

**DETERMINANTS OF PRIMARY HEALTHCARE SERVICES ACCESS BY NATIONAL
HEALTH INSURANCE FUND CAPITATED MEMBERS IN UASIN GISHU COUNTY,
KENYA**

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DECLARATION AND RECOMMENDATION

I declare that this thesis is my original work and has not been presented for the award of any degree in any other university that I am aware of.

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DEDICATION

This thesis is dedicated to my loving parents for setting the foundation for my academic journey and for their ongoing encouragement and support.

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ABSTRACT

The availability of primary healthcare services is critical to improving a country's health results. The capitated health model is one way to attain Universal Health Coverage (UHC) and increase access to health care services. Kenya's National Health Insurance Fund (NHIF) has adopted capitated health services to support Universal Health Coverage. Despite this, many NHIF members continue to have difficulty accessing primary healthcare services. This study objectives were to determine patient understanding of the NHIF benefit package, NHIF payment processes, healthcare service provider selection, and NHIF communication with citizens. The study primary score was to analyse the crucial of primary healthcare services access by national health insurance fund capitated members in Uasin Gishu county, Kenya. A review of the existing literature identifies several problems and limitations in the NHIF system. This survey was informed by adverse selection theory. A cross-sectional research design was used to gather quantitative data. The study looked at factors that influence access to primary healthcare services, such as affordability, availability, adequacy, and accessibility. The target population included all NHIF-registered members at public health facilities. A simple random sample method was used. Data was collected using structured questionnaires, some of which were graded on a Likert scale, allowing for the creation of descriptive statistics. SPSS version 25 was used to conduct data analysis, including descriptive and inferential statistics. To compare independent and dependent variables, bivariate analysis was used, with Chi-square tests. The study used Krejcie and Morgan's algorithm to sample 384 respondents from 1,000,000 NHIF-registered members across 90 facilities. According to the study, there was a significant correlation between each of the four distinct variables—patient comprehension of the NHIF benefit pack, NHIF premium payment procedures, NHIF capitated medical center selection, and NHIF communication with citizens—and the access to capitated health services. The four independent variables had p values less than 0.05 level of significance. These included the NHIF benefit package ($p = 0.001$), NHIF premium payment process ($p = 0.001$), health services service provider selection ($p = 0.001$), and NHIF communication with citizens ($p = 0.001$). The study model explained 45.4% of the difference in access to healthcare services and correctly identified 87.2% of those with access. The study suggested that in order to encourage and increase uptake and raise understanding of the health insurance plan for the informal sector, NHIF management in various facilities should regularly train NHIF members on their entitlements, premium payment procedures, healthcare service provider selection, and coverage penalties. They should also promote flexible M-pesa payment options, even in vernacular, to reach more people, especially in rural areas, and improve access. Additionally, streamlining NHIF processes and modernizing the physical and structural environments of healthcare institutions would promote health-seeking behavior and patient preferences.

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ABBREVIATIONS AND ACRONYMS

FBO	Faith-Based Organization
LMICs	Lower Middle-Income Countries
KeMU	Kenya Methodist University
MHO	Mutual Health Organization
MoH	Ministry of Health
NACOSTI	National Commission of Science and Technology and Innovation
NGO	Non-Government Organization
NHIF	National Hospital Insurance Fund
OOP	Out of Pocket Payment
PHCS	Primary Healthcare Service
SDG	Sustainable Development Goals
SERC	Scientific Ethics and Review Committee
SPSS	Statistical Package for Social Sciences
UHC	Universal Health Coverage
WHO	World Health Organization

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The primary concern for health systems is to restore, promote, and maintain people's well-being. The recommended six core components or building blocks essential to achieve the purpose of the health system are access to essential medicines, service delivery, health information systems, health workforce, financing, and governance (World Health Organisation [WHO], 2010a). The study focuses on health financing as the critical element in running the healthcare system and it involves elements such as rallying, acquiring, and allocation of money to cater for people's healthcare needs (WHO, 2010a). According to Liaropoulos & Goranitis (2015), a good health financing system should be able to sustainably raise adequate funds to enable people to access quality health services without financial hardship. Therefore, financing plays two critical roles in raising sufficient funds and providing financial risk protection.

The three key functions for health financing are purchasing services, revenue collection, and risk pooling. Narrowing down to purchasing, critical insight can be gained into how contracting, and payment of providers influence the cost and effectiveness of the healthcare system. Purchasing entails allocating funds to health service management to offer services two types of purchasing are passive and strategic purchasing. The strategic purchasing aims at identifying the best ways to maximize health system performance while passive purchasing takes into consideration a predetermined budget. Strategic purchasing is among crucial elements of Universal Health Coverage (UHC) due to its goal

of sufficiently raising money and maximizing the health system performance and efficient use of resources (Honda, 2014).

Three pure payment mechanisms are primarily used by healthcare systems: fee-for-service, salary, and capitation. According to Langenbrunner et al. (2009) capitation entails paying a fixed amount to healthcare providers to offer several services to an enrollee in each period. It is a provider payment model where providers are issued payments per member rather than for services. The adoption of capitation in a healthcare system provides several advantages. For instance, capitation is easier to manage and more cost-effective since the only aspect that is tracked is the number of members enrolled. There are no complicated billing codes and filing of paperwork to track different types of billing (James & Poulsen, 2016). Capitation promotes a focus on preventative care as it offers a more cost-effective for providers to focus on prevention rather than advanced and chronic health issues. Busby et al. (2018) suggest that decoupling remuneration from intervention care encourages a true preventing approach rather than the delivery of treatment. Hence, the focus on prevention results in an overall lower cost for accessing healthcare services. Globally, the capitation model is predominantly used in tax-based health financing systems such as Italy and the UK where general practitioners provide primary care to the population (Park et al., 2007). Nonetheless, with the renewed focus on cost-containment in the wake of rising health spending in comparison to aggregate income, capitation has been considered as a favourable model. Also, with the global commitment towards the adoption of Universal Health Coverage (UHC), many nations have considered the implementation of capitation combining it with other provider payments in a bid to

improve health system's efficiency and performance (Park et al., 2007; Feldhaus & Mathauer 2018). Therefore, capitation is considered critical in achieving the goals of UHC of reducing financial hardship although many nations have been reluctant to shift to a pure capitation model. Some of the reasons cited for the reluctance include a lack of proper incentive structures that will facilitate the rewarding of both insurers and practices and a negative impact on consumer welfare through restriction of provider choice (Koenecke, 2019).

The last decade has been characterized by Low- and Middle-Income Countries (LMICs) including African nations looking for ways to reform provider payments. Reforms have been spearheaded by the global commitment towards promoting UHC (Lagomarsino et al., 2012). Some of the countries that have sought to reform their health insurance models include Ghana, Rwanda, Kenya, Mali, and Nigeria. The countries have launched a national insurance model that utilizes capitation or with a mixture with other payment models such as fee-for-service (Lagomarsino et al., 2012). Hence, there is a general trend towards the implementation of capitation as one of the payment provider mechanisms to reduce Out of Pocket (OOP) expenditure for African citizens. However, various challenges have been encountered including political challenges, poor implementation, and anti-policy campaigners (Abihiro et al., 2021; Alawode & Adewole 2021; Nyandekwe et al., 2020). Hence, the successful implementation of the national health insurance capitation model remains to be seen on the continent.

Kenya's National Health Insurance Fund (NHIF) primarily uses capitation to pay for primary healthcare amenities. Munge et al. (2018) highlights that NHIF employs a public

contract model that involves contracting Faith Based Organisation (FBO), Non-Governmental Organization) NGO, private and public organizations to provide health amenities. Those in formal employment are required to enrol although it is voluntary for the unemployed. Enrolled members select the health facilities of their choice where they will obtain the outpatient services with capitation payments allocated for the enrollee to offer a predetermined set of outpatient services (Obadha et al., 2019). The capitation payment scheme is considered a key contributor to healthcare providers' overall revenues. The country has adopted a political commitment to implementing UHC by 2022. However, Obadha et al. (2019) claims that designing of these capitation schemes rarely console the management of healthcare facilities. Obadha et al. (2019) and Munge et al. (2018) identified inadequate capitation rates and payments delays as the main hindrances facing Kenya's healthcare system. As such, the implementation of capitation faces challenges which in turn hinder the benefits of efficiency and performance that would have been drawn from the payment model. Therefore, the research aimed at investigating the determinants of primary healthcare services access by NHIF capitated members in Uasin Gishu County.

1.2 Statement of the Problem

Ideally, capitation involves providers receiving a fixed fee for providing selected and agreed upon services for a given fixed period for each enrolled individual. The theory behind capitation is that it motivates providers to become proactive and shift towards preventive care thus resulting in lower hospitalization rates for patients (Koencke, 2019).

Consequently, the model can promote improved access to services while reducing the cost of healthcare. It would be expected that the implementation of capitation under the NHIF scheme would improve availability of public health services. However, Kenya's Big 4 Agenda to prioritize UHC adoption through the expansion of NHIF as part of achieving Sustainable Development Goals (SDGs), OOP spending remains to be the commonly used form of paying for healthcare expenditure (Barasa et al., 2018).

Out of Pocket spending is not limited to those without insurance and extends to those who have enrolled for NHIF services with some enrollees having to pay the health facilities for health services such as laboratory tests and medicines, despite having paid the monthly subscriptions to NHIF (Mwangi et al., 2019). As such, affordability of healthcare services is still an issue if capitated members are still required to pay for services.

Service availability is also a key issue due to the ambiguities of the NHIF in relation to the purchasing procedures. According to Munge et.al. (2018), some of the challenges they faced include inconsistencies in the way the NHIF outlines the health services to be acquired; discrepancies regarding which healthcare providers' members can access health services from; and irregularities contracting providers. Also, Mwangi et al. (2019) found that services such as NHIF prescribed medicines were not always available in capitated health facilities. Therefore, it is difficult to establish primary healthcare services that are available and can be accessed by NHIF capitated members.

Another challenge is health facilities receiving capitation payment offer low quality services in a bid to make huge profits at the expense of patients (Mwangi et al., 2019). Hence, existing services are not guaranteed to be adequate to meet the acceptable levels

of catering for all the needs of capitated members. In essence, despite the institutional reforms, capitated members are still likely to face dispute in accessing primary health care services. This prompts the researcher to explore how patient knowledge of NHIF benefit package, NHIF payment processes, health care provider selection, and NHIF communicating to citizens' influence patients' admittance to primary healthcare services.

1.3 Purpose of the Study

The research explored determinants of primary health care services access by NHIF capitated members in Uasin Gishu County, Kenya. Results of this study sought to inform NHIF's management, policy makers and implementors to undertake decisions that promote access to primary healthcare services among capitated members registered in the national scheme.

1.4 Study Objectives

The general objective was to establish determinants of primary healthcare services access by NHIF capitated members in Uasin Gishu County, Kenya. The proposed research further sought to achieve the following specific objectives:

- i. To determine how patient knowledge of NHIF Benefit Package influence patients' access to primary healthcare services in Uasin Gishu County.
- ii. To determine how NHIF premium payment processes influence patients' access to primary healthcare services in Uasin Gishu County.
- iii. To establish how healthcare service provider selection influence patients' access to primary healthcare services in Uasin Gishu County.

- iv. To determine how NHIF Communication to citizens' influences patients' access to primary healthcare services in Uasin Gishu County.

1.5 Research Questions

- i. How does patient knowledge of NHIF Benefit Package influence patients' access to primary healthcare services in Uasin Gishu County?
- ii. To what extent does NHIF Premium Payment processes influence patients' access to primary healthcare services in Uasin Gishu County?
- iii. To what extent does Healthcare Service Provider Selection influence patients' access to primary healthcare services in Uasin Gishu County?
- iv. How does NHIF Communication to citizens' influence access to primary healthcare services in Uasin Gishu County?

1.6 Justification of the Study

The adoption of UHC has been considered important in helping to improve the accessibility of health services to all while reducing the risks of impoverishment or financial hardship. However, despite progress towards adopting the capitated model in Kenya, members face significant challenges in accessing primary healthcare services. Out-of-pocket spending remains significantly high which disproportionately affects poor households (Barasa et al., 2018). Moreover, gaps exist when it comes to availing the capitated health services where NHIF does not cover all aspects of outpatient care (Kironji et al. 2019). This implies that the capitation model adopted in Kenya is still deficient and is not meeting the objective of providing affordable primary health care services. Therefore, undertaking this study focusing on the factors surrounding access to primary

healthcare services by NHIF capitated members was essential to identify the challenges and weaknesses that prevent achieving the goals of UHC.

1.7 Study Limitation

The research targeted NHIF accredited public health facilities in Uasin Gishu County, Kenya. Privately owned hospitals were excluded. Hence the study findings can be generalized to public facilities. Participants may give wrong or biased result due to social attractiveness bias or recall bias. Additionally, respondents' comprehension of the questions or their willingness to disclose certain information could vary, leading to inconsistencies in the data collected. This could affect the validity and reliability of the study's findings.

1.8 Study Delimitation

The scope of the research was limited to NHIF members enrolled under the National Scheme in the county and seeking primary healthcare services in public health facilities contracted to offer the services under the NHIF National Scheme. Specifically, the study sought information on patient knowledge of NHIF gain package, NHIF premium commercialism processes, selecting NHIF capitated wellness facilities, NHIF communication to citizens and the way these factors influence patient access to primary healthcare services in the county.

1.9 Significance of the Study

The capitated health model's supply of basic medical care is identified in the study as a requirement for fostering favorable healthcare results for a nation's populace. Capitated individuals are enrolled in the National Health Insurance Fund (NHIF), but they still have

trouble getting primary healthcare services. The purpose of this study was to ascertain if factors that affect citizens' ability to access primary healthcare services include patient awareness of the NHIF benefit package, the procedures for paying the NHIF premium, their choice of NHIF capitated medical centers, and NHIF communications to people. The findings will inform the management at NHIF regarding decisions that they should take to improve the utilization of services by capitated members including promoting understanding of the benefits package using an effective communication strategy. The study will also help the county government and policymakers to act towards addressing barriers to accessing primary healthcare services.

1.10 Assumptions of the Study

The research assumed equity among the enrolees in obtaining primary healthcare services by capitated members of the NHIF National scheme. It also assumed accreditation of selected healthcare providers and ownership of responsibility in the offering of primary healthcare services as proposed by NHIF. In addition, it assumed that both the formal sector and the informal sector receive similar benefit packages. The researcher also assumed that all respondents provided genuine responses.

1.11 Operational Definition of Terms

Access	To obtain selected healthcare services while incurring the least amount of hassle and expense possible and includes affordability, availability, adequacy, and accessibility.
Capitation	Fee payment to health care provider, such as health insurance, in which a predetermined amount is paid for an

	individual for a given period, regardless of whether the individual obtains the services or not.
Capitated members	Citizens who have enrolled and to whom NHIF assumes financial responsibility for their primary health services.
Benefits Package	Is the total of health services that a member is entitled to for the premium paid to the Fund.
Outpatient Services	Health services provided to patients without admission to the facility.
Primary Healthcare Services	The initial contact with the public health facility aimed at addressing health problems of individuals
Universal Health Coverage	A framework designed to guarantee individuals subsidised health services, covers population, costs and services
Socio-demographic features	Features such as gender, age, level of income, marital status, occupation, education level, and the household size
Knowledge on NHIF Benefit Package	Patient knowledge on general consultations, basic lab investigations, prescriptions and administration of drugs, treatment for local diseases, minor surgical procedures, and inclusion of dependants.
NHIF Communication Mechanisms	How critical NHIF information is delivered to members, as well as the feedback systems in place such as mobile phones through SMS, radio, TV, billboards, and social billboard platforms like Facebook

Healthcare Service Provider Selection An activity conducted by registered members to choose an outpatient healthcare facility of their choice.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The relevant literature for each of the study objectives were evaluated and presented in this section. Foremost, several demographics of the participants such as education level, income status, household size, gender and age were considered. Next literature was reviewed on patient knowledge of NHIF benefit package which encompassed general consultation, basic investigations from the laboratory, administration of drugs, treatment

for local diseases, minor surgical procedures, and inclusion of dependents. Next, literature was reviewed on NHIF premium payment processes focusing on monthly premiums paid, process of how to pay, penalties in case of defaulting, payment schedule and waiting period before registration and accessing the services. On selecting an NHIF capitated health facility literature was presented on NHIF communicating rules of selection, adequacy of the facilities to choose from, and citizens' provision to choose a facility, on NHIF communication to citizen's literature was reviewed on NHIF language of communication, NHIF feedback mechanisms and frequency of communication. Literature on availing the primary healthcare services was reviewed as the dependent variable.

The chapter also reveals the theoretical and conceptual framework that elaborates on both independent and dependent variables of interest in the study.

2.2 Socio-Demographic Factors of capitated members in NHIF

2.2.1 Level of Education and Access to NHIF primary healthcare services

Education level influences uptake of NHIF services. According to Kim et al. (2013), health insurance appears to be a complicated product to its consumers and requires proper understanding to facilitate uptake. As a result, limited knowledge of UHC is likely to reduce the consumption of national health insurance. The study by Kituku et al. (2016) found that the enrolment to the health insurance schemes and education level were highly correlated. Similarly, the study by Mwaura et al. (2021) exploring the factors influencing the NHIF uptake found out that NHIF awareness and uptake were correlated with higher levels of education. There were increased odds of those with completed secondary education having an active health insurance in relation to those with completed primary

education with odds being even lower for those with no formal education. Hence, higher education levels were likely to result in improved awareness and uptake of insurance cover.

2.2.2 Income status and health insurance

The household income status significantly impacted their health expenditure and could be linked to the variations in OOP expenditure. The relationship can be rather complicated and requires considering healthcare expenditure in terms of both absolute and relative terms. In absolute terms, poor households may appear to have lower OOP (Chuma & Maina, 2012). The observation can be mistaken to imply that wealthier households face a higher cost burden in accessing primary healthcare services. However, studies such as Salari et al. (2019) and Njagi et al. (2020) have found out that poor households had lower absolute OOP healthcare expenditure than wealthier households' relative expenditure about their income was significantly higher. Moreover, the study by Barasa et al. (2018) revealed that paediatric OOP expenses were statistically higher in poor households. The location of the household can also influence proportion of OOP from the entire income. Chuma and Maina (2012), it was found that mean healthcare expenditure was greater for urban dwellers than the rural areas. Nonetheless, it was established that expenditure as a percentage of the household income was higher for rural households in relation to the urban ones. Therefore, it is evident that lower-income households are likely to face barriers in accessing quality primary healthcare services.

2.2.3 Family size and uptake of health insurance

The family structure and dynamics can influence the uptake of insurance coverage. One factor that influences the uptake of NHIF medical cover is marital status. The investigation by Kituku et al. (2016) establishes a correlation between uptake of the NHIF medical scheme and marital status. The higher rate of insurance cover in married couples is attributable to the health needs of the dependents and a higher combined household income making them afford premium payments. Household size and dependents such as children can also influence the commitment to enrol for NHIF. In the study by Ndungu (2015) investigating the factors influencing usage of NHIF established that large households especially those with more children were more likely to be enrolled for NHIF cover. Therefore, factors such as marital status and the number of dependents is likely to increase the likelihood of enrolment.

2.2.4 Age of individuals and uptake of NHIF cover

Some studies have shown that there is a correlation between the age of individuals and their uptake of NHIF cover. For instance, the study by Ndungu (2015) found out that respondents aged 46 years and above were more likely to have NHIF policy. In another study, Mwaura et al. (2021), established that NHIF uptake increased from 12.7% among 18–29-year-olds to 28.2% among those aged 70 years and above. A factor contributing to higher uptake with increasing age is the likelihood of older individuals facing increased risk of health conditions. The study also established that high health risk was correlated with higher uptake (32.4%) in relation with low-risk health. Therefore, older individuals are more likely to have higher uptake of insurance coverage.

2.3 NHIF Benefit package

Despite the NHIF Cover being beneficial to the patients, the scheme has not been fully supported by the members, the service delivery partners, and health care providers. The historical scepticism is owing to lack of perceptiveness of the benefits bundle, a significant constituent in enactment of universal health cover. Given the limited financial resources of the NHIF system, the benefit package should be as comprehensive as possible. The benefit package specifications should consider population preferences while also considering efficiency and equity to guarantee that resources are not wasted. Most significantly, patients should obtain effective services from the specified benefit package.

The benefit package is not sufficiently defined to enable NHIF staff to sell the cover. Besides, it is challenging for the members to understand their entitlements and healthcare providers. Similarly, it fails to give clear definition to the healthcare providers on the services they should offer to the members. Nevertheless, the NHIF benefit package is in line with the Essential Package of Health services (EPHS) which are services a government provides or aspires to provide equitably.

2.3.1 General consultations

National Health Insurance Fund (NHIF, 2015) proposes inclusion of various benefits such as preventive and curative components. Also, the inpatient and outpatient services should entail laboratory analysis, consultation, midwifery services, surgery, and drug administration.

The apprehension of the NHIF benefit bundle is critical in achieving the universal health cover. The scheme has continually improved the services available to its members, for instance, the implementation of NHIF Strategic Plan 2014-18 has introduced new

packages. The new packages were introduced in 2016 after the review of the member's monthly contributions (NHIF, 2018). The package accommodates the members to supplement the cover through direct payment or private insurance, making the scheme inclusive of various households with different income levels.

Nevertheless, the utilization of healthcare services was inadequate since the implemented co-payments were considered unaffordable. Mulupi et al. (2013) provided the evidence by examining the perception of the community on health insurance and their suggestions on preferred features. The author discovered that the acceptance of a health scheme is high when they understand its benefits and the key components. Hence, the public need to be sensitized on the benefits and various elements of the scheme to promote awareness, giving solution to the ailing healthcare system.

2.3.2 Basic lab investigations

Studies have explored whether patients have critical knowledge and understanding of the insurance scheme including the coverage they are entitled to when they are enrolled. For instance, while exploring the determinants of NHIF utilization among private university employees, Kironji et al. (2019) provided a different perspective regarding the issue of knowledge of the NHIF benefit package. Their investigation provides a counterargument where it was determined that members did understand what they were entitled to including services such as consultation, nursing, drugs administration, midwifery services, and laboratory investigations. Mwangi et al. (2019) also established that majority of members could understand their entitlement although some respondents were not sure of their entitlement and ongoing support.

Similarly, Kironji et al. (2019) admitted that a lack of understanding could arise due to the use of outpatient services on a need basis and members sought to get to know the services when they demanded it. A possible difference can be attributed to recent steps by the NHIF to employ different media channels to inform the public (Mbau et al. 2020). Nonetheless, there are still challenges to understanding the scheme's benefits package as members tend to not have prior knowledge unless they seek it when they need services.

2.4 NHIF Premium Payment Processes

2.4.1 Monthly premium paid

Analysis of the patient's knowledge regarding payment of premiums reveals gaps and a lack of proper understanding of how the NHIF scheme works. For instance, while exploring how the Kenya community perceive health insurance Mulupi et al. (2013) found out most people believe that only those in the formal sector are eligible for the NHIF because of the expensive premium paid. Concerns were also raised regarding NHIF catering for the wealthy population. The results reveal that many people are not aware of the different premiums offered by the scheme leading to the assumption that they can't afford the scheme. Hence, knowledge of the premiums to pay and process of payment depending on the level of employment is largely lacking. The lack of knowledge regarding premiums is not limited to those without NHIF. In the investigation carried out by Namuhisa (2014), up to 43% of individuals did not know how much the contributions were and 17.7% quoted the wrong premium. The results indicate that knowledge of the correct premium is largely lacking in most of the population which could also affect those without cover from joining the scheme.

2.5 Healthcare service provider selection

The choice of provider is a critical element that influences access to capitated services. The NHIF attempts to promote the choice of providers by contracting private, public, faith-based, and non-governmental organizations (NGOs) where the population can access healthcare services. To avail outpatient healthcare services, members are required to choose a health facility of their liking and register it with the insurer (Kironji et al., 2019). However, a key challenge has been members are not aware of capitation restrictions. Mbau et al. (2020) reported that a section of the members was not aware that they were needed to go only where they are capitated to access outpatient services but also did not know they could go anywhere for inpatient services. As such, the lack of awareness of provider options limits accesses to capitated services. Another factor linked to the choice of provider is the accessibility of NHIF accredited facilities.

In the research carried out by Ochieng (2015), it was reported by participants that access to NHIF accredited health facilities strongly influenced their decision to register with NHIF. The implication is that only individuals who have the choice of a provider accredited by NHIF are likely to register and therefore access capitated services. According to Mulupi et al. (2013), most members dropped out and new members failed to join the scheme due to the poor services offered at the NHIF accredited hospitals. Particularly, long wait time, rude staff, poor diet, overcrowded wards, and poor provision of other hospitality services.

According to Alhassan et al. (2015), there was a significant difference on various healthcare quality indicators between the health professionals and the patients in Ghana.

Majority of the health professionals considered the quality health care indicators to be satisfactory in the facilities accredited by NHIS, a perception that was not shared by the patients. Besides, as study by Al-Taïar et al. (2010) indicate that proximity to the healthcare facilities influenced utilization. For instance, the authors found an association between the driving distance, time and a straight-line distance with the vaccination rate. Straight-line distance where there were no road networks evaluated the access to the healthcare services. Less access to healthcare services necessitated greater efforts in providing vaccination and preventive healthcare services to population living far away in Yemen.

2.5.1 Rules of Selecting an NHIF capitated healthcare facility

According to a research conducted by Kazungu et al. (2023) on “Assessing NHIF members level of understanding, experiences, and factors influencing their choice of contracted outpatient facilities in Kenya”, the study showed that choice or selection of preferred outpatient facilities is done every June and December of the contract year and two key design features of the outpatient cover indicated were 1) to selectively contract facilities and capitate NHIF members to those facilities, and 2) to allow NHIF members to choose outpatients facilities of their choice with an opportunity to change a facility once every quarter (three months). The inclusion of these features was intended to not only drive down the costs of care but also encourage competition among providers which has been shown to enhance efficiency, quality of care, equity, and access to healthcare services.

Policies have been implemented in a bid to facilitate financial protection. For instance, the free maternity policy in 2013 resulted in available maternalistic healthcare in all national facilities. The subsequent Linda Mama program introduced in 2017 extended access to the private sector while also expanding the benefits package to include antenatal care and postnatal care (Orangi et al., 2021). The dismissal of fixed charge and the subdivision of insurance schemes have provided an opportunity to reduce OOP expenditures. User fees at the point of services such as registration for service, consultation fees, payments for drugs, and fees incurred for outpatient and inpatient services can be eliminated thus improving access (Dodd et al. 2006). However, there have been persistent disparities in utilization despite the reforms. Factors such as the difficulties in affording new premiums are critical barriers to increasing enrolment thus hindering accessing the primary healthcare services. Ilinca et al. (2019) found significant inequalities and inequities in all types of care services that favoured the rich. As such, the removal of user fees has not been met sufficiently in improving access to quality services.

2.5.2 Perception of Health Service Quality

Another factor influencing patient health-seeking behaviour is the perception of wellness services. The quality of wellness services is perceived poorly and thus likely to negate the uptake of capitated health services. In the study by Mulupi et al. (2013), it was suggested that dropout rates and discouraging enrolment to the insurance scheme propagated poor perception of quality of services at NHIF accredited facilities. In another study carried out by Barasa et al. (2017) aimed at coming up with ways the informal sector can enrol in a voluntary health insurance, the participants reported that the official benefit package was

different from the actual benefits received. Cross-sectional study by Kironji et al. (2019) provides further evidence where their findings indicate that the perceived image of NHIF could affect utilisation. Nonetheless, the findings also revealed that patients were likely to utilise the services due to absence of other similar health insurances offering similar services. Hence, the study by Kironji et al. (2019) provides an interesting perspective where the perceived poor quality of services may prevent uptake, but patients may still consider utilising NHIF capitated services due to lack of alternatives.

2.5.3 Preferences of Healthcare Facilities

NHIF provides members with the choice of their preferred healthcare facility. Hence, it can be argued that the strategy encourages patients to enrol and access NHIF services due to the ability to select where they can access capitated services. However, few studies have explored the issue of preference of healthcare facilities and how it influences access and uptake. The study by Ochieng (2015) highlights the issue of access to accredited facilities as influencing the choice of provider and enrolment for NHIF services. However, as pointed out by Suchman (2018), private providers only qualify for category B or C which cover fewer services than government hospitals. This is also confirmed by Sieverding et al. (2018) who found that a large majority of clinics had no accreditation although higher-level facilities were mostly accredited. As such, despite having a choice of their preferred provider, most patients especially those living in rural areas that are mainly served by clinics may have not been able to choose their preferred healthcare facilities. Thus, patients are likely to have limited options in selecting their preferred facility which could influence their decision in enrolling for capitated services.

2.6 NHIF Communication to Citizens

2.6.1 NHIF Channels of Communication

The NHIF has implemented various mass communication platforms to inform the public regarding its services. Mbau et al. (2020) evaluated the purchase reforms of UHC by the NHIF, it was established that some of the communication media used by the NHIF included television, radio, newspaper, social media, mobile phones, billboards, and sensitization campaigns. This would imply that the institution has undertaken a thorough approach to ensuring the public is adequately informed. However, participants' feedback revealed lack of proper communication to certain populations such as the uneducated, unemployed, poor, and people living in marginalized areas. Also, the study revealed low levels of awareness of the new premium contribution rates and the new benefits packages among these groups. Hence, information was often not clear leading to respondents not understanding the benefits and corresponding premium payments. Mwangi et al. (2019) supported the findings after conducting a cross-sectional study where the study found that approximately 57% of the respondents reported being provided information by NHIF while 43% reported NHIF not making any communication regarding the health services covered. As such, communication by NHIF has been lacking or largely inefficient in informing the public regarding its premium contributions and benefits packages.

2.6.2 NHIF Frequency of Communication

With regards to the frequency of communication, the participants in the research by Mbau et al. (2020) reported that the timing of communication such as revision of premium has been inconsistent leading to some individuals using the old premium rates and facing

penalties. Hence, the frequency of communication has been poor and inconsistent leading to members not having the correct information regarding changes and updates. A Study conducted by Munge et al. (2015) discovered that NHIF does not provide clear policy guidelines on the benefits members are entitled to. The author also posit that members are required to give a notification within 24 hours before admission to a healthcare facility and to avail necessary documents such as the membership card and the identification document. Equally, Kironji et al. (2019) highlights that there is no proper mechanism to collect feedback and handling of complaints from the members. Nevertheless, the organisation provides toll-free phone number for customer support.

Nonetheless, Ongiri and Kubani (2015) posit that NHIF creates awareness through listing the benefits on its websites in addition to advertising through broadcasting firms such as newspapers, radio, and T.V stations. It also organises forums with the stakeholders such as the healthcare providers and employers to sensitive on the services that the scheme covers. Besides, compliance officers engage employers on the services covered by the scheme, though it is not clear on how the information is disseminated to the employees. However, the members must utilize their card to be entitled of the benefits and outpatient services are provided at specified NHIF accredited hospitals.

2.6.3 NHIF Language of Communication

The NHIF has attempted to facilitate communication through using English and Kiswahili. However, unemployed, elderly, uneducated, poor, and persons living in marginalised areas are unlikely to understand the current language used. Mbau et al. (2020) blame the complex packaging and scientific language that is used to explain services and benefits

packaged in advertisements limiting the ability of citizens to understand their entitlements. Hence, the current language of communication used by the NHIF is not effective in promoting understanding of the benefits package which can act as a barrier to accessing primary healthcare services.

2.6.4 NHIF Feedback Mechanisms

The NHIF has attempted to use several mechanisms of fostering customer satisfaction by designing a feedback system embedded in the benefits package. The board of directors comprises stakeholders such as labour union representatives (Munge et al., 2018). However, Munge et al. (2018) argue that no legislation provides for feedback or complaints mechanism from members or beneficiaries. Moreover, their attempts to use the contacts and email addresses provided on the NHIF website were unsuccessful despite the toll-free number being specified as operating 24 hours. Hence, there was no evidence that the feedback mechanism was working and complaints or feedback from beneficiaries being considered when making changes to the benefits package. Their observation is collaborated by the stiff opposition that arises when NHIF officials suggest changes that involve increasing premium rates (Ongiri & Kubani, 2015). Therefore, NHIF feedback mechanisms are currently not effective resulting in feedback and complaints from beneficiaries not being considered when making changes to the benefits package.

2.7 Access to NHIF Primary Healthcare Services

Accessing primary healthcare services is outlined as one of measures for UHC. Although access can be described in terms of characteristics influencing the initial engagement with health care services, these factors vary and may include elements linked to demand,

supply, and processes. Levesque et al. (2013) define access variables to include supply-side aspects of healthcare scheme and form, need-side characteristics of people, and process-related section that indicate how access is achieved.

Hence, access can serve as a measure of performance when evaluating healthcare to identify gaps that prevent achieving UHC. Penchansky and Thomas (1981) model of obtaining healthcare proposes consideration of evaluating several indicators essential to obtaining healthcare services. The model proposes indicators such as coverage of health insurance, the convenience of care, proximity to healthcare centers, readily available necessary health care services, adequacy to attribute of care, affordability, and care methods.

2.7.1 Affordability of NHIF Primary Healthcare Services

Healthcare affordability is concerned with financial access to healthcare services. Kruglanski (2013) describes affordability as the individual's capability to meet amenity costs without financial stress. The concept entails the healthcare costs and other related indirect and opportunity costs such as time absent from work and costs of transportation. Lack of affordable healthcare can lead to financial and incidental costs that are likely to impose barriers to access and lead to unmet healthcare needs. Also, the health financial systems and the household's income influences the affordability. Insurance prepayments and pooling improves the financial affordability since it reduces the out-of-pocket payments. For instance, this can be done through revenue collection by government to fund the healthcare services. Besides, economic process side excitations such as cash transferral improve the financial furnish.

Economic utilization models are critical in providing information on demand elasticity of various healthcare services. The model comprises of variables such as the income, price, and quality of the healthcare, travel time, opportunity costs and provider's behaviour (Murray & Evans, 2003). Affordability consists of the ability to bring forth resources through savings, income and loan to cater for the healthcare costs without extreme expenditure on resources such sale of property (Mwangi et al., 2019). Poverty, indebtedness limits the ability of individuals to meet the costs of the needed care.

2.7.2 Availability of NHIF Primary Healthcare Services

Availing healthcare services is the act of healthcare facilities of the practitioners attending to the patients in this case physically and promptly to boost their wellbeing. Availability of healthcare is considered achieved when a physical presence of health resources exists with adequate capacity to deliver the required services (Levesque et al., 2013). Capacity to reach the service provider involves the individual mobility, availability of mode of transportation, and correct information about healthcare facilities that would enable patient to receive the quality and timely services. Mwangi et al. (2019) explains that Individual's mobility, transportation networks, occupational flexibility and one's knowledge on the health care services offered defines the ability to reach health care facilities. For instance, mobility restrictions due to age, disability, or inability of casual workers to skip working hours to seek medical attention.

2.7.3 Adequacy and Acceptability of Primary Healthcare Services

Services not only have to be available but adequate and acceptable to match the people's needs. Levesque et al. (2013) characterize adequacy as social and cultural factors deciding

individuals' plausibility to acknowledge the benefit and judged fitness for the people to look for care. Adequacy entails how healthcare providers provide integrated and continuous services appropriately and should be of high-quality.

According to Mwangi et al., (2019) appropriateness is a combination of acceptability and adequacy since access to healthcare services should not only be based on geographical availability and affordability, but also should factor in possibility of choosing acceptable and efficiently provided services. Ultimately, for one to access optimal healthcare services, they need to be fully engaged by interacting with nature of services offered (Levesque et al., 2013). The author further explains that acceptability incorporates social and cultural aspects such as sex, and beliefs to determine possibility for the people to accept services offered.

2.7.4 Physical Accessibility to NHIF Primary Healthcare Services

Accessibility concerns itself with equitable distribution of health providers considering the demographic composition of different regions. Availability of health facility with NHIF cover and offering quality services, and within the proximity to the individuals fulfils the prerequisite of physically available services. Readiness to provide a service exists when inputs such as health equipment, buildings, health personnel, medical and technologies are present to deliver a service are moreover accessible and of great quality (Kruglanski, 2013).

2.8 Theoretical Framework

2.8.1 Diffusion Theory

Developed by Lionberger in 1960, it is concerned with the spread of information through a five-stage process. The stages are awareness, adoption, trial, interest, and evaluation (Abbott & Yarbrough 1999). In essence, individuals are first exposed to information, they then become aroused with the possibility of using it, followed by evaluation of whether the information is beneficial, then a trial is done to determine conclusively that it is beneficial and finally acceptance of the information. The theory can be applied in understanding how people consider information about capitated health services.

2.8.2 Social Exchange Theory

Thibaut and Kelley (1959) proposed this theory to analyse relationships between people using benefits and costs. It asserts that people engage in behaviour that seeks to maximize benefits by incurring as little cost as possible. Hence, the theory suggests that individuals and groups engage in certain behaviours by factoring in the rewards and costs incurred. The behaviour expressed will seek to keep costs low and maximize rewards (Stafford, 2008). The theory can be used to explain people's behaviour towards purchasing insurance with the choice being influenced by whether maximum returns will be obtained by either purchasing or choosing not to purchase health insurance.

2.8.3 Adverse Selection Theory

Adverse selection refers to the behaviour where people use their knowledge of risks to maximize their outcomes at the expense of others. It is relevant to health insurance since individuals who perceive themselves as more likely to use healthcare services will opt to purchase the most generous plans. Jowett and Ntoumanis (2004) argues that the insurer faces the problem of accurately assessing the quality of health of an individual. However,

it is the patient who has more accurate information about their health status which can influence their choice of purchasing insurance and the type of premiums. As observed by Morris et al. (2007), a high-risk individual will seek to be covered by health insurance while those who perceive themselves as low risk will avoid insurance until they find themselves requiring health care services. Adverse selection is likely to determine the people's decision in purchasing capitated health insurance.

2.8.4 Conventional Health Insurance Theory

It tries to explain the moral hazard concept in health insurance. The theory posits that people purchase insurance because they are averse to risk and becoming insured acts like a reduction in the prices of healthcare (Nyman, 2003). The argument on which the theory is based was first made by Pauly (1968) who suggested that there was nothing unethical if an insured individual used more services under an insurance contract that reduced the cost of health services at the point of contact. Arguments were made by economists that the difference between the high costs of resources required to provide services did not match the low insurance prices of insured consumers representing inefficiency that leads to a welfare loss to the society (Einav & Finkelstein, 2018). However, the theory suggested that there was no moral hazard as the mismatch in costs could be solved by methods such as co-insurance and increasing deductibles. The theory influenced the development of the managed care that is commonly applied in healthcare systems (Nyman, 2003).

2.9 Conceptual framework

The Conceptual framework depicts the study's uncertain of interest. Patient cognition of NHIF benefit package, NHIF premium payment process, selecting a health facility and

NHIF communicating to citizen's influence accession to primary health care employment are the independent variables. The indicators on patient knowledge of NHIF benefit package are general consultations, prescription and administration of drugs, treatment of local diseases, minor surgical operations, and inclusion of dependants. The indicators on premium payment processes include premiums to be paid, process of premium payment, penalty for defaulting, payment schedule and waiting period before registration and access of services. Indicators on selecting a health facility include rules of selection, preference of healthcare facilities, and adequacy of the facilities to choose from. Indicators on NHIF communication to citizens include feedback mechanisms channels, language and frequency of communication. Access to primary healthcare services as the dependent variable will be measured using the following indicators: affordability, availability, adequacy, and accessibility.

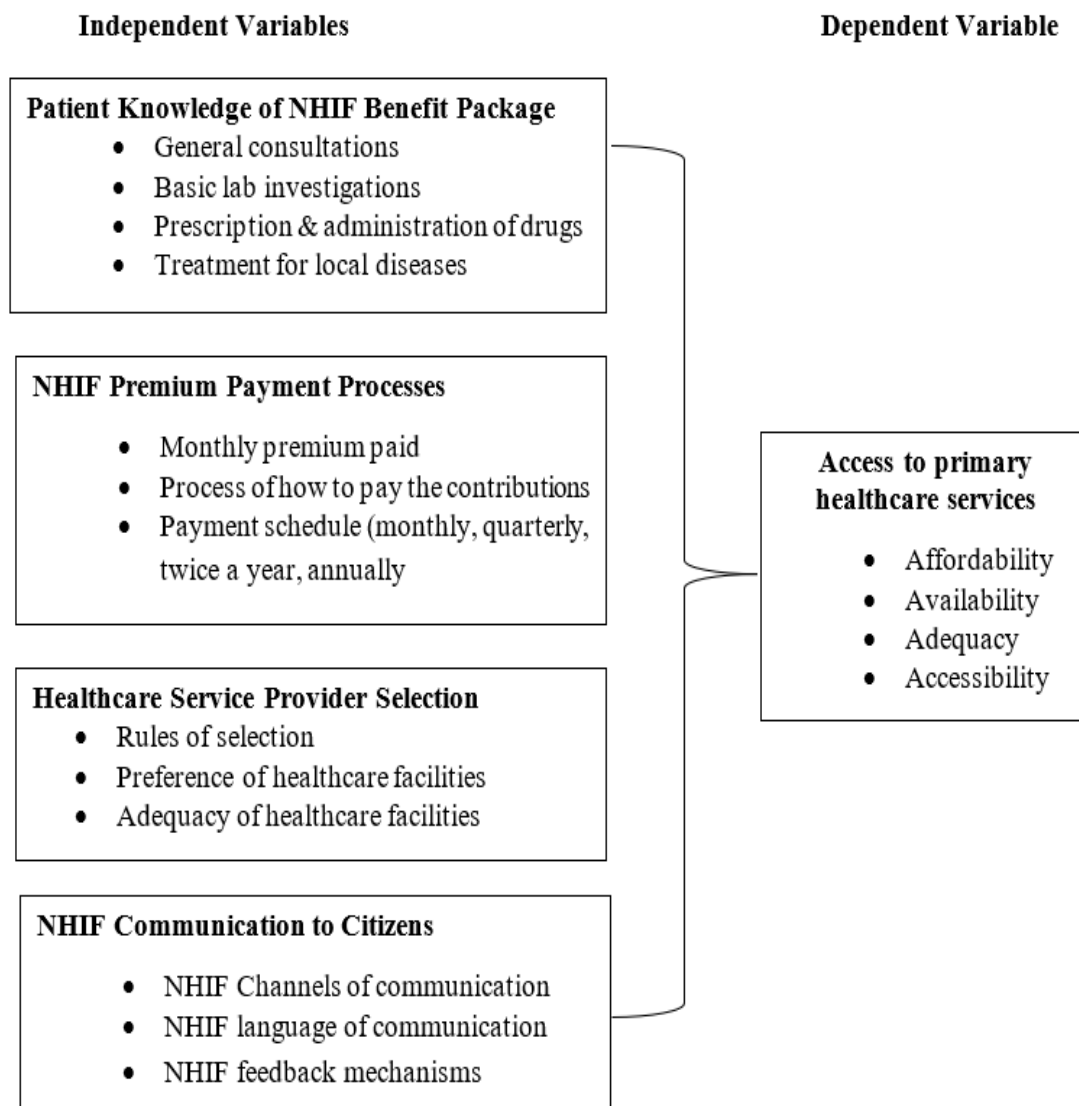


Figure 2.1: Conceptual framework

CHAPTER THREE

METHODOLOGY

3.1 Introduction

In this subdivision, the study elaborates on the method used, it includes the research design, sample size, data collection, sampling approaches, study setting, sample, instrumentation, operationalization of variables, and data analysis techniques. Also, ethical considerations that were adopted by the researcher.

3.2 Research Design

The study used an analytical cross-sectional research design. Data analysis was done using quantitative methodologies, the design was perfect because the study included collecting data using structured questionnaire from the entire study population. Kothari (2004) reveals that descriptive surveys are formalized structured fact-finding inquiries in the form of questionnaires to describe the existing status now and to describe the existing variables or conditions in a situation. As a result, it was the most effective technique for achieving the research goals.

3.3 Study Setting

Turbo, Ainabkoi, Soy, Kapseret, Moiben, and Kessess are the six sub-counties of Uasin Gishu County that were included in the study. The county borders Elgeyo Marakwet County to the east, Trans Nzoia County to the north, Kakamega County to the northwest, Baringo County to the southeast, Kericho County to the south, and Nandi County to the southwest. It was chosen specifically because of its high population, which was over 1.3 million in 2019 (Kenya National Bureau of Statistics [KNBS], 2019). The county's inter-

censal population growth rate is 3.6 percent, somewhat higher than the national rate of 2.9 percent, according to the CIDP 2018-2022 due to population's socioeconomic position. The poverty rate stood at 44.6% as of 2006 while the total population targeted for enrolment under the national is at 16.6% as of 2014. This affects how the population access primary healthcare services since the economic standing of a county illustrates the differences in the social economic position of the population, affecting purchasing power and primary care health services access. The county has 125 public health facilities, with 1 county referral hospital (level 6), 2 county hospitals (level 5), 11 sub-county hospitals (level 4), 88 dispensaries (level 2), and 23 health centers (level 3). The restoration of existing facilities and equipment, and construction of new health facilities has improved the quality health care offered especially in the rural areas.

3.4 Target Population

The population of study comprised of NHIF members certified under the NHIF National Scheme drawn from the six sub-counties. The study focused on those who sought primary healthcare services in public facilities accredited by NHIF National Scheme.

3.5 Sample Size Determination and Sampling Technique

3.5.1 Determination of Sample Size

Cooper & Schindler (2006) describes the sampling frame as a population from which the samples are drawn. The researcher used the Krejcie and Morgan (1970) formula to determine the sample size where the population was more than 10,000.

Formula for determining sample size

$$s = \frac{X^2 NP(1 - P) + d^2(N - 1) + X^2 P(1 - P)}{1 + \frac{X^2 P(1 - P)}{N}}$$

s = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size.

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05).

Source: Krejcie & Morgan, 1970

Therefore, a sample size (s) of 384 respondents/citizens was realized from a population size of more than 1,000,000 people.

From the 125 public health facilities in Uasin Gishu county offering outpatient services, 94 facilities were sampled based on a formula by Mugenda et al. 2012 when calculating sample size whose population is less than 10,000 as shown below.

$$Nf = \frac{n}{1 + n/N} = \frac{384}{1 + 384/125} = 94 * 90$$

The sample size 90 was used so as to give a reasonable estimate of the central tendency.

3.5.2 Sampling Technique

Mugenda and Mugenda (2003) indicates that a sample represent a small group that can be used to generalise the whole population. The 384 respondents were randomly selected from a population of more than 1million according to Krejcie & Morgan (1970) table. From the 125 NHIF accredited public health facilities, the research randomly sampled 90

facilities based on the formula above for determining sample size. From the 90 facilities, a proportionate number of 384 registered respondents was sampled. Simple random sampling was done from each of the 90 health facilities.

3.6 Instrumentation

Structured questionnaire (see Appendix 3) was appropriate in data collection for this study. As indicated by Kothari (2004), a questionnaire had a set of structured questions. The questionnaire was issued to respondents who could comprehend the inquiries and answer the questions with the end goal of the actual poll. The respondents were required to address the inquiries in a way that would sound natural to them. The questionnaire was divided into 6 sections containing; Section 1- Socio-demographic characteristics where gender, age, marriage status, number of children, education level, work, monthly income, and NHIF monthly contribution. Section 2 – patient knowledge of NHIF Benefit Package where respondents were required to indicate their knowledge on general consultations, basic lab investigations and prescription and administration of drugs among others. Section 3 –NHIF premium payment processes (monthly premium paid, process of how to pay and payment schedule), Section 4 – Selecting an NHIF capitated health facility (choice of facility, rules of selecting a facility and physical characteristics of the health facilities) Section 5 – NHIF Communication to citizens (language, regularity of communication, channels of communication, and feedback mechanisms). Section 6 – access to NHIF primary healthcare services (affordability, availability, accessibility, and adequacy). The questionnaire was in English language.

3.7 Data Collection Procedures

The data on knowledge of NHIF Benefit Package, NHIF premium payment processes, selecting a health facility and NHIF Communication to citizens was obtained via a five-point psychometric scale structured questionnaire (see Appendix 3). The participants were to give responses as per likert scale. The researcher paid a visit to the health facilities that were chosen. Before the questionnaire was issued, the randomly selected respondents were given a consent form (see Appendix 1) to fill out. Once the consent form was signed, the questionnaires were issued to the respondents. The respondents had 20 minutes to 40 minutes to complete all the questions before the researcher collected the questionnaires.

3.8 Pre-testing Data collection tool

The researcher conducted a pre-test study in Uasin Gishu County at two public health facilities (Moi Teaching & Referral Hospital & Kocholwo sub-county hospital) that were NHIF accredited under capitation in 2018. The sample had two public health facilities and 33 patients/citizens of Uasin Gishu County. The pre-test analysis was to determine the validness and reliableness of the data collection instrument.

3.8.2 Validity

This was done to evaluate the content sufficiency, flow, and accuracy of instruments in measuring the factors under investigation. Following the pre-test, the questions that were not well understood and required further clarification and elaboration resulting in low reliability results were altered to improve clarity. Some questions that showed repetition and were difficult to understand were merged and simplified. For example, “sometimes I am asked to co-pay for registration, consultation, medications and laboratory services”

changed to “I am never asked to co-pay for registration, consultation, medications and laboratory services”.

3.9 Operationalization of Variables

Table 3.9 1

Operationalization of Study Variables

	Variables	Indicators	Types	Data collection tool
Independent Variables	NHIF Benefit package	• General consultation • Basic lab investigations • Prescription & administration of drugs	Likert scale	Structured questionnaire
	NHIF Premium Payment Process	• Monthly premium paid • Process of how to pay • Payment schedule	Likert scale	Structured questionnaire
	Healthcare Service Provider Selection	• Rules of selection • Preferences of healthcare facilities • Adequacy of healthcare facilities		
	NHIF communication to citizens	• Uses a language I understand • Communicates to me regularly through SMS, newspaper, radio, TV • Guides me in the registration process	Likert scale	Structured questionnaire

Dependent variables	Access	● Affordability ● Availability ● Adequacy ● Accessibility	Likert scale	Structured questionnaire
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3.10 Data Analysis

3.10.1 Data Management

A quantitative methodology of data analysis was useful where questions under study were coded before running them through the Statistical Package for Social Sciences (SPSS version 25) for data analysis output. The study used logistic regression model to estimate and determine the relationship between the independent variable and dependent variable. Five-point Likert scale structured questionnaires collected the data for the study which were then converted into binary variables. Strongly agree and agree were recorded as 1 to show agreement to access, not sure, disagree and strongly disagree were recorded as 0 indicating disagree. Respondents who were not sure of services were not likely to access services and hence classified as disagree. Binary coding of the dependent variable was used to guide coding of the independent variables because patients can either have access or no access to primary healthcare services.

3.10.2 Data Analysis

The study investigated four independent variables; NHIF benefit package, NHIF premium payment processes, selecting NHIF capitated health facility and NHIF Communication to citizens, and the dependent variables (access to NHIF primary healthcare services). Summary statistics such as frequencies and percentages described the general characteristics of the factors under study. Also, bivariate and chi-square tests were conducted to determine the relationship between independent and dependant variables.

The strength of association was evaluated using an adjusted odds ratio at 95% confidence. The statistical significance was set to meet the threshold if (*p value*) was $p < 0.01$. The correlation between independent and dependent variables was determined using multivariate analysis by conducting logistics regression.

The model used in this study was as follows:

$$f(z) = \frac{1}{1 + e^{-Z}}$$

Where Z is a linear combination of the covariates expressed as:

The model employed in this study was formulated as follows:

$$Z = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4$$

where Z represents a linear combination of the covariates, with X1, X2, X3, and X4, being the independent variables (NHIF Benefit Package, premium payment processes, communication to citizens, and healthcare provider selection). The values of β_1 , β_2 , β_3 , and β_4 indicate the estimated increases in log odds of the dependent variable (access to NHIF primary care health services) for every unit increase in the corresponding independent variables, whereas β_0 represents the intercept. If the independent variable has no effect on the dependent variable, the odds ratio is 1. A higher odds ratio denotes a stronger correlation with risk, whereas a lower ratio signifies a lower risk or the capacity of the independent variable to attenuate the risk of access to NHIF primary care health services.

3.11 Ethical Considerations

Ethical approval was sought from the Kenya Methodist University Scientific and Ethics Review Committee (KeMU/SERC/HSM/22/2022) in Appendix 4, The National Commission of Science and Technology and Innovation (NACOSTI/P/22/19153) in Appendix 5 and County directors' approval in Appendix 6. Approval was also sought from facility management in Appendix 7. Also, an informed consent (see Appendix 1) was given by the respondents before they participated in the study. This involved creating a consent form that described what the study entailed, and everyone was required to signify their voluntary approval to participate. Steps were taken to ensure the data was free from any sensitive information and any identifying information that was inadvertently collected was removed from the final study.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1 Introduction

The study aimed at establishing the determinants of access to primary healthcare services of NHIF capitated members in Uasin Gishu County, Kenya. The chapter outlined the results and findings of the research in line with the variables investigated.

4.2 Study Response Rate

The study sample was 384 respondents drawn from 90 public health facilities. Out of 384 participants, 282 responded contributing to 73% response rate. A response rate of above 50% is adequate, 60% is good while 70% is excellent for analysis (Mugenda and Mugenda, 2009). Hence, the study's response rate of 73% was excellent for analysis and generalization of the study.

4.3 Reliability Results

Cronbach's Alpha reliability test was appropriate technique of determining the internal consistency of the research tool where a coefficient ranging from 0.7 to 1.0 was deemed acceptable for consistency. (Sekaran et al., 2002) stated that when the Cronbach alpha is closer to 1.0, the toll had high internal consistency reliability. The results are shown in Table 4.3.1.

Table 4.3 1

Reliability Statistics

Variable	Sample Size	Cronbach Alpha	No. of items
Knowledge of NHIF Benefit Package	33	0.807	6
NHIF Premium Payment process	33	0.753	5
Healthcare Service Provider Selection	33	0.669	6
NHIF Communication to citizens	33	0.771	6
Access to primary care services	33	0.832	10
Overall reliability	33	0.919	33

The pre-test reliability analysis results showed that the Cronbach Alpha rate was above 0.70, indicating that data collection tools for the four variables had internal consistency reliability.

4.4 Respondents Socio-Demographic Characteristics

The socio-demographic characteristics considered were gender, age, marital status, number of children, level of education, employment, monthly household income as well as NHIF monthly contributions. The findings are presented in Table 4.4.1.

Table 4.4 1

Respondents Socio-Demographic Characteristics (n = 282)

Description	Frequency (n)	Percentage (%)
Gender		
Male	143	51
Female	139	49
Age		
18-24	31	11
25-34	124	44
35-44	43	15
45-54	19	7
55-64	6	2
Above 65	1	-
Marital Status		
Single	111	39
Married	130	46
Cohabiting	19	7
Separated	12	4
Divorced	3	1
Widowed	5	2
Number of Children		
None	43	15
1-2	163	58
3-4	18	6
Level of Education		
None	4	1
Primary	11	4
Secondary	55	20
Certificate	56	20
Diploma	70	25
Graduate	71	25
Postgraduate	9	3
Any Other	3	1
Employment		
Employed	126	45
Self-employed	116	41
Student	31	11
Any Other	7	2

Description	Frequency (n)	Percentage (%)
Monthly Household Income		
Less than 10,000	71	25
10,001-20,000	62	22
20,001-30,000	68	24
30,001-40,000	39	14
40,001-50,000	15	5
Above 50,001	20	7
NHIF Monthly Contribution		
None	3	1
100-500	125	44
501-1000	66	23
1001-1500	13	5
1501-2000	19	6
Above 2000	5	1

The findings in Table 4.4.1 indicated that females accounted for 139(49%) while males were 143(51%). Further, the outcome implied that the workforce recruitment was gender balanced. The outcomes also showed that both male and female capitated members were covered in equal measures. Most 124 (44%) of the participant's age group were between 25 and 34 years, 43(15%) age group were 35- 44 years, 31(11%) had 18-24 years, 19(11%) were aged 45 -54 years, while 6(2%) age group were 55 -64 years. This meant that the largest age group of respondents fell between age 25 and 34 years and it is an age group that is at its optimum age for productivity and much focused on personal and organizational growth. The group had the highest probability of seeking health care services hence high rates of capitation subscription, contribution, and utilization.

The results depicted in Table 4.4.1 further informed that 130(46%) were married, 111(39%) were single, and 19(7%) were cohabiting. The results agreed with Kituku and Amata (2016) in his study about determinants of the uptake of NHIF medical cover by informal sector workers that there was a correlation between uptake of the NHIF national scheme and marital status. Hence, higher rate of insurance cover in married couples was attributable to the healthcare needs of the dependents and a higher combined household income, making them afford premium payments. In addition, the results showed that 12(4%) were separated, 5(2%) were widowed and 3(1%) were divorced. The results implied that majority were with partners and only a portion were single. Also, majority 163(58%) of the participants had 1-2 children and 43(15%) had zero children which was simply because majority were young age between 25 – 35 years hence fewer children. In addition, 18(6%) had more than two kids, implying that they had dependents who required specified level of health care hence the requirement of capitated membership.

As depicted in the table 4.4.1, most 71(25%) of the participants had undergraduate as the highest education level, 70(25%) had diploma, 56(20%) had certificate and 55(20%) had secondary education. While 11(4%) had primary education with the lowest at 9(3%) having attained postgraduate level of academic qualification. Since majority had achieved minimum academic and professional training, therefore had good comprehension of the NHIF procedures and terms. The findings agreed with Mwaura et al. (2021) that higher education levels result in improved awareness and uptake of insurance cover.

In addition, the outcome displayed that majority 126(45%) of the respondents were employed; 116(41%) were self-employed while 31(11%) of the respondents were

students. In addition, most 71(25%) earned less than Kshs. 10,000, 68(24%) had an income of Kshs 20,001 – 30,000 and 62(22%) had an income of Kshs. 10,001 – 20,000. Additionally, the findings showed that 39(14%) earned Kshs 30,001 – 40,000 while 20(7%) had a household income of more than Kshs. 50,001, and 15(5%) had a household income of Kshs. 40,001 – 50,000. The findings implied that the respondents had a household income sufficient to contribute to the NHIF every month.

Moreover, the collection showed that many 125(44%) of the responsive were paying a NHIF contribution of Kshs 100-500, 66(23%) were contributing Kshs 501 – 1000, 19(6%) were contributing Kshs. 1501 – 2000, 13(5%) were contributing Kshs.1001 – 1500, while 5(1%) were contributing more than Kshs. 2000. The results implication were that the participants understood the importance of making monthly contributions for health care. The findings were also in line with Chuma and Maina (2012) in their survey about harmful health care disbursement and poverty in Kenya that lower-income households are likely to face barriers in accessing quality primary healthcare services.

4.5 Patient knowledge of the NHIF Outpatient Benefit Package

The study aimed at establishing how patient knowledge of the NHIF benefit package influenced accession to primary health care employment by NHIF capitated members. The indicators considered were general consultations, laboratory analysis and administration of drugs, treatment for local diseases, minor surgical procedures, and inclusion of dependents. See Table 4.5.1.

Table 4.5 1

Patient knowledge of the NHIF Outpatient Benefit package

		Disagree	Not Sure	Agree
I am always entitled to;		n(%)	n(%)	n(%)
i.	General Consultation	23(09)	7(02)	252(89)
ii.	Basic Lab Investigations	23(09)	29(10)	230(82)
iii.	Prescription & administration of drugs	30(10)	24(09)	228(81)
iv.	Treatment for local diseases	25(09)	30(11)	227(80)
v.	Minor surgical procedures	44(15)	28(10)	210(74)
vi.	Inclusion of dependents	34(12)	38(13)	210(74)

According to the descriptive statistics presented in Table 4.5.1 above respondents understood their entitlement to; general consultation 252(89%), basic lab investigations 230(82%), prescription and administration of drugs 228(81%), and treatment of local diseases 227(80%). However, 28(10%), and 38(13%) were not aware of their entitlement of minor surgery inclusion of dependants, respectively. The respondents were aware of the various aspects regarding patient knowledge of the NHIF benefit package.

A study by Mwangi et al. (2019), evidently revealed that the public were not conversant with all the primary care benefit package offered by the NHIF scheme. Also, the outcome revealed that the answering were more cognizant of their entitlement to outpatient services as compared to other services in the benefit package. The study ascertained that the NHIF had continued to review the benefit package as per the Strategic plan 2014-18. Similarly, (Kironji et al., 2019) revealed that, while NHIF outpatient services were used, most members were only aware of them when they need them. According to the findings of this study, most respondents were aware of their entitlement to seek services such as consultation, laboratory analysis, drug administration, and treatment for local diseases but

they are unaware of their entitlement to less frequently requested health services such as surgical services, and inclusion of dependants.

The study results explained the current situation where the benefits of the cover was wide but the members were not aware of their existence. The study concurred with the study conducted by Mulupi et al. (2013) about insurance perception by the community, where the authors discovered that lack of understanding of the critical features of the cover inhibits utilization of the services. The researcher believes that creation of public awareness on the NHIF benefit package elements will promote the uptake of services.

4.6 NHIF Premium Payment processes

NHIF premium payment process assessed the respondents' perception towards knowledge of monthly premiums contributions, process of how to pay the NHIF contributions, penalties in case of defaulting to pay NHIF premiums, payment schedule, and ready and waiting period before enrollment and accessing the employment. The study sought to find out the agreement level to the statements below that related to NHIF premium payment processes. See Table 4.6.1.

Table 4.6 1

NHIF premium payment processes

I am aware of the following:		Disagree	Not Sure	Agree
		n (%)	n(%)	n(%)
i.	Monthly premium paid	15(5)	19(7)	248(88)
ii.	Process of how to pay NHIF contributions	18(7)	26(9)	238(84)

iii.	Penalties in case of defaulting NHIF premiums for 3 months	41(15)	45(16)	196(70)
iv.	Payment schedule (monthly, quarterly, twice a year, annually)	27(10)	26(9)	229(81)
v.	Waiting period before registration and accessing services	41(15)	40(14)	201(71)

Results show that 248(88%) of the respondents in agreement that they were cognizant of the NHIF to pay, 238(84%) agreed that they were aware of the process of how to pay the premiums/contributions, and 229(81%) agreed that they were aware of the payment schedule (monthly, quarterly, twice a year, annually). However, it was apparent that some of the respondents 40(14%) were not sure of waiting period before registration and accessing service, and 45(16%) are not certain of the punishment in case of break for 3 months.

Over time, it appeared that understanding of NHIF payment procedures, particularly premium payment, had improved. In contrast to a 2014 study by Namuhisa (2014) titled "Determinants of uptake of National Hospital Insurance Fund scheme by informal sector in Nairobi county," which found that not all respondents without NHIF were unaware of premiums, this study found that the majority of respondents (70%) were aware of these procedures. According to the investigation, 17.7% of respondents gave the incorrect premium quote, and up to 43% of respondents were unaware of the amount of payments. The findings showed that most people did not know the right premium, which prevented individuals without insurance from enrolling in the program.

This study findings agreed with a case study done by USAID on “ Kenya National Insurance Fund (NHIF) premium collection for informal sector” which addressed that to facilitate timely remittance of members contributions and maintenance of up to date payment information for individual accounts, the NHIF partnered with Safaricom limited to provide flexible and convenient platform for remittance for monthly insurance premium contributions from informal sector population and improve access and utilization of NHIF services. Furthermore, the study discovered that by allowing workers to make incremental contributions to their monthly premium, the M-pesa platform helped to reduce the frequency of NHIF penalty charge 5 times the monthly contributions amount for those who default in remitting contributions.

4.7 Selecting a NHIF capitated Health facility

On selecting a healthcare facility, the following indicators (rules of selection, preferences of healthcare facilities and adequacy of the healthcare facilities) were studied to establish patient knowledge that influenced patients access to primary healthcare services as presented in Table 4.7.1.

Table 4.7 1

Healthcare Service Provider Selection

Statement	Disagree n (%)	Not Sure n (%)	Agree n (%)
i. NHIF communicates the rules for selecting a healthcare facility	36 (12)	38 (13)	208 (74)
ii. NHIF provides an adequate number of health facilities for patients to choose from	54 (19)	39 (14)	189 (67)

Statement	Disagree n (%)	Not Sure n (%)	Agree n (%)
iii. I choose more than one facility under NHIF contracted facilities	74 (26)	41 (15)	167 (59)
iv. I choose the facility at my free will	35 (12)	33 (12)	214 (76)
v. The facility is close to my home	55 (19)	23 (8)	204 (72)
vi. Physical facilities are visually appealing	41 (15)	29 (10)	212 (75)

From the results presented in Table 4.7.1 it is evident that 214(76%) of the respondents chose the facility at their free will, 212(75%) agreed that the physical facilities were visually appealing, 208(74%) agreed that NHIF properly communicated on healthcare selection, and 204(72%) agreed that the facility was close to their home. However, some respondents 39(14%) were not sure that the scheme provided an adequate number of health facilities to choose from, and 41(15%) were also not sure that they could choose more than one facility accredited by NHIF.

The study results agreed with Mwangi et al. (2019) where most respondents 257 (65%) agreed that NHIF communicated to them the rules of selecting a health facility and that they 256 (64%) understood those rules. Majority 369 (94%) also agreed to have chosen the health facility at their free will. Majority 210 (53%) agreed that a person cannot choose more than one health facility under NHIF, this confirmed that they knew the rules of selecting health facility. Further, majority 235(59%) confirmed that NHIF provides adequate number of health facility for the patient to choose from and majority 201 (51%) also indicated that they had never changed their outpatient facility under NHIF. Which

implied that there was an improvement in the patient knowledge of selecting an NHIF capitated health facility.

The results of the study contradicted with the study by Busse et al. (2011) who established that consumers had the absolute right to choose a healthcare provider in most of the countries. For instance, in Sweden, patients have the entitlement of choosing hospital outside their country of residence, while English NHS increased the healthcare facilities from which members can choose. Nevertheless, in Kenya, NHIF scheme allows members to choose only one healthcare provider per beneficiary. The study by Busse et al. (2011) postulated that allowing the patients to choose from a number of service providers increased responsiveness. Further, the results agreed with the study by Okech and Lelegwe (2015) who revealed that members negate the benefits provided by the NHIF scheme by seeking services from private hospitals that were relatively expensive. This is because public facilities had inadequate infrastructure such as overcrowded wards, limited equipment and poor hospitality services.

4.8 NHIF Communication to Citizens

The study sought to find out to what extent the respondents agreed with the below statements. See Table 4.8.1.

Table 4.8 1

Descriptive Statistics on NHIF Communication to Citizens

To what extent do you agree with the following:		Disagree n(%)	Not Sure n(%)	Agree n(%)
i.	NHIF communicates to me regularly through SMS, Newspaper, Radio, TV	54(19)	18(6)	210(75)

ii.	NHIF uses a language I understand	22(7)	15(5)	245(87)
iii.	NHIF guides me in the process of registration	44(16)	43(15)	195(69)
iv.	NHIF provides me with all the information I require and need to know	47(17)	49(17)	186(66)
v.	NHIF states the range of services offered in each benefit package	53(19)	38(13)	191(68)
vi.	NHIF always responds to public complaints and feedback	93(33)	45(16)	144(51)

According to Table 4.8.1's results, 245 (87%) of those surveyed said that NHIF spoke to them in a language they could understand, and 210 (75%) said that NHIF often sent them messages via SMS, newspapers, radio, and television. These results were consistent with a research by Mwangi et al., in which 226 respondents (57%) said that NHIF gave them the knowledge they needed to make decisions and that NHIF had described the health treatments they were eligible for. 53(19%) of the respondents disputed that NHIF disclosed the breadth of services provided in each benefit package, and 93(33%) of the respondents disagreed that NHIF always addressed public concerns and criticism.

The study by Munge et al. (2017) constituted that NHIF communicated by publishing information through its websites and advertisements in media. The channels of communication used by the scheme limited the number of people who consumed the information, which agreed with this study's results that indicated 54(19%) felt the communication was not adequate. Deficient communication limits access to the primary healthcare since the members will not be aware of their entitlements. Under and over provision of healthcare services may result due to the asymmetry of message present between the service provider and the members. Equity and efficiency in healthcare

provision can be achieved by empowering the service supply and the members with the information by adopting effective communication channels (Carrin & Chris, 2005).

Moreover, Muthoni et al. (2021) established that a proper communication strategy and monitoring system would increase public awareness about the NHIF scheme. The study found out that 125(33%) of the participants indicated that NHIF had no proper mechanisms to respond to their feedback or complaints. The results supported Munge et al. (2017) discovery that NHIF act does not supply for proper performance to give feedback, and address complain. Further, Mwangi et al. (2019) explained that implementing complaint and feedback mechanisms influences purchasers' decision since there is improved responsiveness and they are held accountable. Nevertheless, the results from the study indicated that 51% of the members were slightly aware of existence of feedback mechanism in NHIF scheme. Despite, most national health systems having a complaint mechanism, they cannot be legally enforced, limiting the member's ability to state on quality of services provided (Figueras, 2005). Communication promotes public accountability and participation in making and implementing policies, necessitating for provision of clear information to the public. The provision of information is critical in ensuring equitable access of the primary healthcare services especially to the low-income households.

4.9 Access to NHIF Capitated Healthcare Services

The study based the access of healthcare services on various elements such as availability, physical accessibility, affordability, and acceptability as suggested by Levesque et al. (2013) and Kruglanski (2013). The response sought to determine if the members had

access to outpatient services. This was measured by the distance travelled to seek services, affordability in terms of premiums to be paid, and availability of services and drugs. Table 4.9.1 presents the results of the responses.

Table 4.9 1

Access to Capitated Healthcare Services

To what extent do you agree with the following;		Disagree	Not Sure	Agree
		n (%)	n (%)	n (%)
i.	Service providers are always willing to help patient	56(20)	23(8)	203(72)
ii.	Service providers give patients personal attention	58(20)	34(12)	190(67)
iii.	I feel safe while interacting with the hospital employees	47(17)	25(09)	210(74)
iv.	Attitude of the service providers is good	46(16)	26(09)	210(75)
v.	I get all prescribed drugs and services at the facility	101(36)	34(12)	147(52)
vi.	The staff are trained and qualified	31(11)	48(17)	203(72)
vii.	I have access to all NHIF outpatient services	57(20)	40(14)	185(66)
viii.	The waiting time is often not too long	77(27)	34(12)	171(61)
ix.	NHIF prescribed services are always available	68(24)	41(15)	173(61)
x.	I am never asked to co-pay for registration, consultation, medications, or laboratory services	226(80)	24(9)	32(11)

From the findings in Table 4.9.1, 210(75%) of the respondents agreed that the attitude of the service providers was good, 210(74%) agreed that they felt safe while interacting with

the hospital employees. In addition, 203(72%) of the respondents agreed that the staff were trained and qualified and the same 203(72%) also agreed that they were always willing to help patients. Furthermore, 190(67%) agreed that service providers gave patients personal attention, and another 185(66%) agreed that they had access to all NHIF outpatient services. 163(71%) also agreed that the NHIF prescribed services were always available and another 161(71%) also agreed that the waiting time was often not too long. However, the findings indicated 226(80%) of the respondents disagreed that they were never asked to co-pay for registration, consultation, medications, or laboratory services and a few 101(36%) disagreed that they get all their prescribed drugs and services at the facility. The results showed that the respondents were cognizant of the different indicators of the patient health-seeking behaviour.

4.10 Chi Square Measure of Association

The purpose of the cross tabulations was to determine whether the independent and dependent variables were related. By determining if there was a connection between the variables, the chi-square test was essential in assessing the interdependence of the variables. In order to test for variable independence, the study used Likert scale data that was subsequently converted to binary variables. Not sure, disagree, and strongly disagree were assigned as 0, indicating disagreement, while agree and strongly agree were recorded as 1, showing agreement to access. Respondents who expressed uncertainty about the services were categorized as disagreeing because they were unlikely to use them. The collected results are shown in Table 4.10.1.

Table 4.10. 1

Chi-Square Measure of Association

Variable	Sample Size (n)	χ^2	df	p-value
Knowledge of NHIF Benefit Package	282	57.597	1	0.001
NHIF Premium Payment	282	39.498	1	0.001
Selecting Health Facility	282	63.573	1	0.001
NHIF Communication to citizens	282	48.355	1	0.001

The Chi square results showed that knowledge of NHIF benefit package $\chi^2 (1, N = 282) = 57.597$, $p < 0.01$, NHIF premium payment $\chi^2 (1, N = 282) = 39.498$, $p < 0.001$, selecting healthcare facilities $\chi^2 (1, N = 282) = 63.573$, $p < 0.001$, and NHIF communication to citizens $\chi^2 (1, N = 282) = 48.355$, $p < 0.001$, all had a significant linkage with patient's access to NHIF health services. The significant results revealed by a P-value < 0.001 were an indication that the selected factors were not independent of each other. The results concurred with Figueras et al. (2005) that purchasing power of the services can be increased when members are aware of the requirement and entitlement through communication and other information transfer mechanism. Munge et al. (2017) agreed that NHIF delivered published information to their members through the NHIF website as well as the media advertisement such as TV, radio, and billboards.

4.11 Bivariate Analysis

Further, the study performed a bivariate analysis to establish the effect of the independent variables on the dependent variable. The analysis assumed that the independent variables had no interaction. The results are presented in Table 4.11.1.

Table 4.11. 1*Binary Logistic Analysis of citizens' engagement variables*

Variable	B	S.E	Odds Ratio	P-value	R ²	95% CI for Odds Ratio
NHIF Benefit Package						
Patients don't know benefit package (ref)			1.000			
Patients know benefit package	3.258	0.576	26.006	0.001	0.23	8.409-80.396
NHIF premium payment						
Patients don't know premium payment process (ref)			1.000			
Patients know premium payment process	2.525	0.480	12.490	0.001	0.16	4.884-31.930
Selecting health facilities						
Patients don't know how to select facility (ref)			1.000			
Patients know how to select facility	2.487	.351	12.030	0.001	0.27	6.028-24.011
NHIF communication to citizens						
Patient don't receive communication (ref)			1.000			
Patients receive communication	2.127	.334	8.389	0.001	0.21	4.302-16.359

The results revealed that citizen engagement factors had a strong significant associated with access to primary healthcare services under the NHIF national scheme. The study found that NHIF benefit package ($p < 0.001$), NHIF premium payment process ($p < 0.001$), selecting health facilities ($p < 0.001$) and NHIF communication with citizens ($p < 0.001$) all were significant with a p value less than 0.05 level of significance. The results indicated a significant association of each of the independent variables with access to primary healthcare services.

Patients who knew about the NHIF benefit package were 26.006 times more likely to access primary care health services than those who did not know (95% CI: 8.409-80.396, $P = 0.001$). Similarly, where knowledge on NHIF premium payment process were considered, patients were 12.490 times more likely to access primary care health services than where this knowledge was not known (95% CI: 4.884-31.930, $P = 0.001$). Where citizens understood the rules for selecting an NHIF capitated healthcare provider, patients were 12.030 times more likely to right primary care health services than where there the patients did not know the rules (95% CI: 6.028-24.011, $P = 0.001$).

Indeed, where there was NHIF communication patients were 8.389 times more likely to access primary care health services compared to those who did not have communication (95% CI: 4.302-16.359, $P = 0.001$).

The results for each variable were given by the Spearman's Rho (r) and its corresponding p value as indicated in the Table 4.12.1.

4.12: Spearman's rho measure of association

Using Spearman's rho measure of association, connections between Likert scales were reported. The sign of a Spearman's correlation coefficient, which ranges from -1 to +1, indicates whether a link is positive or negative. Furthermore, a positive correlation indicated a tendency for the other variable to increase along with the increase in the first, whereas a negative correlation indicated a drop in the second variable with the increase in the first. Stronger relationships are represented by numbers closer to -1 and +1 than by values closer to zero.

Table 4.12. 1

Spearman's rho measure of association

		Access to NHIF primary services	Knowledge of NHIF Benefit Package	NHIF Premium Payment	Selecting Health Facility	NHIF Commun ication to citizens
Access to NHIF primary services	Correlation	1.000				
	Coefficient					
	Sig. (2-tailed)	.				
	N	282				
Knowledge of NHIF Benefit Package	Correlation	.452**	1.000			
	Coefficient					
	Sig. (2-tailed)	.000	.			
	N	282	282			
NHIF Premium Payment	Correlation	.374**	.281**	1.000		
	Coefficient					
	Sig. (2-tailed)	.000	.000	.		
	N	282	282	282		
Healthcare service provider selection.	Correlation	.475**	.393**	.281**	1.000	
	Coefficient					
	Sig. (2-tailed)	.000	.000	.000	.	
	N	282	282	282	282	
NHIF Communication to citizens	Correlation	.414**	.334**	.321**	.307**	1.000
	Coefficient					
	Sig. (2-tailed)	.000	.000	.000	.000	.
	N	282	282	282	282	282

The results indicated that there was a positive correlation coefficient among the four independent variables with the dependent variable where Knowledge of NHIF Benefit Package $r = .452^{**}$, NHIF premium payment $r = .374^{**}$, selecting a healthcare facility $r = .475^{**}$ and NHIF communication to citizens $r = .414^{**}$.

4.13 Multivariate (Binary Logistics) analysis

A multivariate analysis was done on the four variables (benefit package, premium payment process, selecting health facility, and communication by the NHIF) to evaluate the combined effect on patient access to primary healthcare services. The research performed a logistic regression to determine the likelihood of the factors affecting access of the NHIF outpatient services in guaranteeing an increased in their accessibility. To ensure that the study model was correctly specified, the researcher employed the Hosmer and Lemeshow Goodness-of-fit test (GOF) (see Appendix 8). A statistically significant results were obtained from the logistic regression model ($\chi^2(2) = 2.469, p = 0.291$). Results of the odds ratio and the levels of significance are presented in table 4.13.1

Table 4.13. 1

Odds ratio and the levels of significance

Variable	B	S.E	Odds Ratio	P-value	95% CI for Odds Ratio
NHIF Benefit Package					
Patients don't know benefit package (ref)			1.000		
Patients know benefit package	2.227	0.688	9.274	0.001	2.472 – 34.792
NHIF premium payment					
Patients don't know premium payment process (ref)			1.000		
Patients know premium payment process	1.675	0.607	5.339	0.006	1.500 – 19.011
Healthcare service provider selection					
Patients don't know how to select facility (ref)			1.000		
Patients know how to select facility	1.809	.414	6.101	0.001	2.722 – 13.671
NHIF communication to citizens					
Patient don't receive communication (ref)			1.000		
Patients receive communication	1.360	.413	3.896	0.001	1.728 – 8.781

The results indicated a significant association of each of the independent variables with access to primary healthcare services. Patients who knew about the NHIF benefit package were 9.274 times more likely to access primary care health services than those who did not know of NHIF benefit package 95% CI of 2.47 – 34.792 ($p = 0.001$). Where there was knowledge on NHIF premium payment process, patients were 5.339 times more likely to access primary care health services than where there was no knowledge about the NHIF premium payment process 95% CI of 1.500 – 19.011 ($p = 0.001$). Where patients understood the rules for selecting an NHIF capitated healthcare provider, they were 6.101 times more likely to access primary care health services than those who did not know the rules 95% CI of 2.722 – 13.671 ($p = 0.001$). Indeed, where patients received communication from NHIF, they were 3.896 times more likely to access primary care health services than those who did not 95% CI of 1.728 – 8.781 ($p = 0.001$). At the significance level of 95%, the four independent variables (Socio-demographic characteristics, patient knowledge of NHIF benefit package, NHIF premium payment processes, selecting a healthcare facility and NHIF communication to citizens) were significant predictors of access to capitated health services with significance values of $p = .001$.

The study found that socio-demographic characteristics ($p = .001$) significantly and positively influenced the access to capitated health services. The findings agreed with Kituku and Amata (2016) that the access to education level and health insurance were highly correlated. Also, the findings agreed with Mwaura et al. (2021) that the uptake

factors linked to the access to NHIF services and awareness were correlated with higher levels of education.

Moreover, the findings agreed with Chuma and Maina (2012) that poor households may appear to have lower. Also, the results agreed with Salari et al. (2019) and Njagi et al. (2020) that poor households had lower absolute OOP healthcare expenditure than wealthier households' relative expenditure about their income was significantly higher. In addition, the study was in line with Ndungu (2015) that marital status and the number of dependents is likely to increase the likelihood of enrolment. The results were similar to Mwaura et al., (2021) and established that NHIF uptake increased from 12.7% among 18–29-year-olds to 28.2% among those aged 70 years and above

Patient knowledge on NHIF benefit package significantly and positively influenced the access to capitated health services. The results concurred with Mwangi et al. (2019) where majority of members could understand their entitlement although some respondents were not sure of their entitlement and ongoing support. Further agree with Kironji et al. (2019) that a lack of understanding could arise due to the use of outpatient services on a need basis and members sought to get to know the services when they demanded it. Also the findings agree with Mulupi et al., (2013) that most people believe that only employees in the formal sector qualify for the NHIF due to the high cost of premium paid. The findings are in line with Namuhisa (2014) that up to 43% of individuals did not know how much the contributions were and 17.7% quoted the wrong premium.

NHIF communication to citizens significantly and positively influenced the access to capitated health services. The findings agreed with Mbau et al. (2020) that the purchase

reforms of UHC by the NHIF, it was established that some of the communication media used by the NHIF included television, radio, newspaper, social media, mobile phones, billboards, and sensitization campaigns. In addition, the findings concurred with Mwangi et al. (2019) that approximately 57% of the respondents reported being provided information by NHIF while 43% reported NHIF not making any communication regarding the health services covered. In addition, the results were similar to those of Munge et al. (2018) that no legislation provides for feedback or complaints mechanism from members or beneficiaries. Moreover, their attempts to use the contacts and email addresses provided on the NHIF website were unsuccessful despite the toll-free number being specified as operating 24 hours.

Healthcare service provider selection significantly and positively influenced the access to capitated health services. The results were similar to Kironji et al. (2019) that the perceived image of NHIF affect utilisation in that the perceived poor quality of services may prevent uptake, but patients may still consider utilising NHIF capitated services due to lack of alternatives. Also, the study findings further concurred with Sieverding et al. (2018) that a large majority of clinics had no accreditation although higher-level facilities were mostly accredited. Additionally, the findings agreed with Mwaura et al. (2021) that individuals who had been diagnosed with a chronic illness had a three times higher likelihood of uptake. Finally, the findings agreed with Suchman (2018) that private providers only qualify for category B or C which cover fewer services than government hospitals.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The chapter comprises of the findings of the study, conclusions and recommendations made on the determinants of primary healthcare services access by NHIF capitated members in Uasin Gishu county. It also contains areas for further studies.

5.2 Summary of Findings

The main objective of this research was to establish the determinants of access to primary healthcare services by NHIF capitated members in Uasin Gishu County, Kenya. The research's specific objectives were to evaluate the effects of NHIF benefit package, premium payment processes, selecting health facility and communication to members on the uptake of healthcare services. The research collected, analysed and presented data in tabular formats where each of the specific objectives was used as parameters of interest to the study.

5.2.1 Socio-Demographic Characteristics

The findings revealed that that 130(46%) were married, 111(39%) were single, and 19(7%) were cohabiting. In addition, the study found that 12(4%) were separated while 5(2%) were widowed. The results imply that majority were with partners and only a small portion was single. Further, the research shown that majority 163(58%) of the interviewed had 1-2 children and 43(15%) had zero children. In addition, the study found that 18(6%) had more than two children. The research imply that the interviewees had dependents who required a certain level of health care hence the requirement of capitated membership. Also, the study found that most 71(25%) of the interviewees were graduates, 70(25%) had diploma and 56(20%) were certificate holders, 55(20%) had secondary certificate, 11(4%) of the respondents had primary certificate, while 9(3%) were postgraduate. Majority had attained minimum academic and professional training depending on their cadre, and therefore, had good comprehension of the NHIF procedures and terms. Moreover, the study found that most 71(25%) earned Kshs less than 10,000 and 68(24%) had an income of Kshs 20,001 – 30,000. Additionally, the study found that 62(22%) earned Kshs 10,001 – 20,000 while 39(14%) had an income of 30,001 – 40,000. The findings imply that the respondents had an income sufficient to contribute to the NHIF every month. In addition, the research revealed that majority 125(44%) of the interviewees were contributing Kshs 100-500, 66(23%) contributed Kshs 501-1000 while 19(6%) contributed Kshs 1501-2000. The results revealed that the members of the NHIF were aware of the importance of making monthly contributions for health care.

5.2.2 Patient Knowledge of the NHIF Benefit package

The following questions were asked to evaluate the respondent's knowledge NHIF benefit package; general consultations, elementary lab inquiry, instruction and management of drugs, treatment for local diseases, minor surgical procedures and inclusion of dependants. The respondents 252(89%) agreed to know the general consultations services covered under the NHIF benefit package, the majority 230(82%) also indicated that they are aware that NHIF pays for basic lab investigations, 228(81%) were of the view that NHIF covers prescriptions and administration of drugs, and 227(80%) of the interviewed agreed that NHIF covers for treatment for local diseases. Further, the finding revealed that 210(74%) of the interviewed agreed that NHIF covers for both minor surgical procedures and inclusion of dependents. From the Chi square results, NHIF Benefit Package χ^2 (1, N = 282) = 57.597, $p < 0.001$ was evident to have a strong with patient's uptake to NHIF Healthcare Services.

5.2.3 NHIF Premium Payment Processes

On this second objective which was to determine how NHIF Premium Payment processes influence patients' access to primary healthcare services. The study assessed the following areas; monthly premium paid, process of how to pay the premiums, punishment in case of defaulting for 3 months, Payment schedule (monthly, quarterly, twice a year, annually), Wait period before enrollment and accession work affected patients' uptake to NHIF healthcare services. The findings revealed a strong agreement with all the study variables. Monthly premiums paid scored the highest 248(88%), followed by process of how to pay the contributions 238(84%) and the Payment schedule (monthly, quarterly, twice a year, annually) 229(81%). However, the areas that scored the least were waiting period before

registration and accessing services 201(71%), and Penalties in case of defaulting for 3 months 196(70%).

5.2.4 Healthcare service provider selection

This third objective was to establish how selecting health facilities influence patients' access to healthcare services. The study addressed the following areas; rules of selection, preference of healthcare facilities and adequacy of healthcare facilities.

Majority of the interviewed 218(76%) showed that they knew that they can choose the facility at their free will, 212(75%) agreed that the physical facilities are visually appealing, 208(74%) also agreed to be aware of the rules for selecting a healthcare facility, and 204(72%) agreed that the facility is close to their home. However, 74(26%) did not agree that they can select several facilities under NHIF and another 54(19%) also disagreed that NHIF offers enough health facilities for patients to select. The Chi square results indicate that selecting a health facility $\chi^2 (1, N = 282) = 63.573$, $p < 0.001$ had a strong impact with patient's uptake to NHIF Healthcare Services.

5.2.5 NHIF Communication to Citizens

The fourth objective was to establish how NHIF communication to citizen's influence patients' access to healthcare services. The study addressed the following areas; NHIF communication channels, NHIF language of communication and NHIF feedback mechanisms.

Majority of the respondents 245(87%) agreed that NHIF uses a language they understand, and 210(75%) indicated that NHIF communicates to them regularly through SMS, Newspaper, Radio, and TV. However, 195(69%) of the respondents agreed that NHIF

guides them in the registration process, 191(68%) indicated that NHIF states the range of services offered in each benefit package, 186(66%) indicated that NHIF offered them with all the information they required to know, 144(51%) indicated that NHIF always responds to public complaints and feedback. The Chi square tests showed that NHIF communication to citizens $\chi^2 (1, N = 282) = 48.3555, p < 0.001$ had a strong link to the uptake of NHIF Primary Healthcare Services. These findings showed that sound communication to members' aids in access to NHIF healthcare services.

5.2.6 Access to Capitated Health Services by Members

The study found that the capitated health services are available to all members. It also found that the capitated health services were accessible to all members and that the capitated health services were not adequate for all members and that the capitated health services were not affordable to all members. The findings revealed that members were aware of the capitated health services offered in their facilities.

With significance values of .001, .001, .001, and .001, the study's four independent variables—patient knowledge of the NHIF benefit package, paying for premium procedures, choosing a medical facility, and NHIF communication to citizens were found to be significant predictors of utilization of capitated health services at the 95% significance level. Furthermore, the results indicate that each of the four characteristics significantly influences a person's ability to receive capitated health services.

The Hosmer and Lemeshow Goodness-of-fit test (GOF) was employed to determine the appropriate specification of the study model. The findings demonstrate the statistical significance of the logistic regression model ($\chi^2 (2) = 2.469, p = 0.291$). The prediction

model is rejected if the GOF result has a p-value of less than 0.05, and it is accepted if the p-value of the GOF result is greater than 0.05. Of individuals who had access to primary care health services, 55.2% were properly classified by the model, which also explained 45.4% (Nagelkerke R²) of the variability in access.

5.3 Conclusions

From the findings, it is evident that knowledge of the NHIF benefit package had a positive association with access to primary healthcare services of NHIF capitated members of Uasin Gishu County. While most members were aware of their health entitlement, it was evident that more effort is required to increase awareness on entitlement to surgical services and inclusion of dependants.

Healthcare service provider selection had a positive association with access to primary healthcare services. The main factors included the ability to choose a facility at free will, NHIF rules for selecting a healthcare facility, physical appearance of the facilities, and proximity of the healthcare facilities to their homes.

NHIF communication to citizens had a positive association with access of primary healthcare services of capitated members of Uasin Gishu County. Communication channels and NHIF language of communication were effective which aided in access to primary healthcare services, but members expressed dissatisfaction with the availability of information about the NHIF benefit package, and feedback and complaint mechanisms. NHIF premium payment processes had a positive association with access of primary healthcare services of capitated members of Uasin Gishu. Factors like premium payment

process, awareness of the premium to be paid, payment schedule (monthly, quarterly, twice a year, annually), waiting period before registration and penalties influenced access.

5.4 Recommendations on Research Finding

The study recommended that NHIF management in various facilities conduct regular service training's for NHIF members to educate them on their entitlements, premium payment processes, selection of NHIF accredited facilities and coverage penalties in order to promote and increase uptake. The research suggests that NHIF procedures should be simplified to improve patient knowledge of NHIF benefit package, including premium payment processes, accessing the packages and healthcare service provider selection procedures easy to understand by removing bureaucracies present.

The research advocates implementation of a sound communication systems that allows for real time dissemination of information and feedback and send reminders about payment status and have personalised communication approach mechanism for the clients. The study also recommends the NHIF management to adopt a modern communication system to reduce the number of movements between the NHIF and the healthcare providers. The study advocates for implementation of modern and efficient communication system that incorporates mainstream media and channels like WhatsApp, and YouTube which interchangeably ensures that target clients are reached.

5.5 Recommendations for Further Research

The findings of the study indicate that factors not covered in this study influenced 45% of access to capitated health services by members. Hence, there is need to conduct more research on factors that influence 55% of access to capitated health services by members.

Further, the researcher suggests that further research be done on availing capitated health services across the country. The research also recommends the NHIF to create more awareness of the health coverage plan for the informal sector and promote flexible M-pesa payment options even in vernacular to reach more populations especially in the rural areas, to enhance access. It also suggests the use of feedback mechanisms to send reminders about payment status, coverage and important contact information about the benefit package.

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APPENDICES

Appendix 1: Informed Consent Letter

Kenya Methodist University
P. O Box 267-60200
MERU, Kenya

SUBJECT: INFORMED CONSENT

Dear Respondent,

My name is Barbara Were, I am a master's student from Kenya Methodist University. I am conducting research titled: **Determinants of Primary Healthcare Services Access by NHIF Capitated members in Uasin Gishu County, Kenya.** The findings will be used to strengthen the health systems in Kenya and other low and middle-income countries in Africa as a result, counties, communities, and individuals will also benefit from it. The survey will take about 40 minutes to complete, and I would be glad if you would kindly give your consent to participate in the study and answer all the questions correctly. The answers you provide will be kept confidential and anonymous and would only be used for the research.

Procedure to be followed

Participation in this study will require you to answer the questions on the questionnaire which will be provided. You have the right to refuse participation in this study. You will not be penalized nor victimized for not joining the study and your decision will not be used against you nor affect you as you seek healthcare services. Please remember that participation in the study is voluntary. You may ask questions related to the study at any time. You may refuse to respond to any questions, and you may stop an interview at any time. You may also stop being in the study at any time without any consequences to the services you are rendering.

Rewards

There is no reward for anyone who chooses to participate in the study.

Confidentiality

The questionnaire will be given in a private setting. Your name will not be recorded on the questionnaire and the questionnaires will be kept in a safe place at the University.

Contact Information

If you have any questions, you may contact the following supervisors:

1. Dr. Eunice Muthoni Mwangi

Department of Population Health
Aga Khan University – East Africa.

2. Ms. Lillian Muiruri
Department of Health Systems Management
Kenya Methodist University, Nairobi campus.

Participant's Statement

The above statement regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions will be answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time. I understand that I will not be victimized at my place of where I seek healthcare services whether I decide to leave the study or not and my decision will not affect the way I am treated at the healthcare facility.

Name of Participant..... Date.....
Signature.....

Investigator's Statement

I, the undersigned, have explained to the volunteer in a language s/he understands the procedures to be followed in the study and the risks and the benefits involved.

Name of Researcher.....Were, Barbara Nawire.....Date.....
Researchers Signature.....

Appendix 2: Public Health Facilities

NHIF accredited facilities in Uasin Gishu County	Referral hospital (1)	District hospital (2)	Sub-county Hospital (11)	Dispensaries (88)	Health centres (23)
Aar Eldoret Health Centre	Moi Teaching & Referral Hospital	Uasin Gishu District Hosp.	Burnt Forest Sub-County Hospital	Baharini Dispensary	Ainabkoi (Rcea) Health Centre
Ainabkoi (Rcea) Health Centre		Huruma District Hosp.	chebiemit district hospital	Barakeiywo Dispensary	Chembulet Health Centre
Ampath Reference Laboratories			Huruma District Hosp.	Barsombe Dispensary	Chepkanga Health Centre
Baharini Dispensary			Iten District Hospital (Elgeyo Marakwet)	Cengalo Dispensary	Chepkigen Health Centre
Barakeiywo Dispensary			kabartonjo district hospital	Chagaiya Dispensary	Kabobo Health Centre
Barsombe Dispensary			Kaptarakwa Sub-county Hospital		Kapsoya Health Centre
Bliss Gvs Health Centre Eldoret Pcc			kesses sub-county hospital		Kapteldon Health Centre
Bliss Gvs Healthcare Ltd Zion Mall			Kocholwa Sub-county Hospital		Katuiyo Health Centre
Bliss Gvs Healthcare, Eldoret			Matunda sub-county hospital		Kesses Health Centre
Burnt Forest Private Clinic					Kimumu Health Centre

Burnt Forest Sub-County Hospital			Moiben Sub-County Hosp		Kipkabus Health Centre
Cedar Clinical Associates			Tot Sub-county Hosp		Kipsigak Health Centre
Cengalo Dispensary			Turbo Sub-county Hosp		Kuinet Health Centre
Chagaiya Dispensary					Langas Racecourse Health Centre
Chebarus Dispensary			Ziwa Sub County Hosp		Moi's Bridge Health Centre
chebiemit district hospital					Pioneer Health Centre
Cheboin Dispensary					Sosiani Health Centre
Chemalal Dispensary					Soy Health Centre
Chembulet Health Centre					Turbo Health Centre
Chemororoch Dispensary					West Health Centre
Iten District Hospital (Elgeyo Marakwet)					
Jabali Dispensary					
Kabobo Health Centre					
kabartonjo district hospital					
Kamuyu Dispensary (Tarakwa)					
Kamuyu Dispensary					
Kapkei Dispensary					
Kapkoi Dispensary					
Kaplelach Chepyakwai					
Kaplelach Tumoge					

Kuinet Dispensary					
Kuinet Health Centre					
Langas Racecourse Health Centre					
Leberio Dispensary					
Lelmolok Nursing Home					
Lemoru Ngeny Dispensary					
Lingwai Dispensary					
Magoon Dispensary					
Mary Immaculate Health Centre – Kaptagat					
Matharu Dispensary					
Matunda sub-county hospital					
Mediheal Hosp.& Fertility Center					
Meibeki Dispensary					
Merewet Dispensary					
Mobet Dispensary					
Mogoon Dispensary					
Moi Teaching & Referral Hosp					
Moi's Bridge Health Centre					
Moiben Sub-County Hospital					
Mosop Dispensary					
Mti Moja Starlight Medical Clinic					
Muchorwe Dispensary					
Murgor Hills Dispensary					
Murgusi Dispensary					

Rapha Dialysis And Diagnostic Centre					
Reale Medical Centre					
Sambut Dispensary					
Segero Central Dispensary					
Simotwo Dispensary (Eld. East)					
Sinonin Dispensary					
Soliat Dispensary					
Sos Medical Centre Eldoret					
Sosiani Health Centre					
Soy Health Centre					
St. Luke's Orthopaedics & Trauma Hospital					
St.Brigittas Catholic Health Centre					
St.Marys Medical Centre Kapsoiya					
Starlight Mti Moja					
State Lodge Dispensary					
Sugoi A Dispensary					
Sugoi B Dispensary					
Tangasir Dispensary					
Tarakwa Dispensary					
Tegego Dispensary					
Texas Cancer Centre Eldoret					
Tingwa Dispensary					
Top Hill Brain And Spine Hospital					

Torochmoi Dispensary					
Tot Sub-county Hospital					
Trinity Mission Hospital					
Tugen Estate Dispensary					
Tuiyoluk Dispensary					
Tulwet Dispensary					
Turbo Health Centre					
Turbo Rural & Demonstration Centre					
Turbo Sub-county Hospital					
Twiga Dispensary					
Uasin Gishu District Hospital					
Uasin Gishu Memorial Hospital (Eldoret)					
Uasin Gishu County Beyond Zero Mobile Clinic					
Uhuru Dispensary					
Wayside Medical Clinic					
West Health Centre					
Ziwa Sub County Hospital					

Appendix 3: Questionnaire for citizens registered under NHIF National scheme

Section A: Socio-Demographic Characteristics

1. Sex/Gender

- ☐ Male
- ☐ Female

2. What is your age? (years)

3. What is your marital status?

- ☐ Single
- ☐ Married
- ☐ Cohabiting
- ☐ Separated
- ☐ Divorced
- ☐ Widowed

4. How many children do you have?

5. What is the highest level of education attained?

- ☐ None
- ☐ Primary
- ☐ Secondary
- ☐ Certificate
- ☐ Any other (specify)
- ☐ Diploma
- ☐ Graduate
- ☐ Postgraduate

6. What is your occupation?

- ☐ Employed
- ☐ Self-employed
- ☐ Student
- ☐ Any other (specify)

7. What is your monthly household income in Kshs?

- ☐ Less than 10,000
- ☐ 10,001 – 20,000
- ☐ 20,001 – 30,000
- ☐ 30,001 – 40,000
- ☐ 40,001 – 50,000
- ☐ 50,001 and above

8. How much do you contribute per month to NHIF? (Kshs)

9. To what extent do you agree with the following statements;

Strongly Agree - SA, Agree - A, Not Sure - NS, Disagree – D, Strongly Disagree-SD

I am always entitled to the following	SA	A	NS	D	SD
SECTION A: NHIF Benefit Package					
1. General consultation					
2. Basic lab investigations					
3. Prescription and administration of drugs					
4. Treatment for local diseases					
5. Minor surgical procedures					
6. Inclusion of dependents					
I am aware of the following					
SECTION B: Payment of Premium processes					
7. Amount of monthly contributions needed					
8. Process of how to pay the contributions					
9. Penalties in case of defaulting for 3 months					
10. Payment schedule (monthly, quarterly, twice a year, annually)					
11. Waiting period before registration and accessing services					
SECTION C: Healthcare Service Provider Selection					

12. NHIF communicates the rules for selecting a healthcare facility					
13. NHIF provides an adequate number of health facilities for patients to choose from					
14. I can choose more than one facility under NHIF					
15. I choose the facility at my free will					
16. The facility is close to my home					
17. Physical facilities are visually appealing					

To what extent do you agree with the following statements	SA	A	NS	D	SD
SECTION D: NHIF Communication to citizens					
18. NHIF communicates to me regularly through SMS, Newspaper, Radio, TV					
19. NHIF uses a language I understand					
20. NHIF guides me in the process of registration					
21. NHIF provides me with all the information I require and need to know					
22. NHIF states the range of services offered in each benefit package					
23. NHIF always responds to public complaints and feedback					

SECTION E: Access to Primary Healthcare Services	SA	A	NS	D	SD
1. Service providers are always willing to help patient					
2. Service providers give patients personal attention					

3. I feel safe while interacting with the hospital employees					
4. Attitude of the service providers is good					
5. I get all prescribed drugs and services at the facility					
6. The staff are trained and qualified					
7. I have access to all NHIF outpatient services					
8. The waiting time is often not too long					
9. NHIF prescribed services are always available					
10. I am never asked to co-pay for registration, consultation, medications, or laboratory services					

Appendix 4: Kenya Methodist University Scientific and Ethics Review Approval



KENYA METHODIST UNIVERSITY

P. O. BOX 267 MERU - 60200, KENYA
TEL: 254-064-30301/31229/30367/31171

FAX: 254-64-30162
EMAIL: INFO@KEMU.AC.KE

July 12, 2022

KeMU/SERC/HSM/22/2022

WERE BARBARA NAWIRE
HSM-3-0896-2/2019

Dear Barbara,

**SUBJECT: DETERMINANTS OF ACCESS TO PRIMARY HEALTHCARE SERVICES OF
CAPITATED MEMBERS IN UASIN GISHU COUNTY, KENYA**

This is to inform you that Kenya Methodist University Scientific Ethics and Review Committee has reviewed and approved your research proposal. Your application approval number is KeMU/SERC/HSM/22/2022. The approval period is 12th July, 2022 – 12th July, 2023.

This approval is subject to compliance with the following requirements:-

- I. Only approved documents including (informed consents, study instruments, MTA) will be used.
- II. All changes including (amendments, deviations, and violations) are submitted for review and approval by Kenya Methodist University Scientific Ethics and Review committee.
- III. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to KeMU SERC within 72 hours of notification.

- IV. Any changes, anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to KeMU SERC within 72 hours.
- V. Clearance for export of biological specimens must be obtained from relevant institutions.
- VI. Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- VII. Submission of an executive summary report within 90 days upon completion of the study to KeMU SERC.

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

Yours sincerely,



Appendix 5: NACOSTI Approval

Firefox



REPUBLIC OF KENYA



**NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION**

Ref No: **348679** Date of Issue: **21/July/2022**

RESEARCH LICENSE



This is to Certify that Ms. BARBARA WERE of Kenya Methodist University, has been licensed to conduct research in Uasin-Gishu on the topic: DETERMINANTS OF ACCESS TO PRIMARY HEALTHCARE SERVICES OF CAPITATED MEMBERS IN UASIN GISGU COUNTY, KENYA for the period ending : 21/July/2023.

License No: **NACOSTI/P/22/19153**

348679

W. W. W.

Applicant Identification Number

**PROCEED COUNTY COMMISSIONER
26/07/2022
UASIN GISGU COUNTY**

**Director General
NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY &
INNOVATION**

Verification QR Code



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

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013
The Grant of Research Licenses is Guided by the Science, Technology and Innovation (Research

Licensing) Regulations, 2014

CONDITIONS

1. The License is valid for the proposed research, location and specified period
2. The License any rights thereunder are non-transferable
3. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research
4. Excavation, filming and collection of specimens are subject to further necessary clearance from relevant Government Agencies
5. The License does not give authority to transfer research materials
6. NACOSTI may monitor and evaluate the licensed research project
7. The Licensee shall submit one hard copy and upload a soft copy of their final report (thesis) within one year of completion of the research
8. NACOSTI reserves the right to modify the conditions of the License including cancellation without prior notice

National Commission for Science, Technology and Innovation
Waiyaki Way, Upper Kabete,
P. O. Box 30623, 00100 Nairobi, KENYA
Land line: 020 4007000, 020 2241349, 020 3310571, 020 8001077
Mobile: 0713 788 787 / 0735 404 245
E-mail: dg@nacosti.go.ke / registry@nacosti.go.ke
Website: www.nacosti.go.ke

Appendix 6: Approval from the County Director



Appendix 7: Approval from Management

Med sup VGO74
Kindly assist.

Approved to conduct
the study
Barbara Nawire

about:blank



KENYA METHODIST UNIVERSITY
P. O. BOX 267 MERU - 60200, KENYA
TEL: 254-064-30301/31229/30367/31171
FAX: 254-64-30162
EMAIL: INFO@KMU.KE

67 SEP 2022

UASIN GISHU COUNTY
P. O. Box 5655-30100, ELDORET

KeMU/SERC/HSM/22/2022

July 12, 2022

WERE BARBARA NAWIRE
HSM-3-0896-2/2019

Dear Barbara,

**SUBJECT: DETERMINANTS OF ACCESS TO PRIMARY HEALTHCARE SERVICES OF
CAPITATED MEMBERS IN UASIN GISHU COUNTY, KENYA**

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7/15/2022, 11:42 AM

Appendix 8: Hosmer & Lemeshow test and Nagelkerke R Square

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	192.153 ^a	.291	.454

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	2.469	2	.291

Classification Table^a

	Observed	Predicted		
		Access_Outpatient_services		Percentage Correct
		.00	1.00	
Step 1	Access_Outpatient_services .00	30	29	50.8
	1.00	7	216	96.9
	Overall Percentage			87.2

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	NHIF_Knowledge(1)	2.227	.688	10.486	1	.001	9.274
	NHIF_Premiums(1)	1.675	.607	7.626	1	.006	5.339
	Healthcare Provider selection (1)	1.809	.414	19.041	1	.000	6.101
	NHIF_Communication(1)	1.360	.413	10.849	1	.001	3.896
	Constant	-4.475	.919	23.715	1	.000	.011

a. Variable(s) entered on step 1: NHIF_Knowledge, NHIF_Premiums, Healthcare provider selection, NHIF_Communication.

Appendix 9: Approval from Chief Officer, Health service

REPUBLIC OF KENYA
COUNTY GOVERNMENT OF UASIN GISHU

Tel: 1400-direct line 053-2016211
053-2016000
053-2016125

Fax: +254-053-2662884
Website: www.uasingishu.go.ke
Email: info@uasingishu.go.ke



When Replying, Please Address to:
County Secretary
Uasin-Gishu County
P.O. Box 40 - 30100
Eldoret, Kenya

REF: UGC/ADM.1/31/GEN/2022/VOL.1

28 July, 2022

Ms. Barbara Nawire Were,
P.O. Box 7787 - 30100,
ELDORET.

**APPROVAL TO CARRY OUT RESEARCH
WITHIN THE COUNTY GOVERNMENT**

Your letter of 26 July, 2022 on the above subject is in reference.

Authority is hereby granted to you to carry out your research within Uasin Gishu County Government, for your academic use and we request you to share your findings with the Office of the undersigned. Your findings may be useful in addressing the Determinants of Access to Primary Healthcare Services of NHIF Capitated Members in the County.

By copy of this letter, the Ag. Chief Officer, Health Services is requested to assist you accordingly.



Edwin Bett
**COUNTY SECRETARY/
HEAD OF COUNTY PUBLIC SERVICE**

Copy: Chief Officer, Health Services.

