced by the perceived quality of care, including the presence of qualified health workers, availability of essential medicines, and efficient referral systems. The high acceptability rate observed in the current study suggests that iCHF has made strides in addressing these critical components, thereby enhancing members' satisfaction with the services provided (45).

Furthermore, a study by Basaza et al. (2008) on the implementation of community health insurance in Uganda provides additional insights. It showed that high acceptability of health services is often associated with improvements in service delivery and infrastructure, which can be attributed to increased funding and better management under health insurance schemes. This mirrors the situation in Same district, where iCHF initiatives likely contributed to improved service delivery, leading to higher acceptance among community members (56).

Overall, the data indicates that the iCHF has positively impacted the acceptability of healthcare services among its members in Same district. This is consistent with findings from other studies, suggesting that community-based health insurance schemes, when effectively implemented, can significantly enhance the acceptability and perceived quality of healthcare services. However, it is also important to address the concerns of the 31.3% of respondents who did not find the services acceptable, as their feedback can provide valuable insights for further improving the iCHF program.

5.3 Physical accessibility of health service among iCHF members

Most respondents found health facilities physically accessible, a higher percentage lived within 5 kilometers of the hospital.

Research on rural health service access underscores the critical role of distance in health service utilization. Studies in Tanzania and other developing countries have shown that individuals living more than 5 kilometers from health facilities are less likely to seek timely medical care, often due to transportation challenges and poor road conditions. For example, Kavishe et al. (2018) and Mubyazi et al. (2014) highlighted the barriers posed by long distances and inadequate infrastructure in rural Tanzania, leading to reduced healthcare utilization and poorer health outcomes.(57,58)

Community-based health insurance schemes like iCHF aim to improve financial access to healthcare but often do not address physical barriers effectively. Haazen (2012) and Kiwara et al. (2015) found that while these schemes reduce out-of-pocket expenses, physical accessibility remains a significant challenge, particularly in remote areas.(59) To improve health service access, strategies must address both financial and physical barriers, including enhancing transportation infrastructure and ensuring the availability of nearby health facilities. This integrated approach is essential to maximize the benefits of community health funds and improve health outcomes in rural regions.

5.4 Level of Access of health services among iCHF members

The study reveals concerning data, more than half of the respondents, reported overall poor access to health services. This highlights significant barriers to obtaining needed healthcare and points to systemic issues that need addressing to improve service delivery.

A study by Jütting (2004) on the effects of health insurance on access in low-income countries suggests that community health funds can improve access but are often limited by insufficient coverage and financial constraints of the members. The study's findings indicate that for health insurance schemes like iCHF to be effective, they must be adequately funded and managed to ensure broader and more inclusive coverage, particularly for low-income groups who are often the most affected by access issues (47).

Further, research by Basaza, Criel, and Van der Stuyft (2007) explores how community health insurance schemes in Uganda faced similar challenges. Their study found that despite the potential benefits of community-based health insurance, actual access to healthcare services often remained low due to high out-of-pocket costs and limited service availability. This parallels the findings in Same District, suggesting that the iCHF might need to adjust its coverage options and payment structures to reduce out-of-pocket expenses for its members (56).

Additionally, Spaan, Mathijssen, Tromp, McBain, and ten Have (2012) examine the link between health insurance and access to healthcare in Tanzania. They highlight that geographical and financial barriers significantly hinder effective utilization of insured services, which is consistent with the poor access reported by iCHF members in Same District. This research suggests that improving physical accessibility, perhaps through mobile clinics or transportation subsidies, could be vital for enhancing healthcare access (60).

Lastly, a study by Waelkens, Criel, and Soors (2017) on community-based health insurance in sub-Saharan Africa points out that successful schemes are those that integrate with local health service providers to ensure that healthcare delivery is efficient and meets the needs of the community. For iCHF, collaborating more closely with local healthcare providers and ensuring

that health facilities are adequately equipped and staffed may help mitigate some of the access issues experienced by members (61).

Overall, the findings from Same District underscore the need for comprehensive reforms in the iCHF program to address the barriers to healthcare access. Enhancing financial protection, reducing out-of-pocket costs, improving physical accessibility, and strengthening the capacity of local health facilities are crucial steps towards ensuring that all members can obtain the healthcare they need.

5.4 Association between type of illness and accessibility of healthcare service among iCHF members

The data from the study reveal a significant association between disease condition and access to health services among iCHF members. Specifically, individuals with non-infectious diseases report significantly better access to health services compared to those with infectious diseases. This suggests that the type of disease significantly impacts health service accessibility among iCHF members. The better access reported by individuals with non-infectious diseases might be due to the nature of chronic conditions requiring regular and ongoing care, which could prompt better integration into the healthcare system and more consistent access to necessary services.

Comparing these findings with other studies offers additional insights. A study conducted in Morogoro region of Tanzania deduced that long-term illness is associated with the enrollment and renewal of iCHF membership. This is because the benefits of accessing health services through iCHF are more cost-effective for individuals with long-term illnesses, which might be the case as in Same Distric Hospital (41).

A study by Carai et al. (2020) in Ghana found that individuals with chronic non-communicable diseases (NCDs) had better access to health services due to established healthcare pathways and programs focused on chronic disease management. Also, this aligns with the findings in the Same district, suggesting that the structured nature of care for NCDs might contribute to better access. Conversely, individuals with infectious diseases, especially in rural settings, often face significant barriers to access, as found in a study by Laar et al. (2019) in Uganda.

This study highlighted stigma and lack of resources as major barriers for individuals with infectious diseases, such as HIV/AIDS and tuberculosis, impacting their ability to access health services effectively.

In contrast, a study by Saeed et al. (2019) in Pakistan provides a different perspective. It found that individuals with infectious diseases, particularly those involving community health programs, experienced improved access due to targeted interventions and focused public health campaigns which indirectly improve other services such as Health insurance funds (62). This suggests that with adequate resources and targeted programs, the disparity in access for infectious disease patients can be mitigated.

Apart from type of illness, age also had significant association and access to health services in the Same district. Younger adults (18-29 years) reported the highest percentage of poor access, while older adults (60 and above) had the best access. This trend is supported by research from Macha et al. (2014), which found that younger adults in Tanzania often face financial and employment instability, leading to poorer healthcare access.

This highlights the importance of context-specific interventions and resource allocation in addressing access disparities. Overall, the findings underscore the need for tailored strategies to improve access for individuals with infectious diseases, ensuring they receive equitable care compared to those with non-infectious diseases.

CHAPTER SIX

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

The study aimed to evaluate health service access and associated factors among iCHF members attending Same District Hospital in Kilimanjaro. The results indicate significant gaps in affordability, physical accessibility, and overall access to health services despite high levels of service acceptability among respondents. A notable proportion of iCHF members, especially those in lower and middle-income brackets, face financial challenges due to additional costs not covered by the insurance scheme.

Type of illness affects access to healthcare services, with individuals suffering from non-infectious diseases reporting better access compared to those with infectious diseases. Additionally, participants aged above 45 years reporting better access compared to those of 18 to 29 years**.** This could be due to a higher awareness of the health system, greater likelihood of having chronic conditions that require regular visits, or better financial means among older populations. Younger individuals, on the other hand, may face barriers such as lack of awareness, lower income, or mobility challenges that limit their access to services

6.2 Recommendations

6.2.1 General recommendations for practice

1. Since the study found that almost half of participants perceive health services under iCHF as unaffordable, iCHF should expand its coverage to include essential and specialized health services to reduce the financial burden on lower and middle-income members. Implementing subsidies and offering comprehensive packages can help make health services more affordable, especially for vulnerable groups.

2. Although the majority found health services accessible, a significant minority did not. To address physical barriers, the President's Office - Regional Administration and Local Government and National Health Insurance Fund (NHIF) should invest in improving transportation infrastructure and increasing the number of health facilities

within accessible distances. Additionally, mobile clinics and community health outreach programs can help bridge the gap for remote and underserved areas.

3. Address Disease-Specific Barriers: Ministry of Health as policy maker and health planner should prepare targeted interventions and resources mobilization for individuals with infectious diseases. Reducing stigma, increasing the availability of specialized services, and ensuring equitable care through public health campaigns and focused community health programs can improve access for these patients.

6.2.2 Recommendation for further studies

1. Conduct qualitative studies to explore the specific challenges faced by different demographic and socio-economic groups and their influence on access to health services. This will provide deeper insights that complement the quantitative findings of this study.

2. Undertake comparative studies between iCHF and other health insurance schemes to evaluate their effectiveness, identify best practices, and highlight areas for improvement.

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APPENDICES

Appendix I: Consent form (English version)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

SCHOOL OF PUBLIC HEALTH AND SOCIAL SCIENCES

ACCESS TO HEALTH SERVICES AND ASSOCIATED FACTORS AMONG IMPROVED COMMUNITY HEALTH FUND INSURED PATIENTS ATTENDING DISTRICT HOSPITALS IN KILIMANJARO

Dear Sir/Madam

I Dr. CHANDE MAKARANGA, a postgraduate student pursuing Master's degree in Public health (MPH) at Muhimbili University of Health and Allied Science (MUHAS). I have been approved by MUHAS research committee and Same District Hospital to conduct a research as a necessary requirement for accomplishment of my postgraduate studies.

Aim of this study This study aims at determining access to health services and associated factors among improved Community Health Fund members attending District Hospitals in Kilimanjaro.

Confidentiality: All information gathered through questionnaires will not be disclosed to any one unrelated to this study. Only index numbers (rather than participant's name) will be used in questionnaires in order to maintain your privacy. The study results will be presented as overall reflection of the patients studied and not as a report for an individual study participant.

Benefits: The study may provide valuable information on peoples' ability to access health services among iCHF members. This will help the government on reaching goal of covering

more than 30% of citizens with iCHF.

Risks: There are no physical risks or discomforts expected to happen to you during and/or after participation in this study because this study is non-interventional, it only involves collecting information from the study participant.

Participation: Your participation in this study is purely voluntary and any decision you make will be respected. You may decide whether to participate or not to participate in the study after reading and understanding the consent form. You have the right to withdraw from the study at any point. If you agree to participate in this study, you will be required to sign an informed consent form to approve your willingness thereafter you will be interviewed.

CONTACTS: for any inquiry about this study, you may contact;

Dr Chande Makaranga
P. O. Box 65001, Dar es Salaam.
Mobile 0712492647
E-mail: chandey2004@gmail.com

For questions about your rights as a participant or any matters concerning ethical violation of the study, you may contact Chairperson of the research and Publications Committee, MUHAS. P.O. Box 65001, Dar es Salaam-Tanzania, Tel +2552150302-6.

PARTICIPATION DECLARATION

I…….**.....**have read the contents of this form and understand and my questions have been satisfactorily answered. I agree to participate in this study.

Signature of participant…… Date……

Signature of investigator …… Date…….

Appendix II: QUESTIONNAIRE (ENGLISH VERSION)

SECTION A: SOCIAL DEMOGRAPHIC INFORMATION

1. What is your age?	a. 18-29 b. 30-44 c. 45-59 d. 60 and above
2. Sex	a. Male b. Female
3. What is your marital status?	a. Single b. Married c. Divorced/widow/widower
4. What is your education level?	a. No formal education b. Primary education c. Secondary education d. Higher education
5. What is your occupation?	a. Employed b. Self employed c. Peasant d. Other_____
6. What is your average income per month in TZS?	a. Below 50,000 b. 50,000 – 200,000 c. 200,000 – 400,000 d. Above 400,000
7. What is your family size?	a. Small (1-4) b. Large (5-12)
8. How far to the health facility?	a. 5 kilometers and above b. Less than 5 kilometers
9. Is there a chronic disease or disability in	a. Yes b. No

the family	
10. What is the cause of attending to the facility?	a: infectious b: non infectious

SECTION B: ASSESSMENT OF ACCESS TO HEALTH SERVICES BY PATIENTS

Tick to the corresponding response

QUESTION:	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1. The health facility provides satisfactory health services.					
2. There are satisfactory health workers in the facility.					
3. Facility has satisfactory medicine.					
4. Facility has satisfactory medical equipment.					
5. Facility provides health services timely without delay.					

6. Facility has satisfactory referral system.					
7. Facility accommodates all clients with different age, sex, social class, ethnicity.					
8. There are affordable prices of medicine in the facility.					
9. There are affordable medical equipment example catheters, cannulas and syringes in the facility.					
10. There are affordable prices of medical investigations example full blood picture and ultrasound in the facility.					
11. There are affordable prices of medical procedure example wound dressing, catheterization in the facility.					

12. There is affordable referral process to higher medical facilities.					
13. There is a convenient and reliable transportation to the facility.					
14. There is convenient and reliable transport route to the facility.					
15. The facility is easily accessible.					

Thank you!!!!

Appendix III: Fomu ya Idhini (Toleo la Kiswahili)

MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES

SCHOOL OF PUBLIC HEALTH AND SOCIAL SCIENCES

ACCESS TO HEALTH SERVICES AND ASSOCIATED FACTORS AMONG IMPROVED COMMUNITY HEALTH FUND INSURED PATIENTS ATTENDING DISTRICT HOSPITALS IN KILIMANJARO

Salaam Ndugu,

Mimi Dr. CHANDE MAKARANGA, mwanafunzi wa Shahada ya Uzamili ya Afya ya Umma (MPH) katika Chuo Kikuu cha Afya na Sayansi Shirikishi Muhimbili (MUHAS). Nimeidhinishwa na kamati ya utafiti ya MUHAS na Hospitali ya Wilaya ya Same kufanya utafiti kama hitaji la lazima ili kukamilisha masomo yangu ya uzamili..

Dhumuni la utafiti: Utafiti huu unalenga kubainisha upatikanaji wa huduma za afya na mambo yanayohusiana na hayo miongoni mwa wanachama wa Mfuko wa Afya ya Jamii iCHF wanaohudhuria Hospitali ya Same mkoani Kilimanjaro.

Usiri: Taarifa zote zitakazokusanywa kupitia dodoso hazitafichuliwa kwa yeyote asiyehusiana na utafiti huu. Nambari za faharasa pekee (badala ya jina la mshiriki) ndizo zitatumika katika dodoso ili kudumisha faragha yako. Matokeo ya utafiti yatawasilishwa kama taswira ya jumla ya wagonjwa waliofanyiwa utafiti na si kama ripoti ya mshiriki binafsi wa utafiti.

Faida: Utafiti utaweza kutoa taarifa muhimu kuhusu uwezo wa watu kufikia huduma za afya miongoni mwa wanachama wa iCHF. Hii itasaidia serikali kufikia lengo la kuhudumia zaidi ya asilimia 30 ya wananchi na iCHF.

Hatari katika ushiriki: Hakuna hatari za kimwili, kiakili au usumbufu unaotarajiwa kukupata wakati na/au baada ya kushiriki katika utafiti huu kwa sababu utafiti huu si wa kitibabu, bali unahusisha tu kukusanya taarifa kutoka kwa mshiriki wa utafiti.

Ushiriki: Kushiriki kwako katika utafiti huu ni kwa hiari tu na uamuzi wowote utakaofanya utaheshimiwa. Unaweza kuamua kushiriki au kutoshiriki katika utafiti baada ya kusoma na kuelewa fomu ya idhini. Una haki ya kujiondoa kwenye utafiti wakati wowote. Ukikubali kushiriki katika utafiti huu, utahitajika kusaini fomu ya idhini iliyo na taarifa ili kuidhinisha nia yako baada ya hapo utashiriki.

MAWASILIANO: kwa uchunguzi wowote kuhusu utafiti huu, unaweza kuwasiliana na;

Dr Chande Makaranga
P. O. Box 65001, Dar es Salaam.
Mobile 0712492647
E-mail: chandey2004@gmail.com

Kwa maswali kuhusu haki zako kama mshiriki au masuala yoyote yanayohusu ukiukaji wa maadili ya utafiti, unaweza kuwasiliana na Mwenyekiti wa Kamati ya Utafiti na Machapisho, MUHAS. P.O. Box 65001, Dar es Salaam-Tanzania, Tel +2552150302-6.

TAMKO LA USHIRIKI

Mimi……..... nimesoma yaliyomo kwenye fomu hii na kuelewa na maswali yangu yamejibiwa kwa njia ya kuridhisha. Ninakubali kushiriki katika utafiti huu.

Sahihi ya mshiriki …… Date……

Saini ya mpelelezi …… Date…….

Appendix IV: DODOSO (TOLEO LA KISWAHILI)

SEHEMU A: TAARIFA ZA KIJAMII

11. Una umri gani?	a. 18-29 b. 30-44 c. 45-59 d. 60 na zaidi
12. Jinsia	a. Mume b. Mke
13. Hali ya ndoa?	a. Sijaoa/Kuolewa b. Katika ndoa c. Mjane/Nimeacha ndoa
14. Kiwango cha elimu?	a. Hakuna elimu rasmi b. Elimu ya Msingi c. Elimu ya Sekondari d. Elimu ya vyuo
15. Je unafanya kazi gani?	a. Nimeajiliwa b. Nimejiajili c. Mkulima/Mfugaji d. Nyingine_____
16. Kipato chako kwa mwezi kwa TZS?	a. Chini ya 50,000 b. 50,000 – 200,000 c. 200,000 – 400,000 d. Zaidi ya 400,000
17. Ukubwa wa familia yako?	a. Ndogo (1-6) b. Kubwa (≥7)

18. Je kuna umbali gani hadi Hospitalini?	a. Kilomita 5 na zaidi b. Chini ya kilomita 5
19. Je kuna ugonjwa sugu au ulemavu katika familia	a. Ndio b. Hapana
20. Je nini imekuleta Hospitalini leo?	a: Magonjwa yasiyo ya kuambukiza (non-infectious) b: Magonjwa yanayo ambukiza (infectious)

SEHEMU B: TATHMINI YA UPATIKANAJI WA HUDUMA ZA AFYA KWA WAGONJWA

Weka alama ya vema kwenye jibu lako.

MASWALI:	Nakubali Sana	Nakubali	Sipo upande wowote	Sikubaliani	Sikubaliani kabisa
16. Kituo cha afya kinatoa huduma za afya za kuridhisha.					
17. Kuna wahudumu wa afya wanaoridhisha katika kituo hicho.					
18. Kituo kina dawa za kuridhisha.					

19. Kituo kina vifaa vya matibabu vya kuridhisha.					
20. Kituo kinatoa huduma za afya kwa wakati bila kuchelewa.					
21. Kituo kina mfumo wa rufaa wa kuridhisha.					
22. Kituo kinapokea wateja wote wenye umri tofauti, jinsia, tabaka la kijamii, kabila..					
23. Kuna bei nafuu za dawa katika kituo.					
24. Kuna vifaa vya matibabu vya bei nafuu mfano catheter, cannulas na sindano katika kituo.					
25. Kuna bei nafuu za uchunguzi wa kimatibabu kwa mfano picha kamili ya damu na uchunguzi wa ultrasound katika kituo.					

26. Kuna bei nafuu za huduma za kitabibu mfano kusafisha jeraha, uwekaji catheter katika kituo.					
27. Kuna mchakato wa rufaa wa bei nafuu kwenda vituo vya ngazi ya juu.					
28. Kuna usafiri rahisi na wa kuaminika hadi kwenye kituo.					
29. Kuna njia rahisi na ya kuaminika ya usafiri kwenda kituoni.					
30. Kituo kinapatikana kwa urahisi.					

Ahsante!!!!

Appendix V: Approval for 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 INNOVATION

Ref. No.DA.282/298/01.C/ 2331

Date: 06/06/2024

MUHAS-REC-04-2024-2331
CHANDE ADAM MAKARANGA
SCHOOL OF PUBLIC HEALTH AND SOCIAL SCIENCES,
MUHAS.

RE: APPROVAL FOR ETHICAL CLEARANCE FOR A STUDY TITLED: ACCESS TO HEALTH SERVICES AND ASSOCIATED FACTORS AMONG IMPROVED COMMUNITY HEALTH FUND INSURED PATIENTS ATTENDING SAME DISTRICT HOSPITAL IN KILIMANJARO.

Reference is made to the above heading,

I am pleased to inform you that the Chairman 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: 06/06/2024
EXPIRATION DATE OF APPROVAL: 06/06/2025

STUDY DESCRIPTION:
Purpose:
the purpose of this prospective cohort study is to access to health services and associated factors among improved community health fund insured patients attending Same District hospital in Kilimanjaro.

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-%2014532.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. 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)
9. The PI is required to ensure that the findings of the study are disseminated to relevant stake holders.
10. 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 S. Masoud

For Chairperson, MUHAS Research and Ethics Committee

Muhimbili University of Health and Allied Sciences
DIRECTOR
Research & Publications
Box 65001

Appendix VI: Introduction letter

UNITED REPUBLIC OF TANZANIA
MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY
MUHIMBILI UNIVERSITY OF HEALTH AND ALLIED SCIENCES
OFFICE OF THE DIRECTOR – POSTGRADUATE STUDIES

In reply quote;
Ref. No. HD/MUH/T.666/2020

06th June, 2024

DISTRICT EXECUTIVE DIRECTOR,
SAME DISTRICT HOSPITAL,
P.O.BOX 10,
SAME.

RE: INTRODUCTION LETTER OF CHANDE ADAM MAKARANGA.

We would like to inform you that the carrier of this letter is Chande Adam Makaranga with registration number HD/MUH/T.666/2020 a student in the School of Public Health and Social Sciences, at Muhimbili University of Health and Allied Science (MUHAS), pursuing Master of Public Health (MPH)

As part of his studies, he will be doing a research titled **"ACCESS TO HEALTH SERVICES AND ASSOCIATED FACTORS AMONG IMPROVED COMMUNITY HEALTH FUND INSURED PATIENTS ATTENDING SAME DISTRICT HOSPITAL IN KILIMANJARO".**

The Ethical Clearance for doing the said research has been given by the University.

Kindly request your assistance and cooperation to our student.

Yours Sincerely,

Ms. Victoria Mwanilwa
For: DIRECTOR, POSTGRADUATE STUDIES.
cc: Chande Adam Makaranga

9 United Nations Road; Upanga West; P.O. Box 65001, Dar Es Salaam: Tel. G/Line: +255-22-2150302/6; Ext. 1015; Direct Line:+255-22-2151378;Telefax:+255-22-2150465;E-mail:dpgs@muhas.ac.tz;Web:https://www.muhas.ac.tz